Edited by Diana K. Davis and Edmund Burke III

Environmental Imaginaries of the Middle East and North Africa

SERIES IN ECOLOGY AND HISTORY

Environmental Imaginaries of the Middle East and North Africa

Ohio University Press Series in Ecology and History

James L. A. Webb, Jr., Series Editor

Conrad Totman
The Green Archipelago: Forestry in Preindustrial Japan

Timo Myllyntaus and Mikko Saikku, eds.
Encountering the Past in Nature: Essays in Environmental History

James L. A. Webb, Jr.
Tropical Pioneers: Human Agency and Ecological Change in the Highlands of Sri Lanka, 1800–1900

Stephen Dovers, Ruth Edgecombe, and Bill Guest, eds.
South Africa's Environmental History: Cases and Comparisons

David M. Anderson
Eroding the Commons: The Politics of Ecology in Baringo, Kenya, 1890s–1963

William Beinart and JoAnn McGregor, eds.
Social History and African Environments

Michael L. Lewis
Inventing Global Ecology: Tracking the Biodiversity Ideal in India, 1947–1997

Christopher A. Conte
Highland Sanctuary: Environmental History in Tanzania's Usambara Mountains

Kate B. Showers
Imperial Gullies: Soil Erosion and Conservation in Lesotho

Franz-Josef Brüggemeier, Mark Cioc, and Thomas Zeller, eds.
How Green Were the Nazis? Nature, Environment, and Nation in the Third Reich

Peter Thorsheim
Inventing Pollution: Coal, Smoke, and Culture in Britain since 1800

Joseph Morgan Hodge
Triumph of the Expert: Agrarian Doctrines of Development and the Legacies of British Colonialism

Diana K. Davis
Resurrecting the Granary of Rome: Environmental History and French Colonial Expansion in North Africa

Thaddeus Sunseri
Wielding the Ax: State Forestry and Social Conflict in Tanzania, 1820–2000

Mark Cioc
The Game of Conservation: International Treaties to Protect the World's Migratory Animals

Karen Brown and Daniel Gilfoyle, eds.
Healing the Herds: Disease, Livestock Economies, and the Globalization of Veterinary Medicine

Marco Armiero and Marcus Hall, eds.
Nature and History in Modern Italy

Karen Brown
Mad Dogs and Meerkats: A History of Resurgent Rabies in Southern Africa

Diana K. Davis and Edmund Burke III, eds.
Environmental Imaginaries of the Middle East and North Africa

Environmental Imaginaries of the Middle East and North Africa

Edited by Diana K. Davis
and Edmund Burke III

With an Afterword by Timothy Mitchell

OHIO UNIVERSITY PRESS
ATHENS

Ohio University Press, Athens, Ohio 45701
ohioswallow.com

Printed in the United States of America
Ohio University Press books are printed on acid-free paper ♾ ™

20 19 18 17 16 15 14 13 12 11 5 4 3 2 1

Library of Congress Cataloging-in-Publication Data
Environmental imaginaries of the Middle East and North Africa / edited by Diana K. Davis and Edmund Burke III ; with an afterword by Timothy Mitchell.
p. cm. — (Ohio University Press series in ecology and history)
Includes bibliographical references and index.
ISBN 978-0-8214-1974-8 (hardcover : alk. paper)
1. Human ecology—Middle East—History. 2. Human ecology—Africa, North—History. 3. Middle East—Environmental conditions. 4. Africa, North—Environmental conditions. 5. Middle East—Environmental conditions—Historiography. 6. Africa, North—Environmental conditions—Historiography. 7. Middle East—Foreign public opinion, British. 8. Middle East—Foreign public opinion, French. 9. Great Britain—Colonies—History. 10. France—Colonies—History. I. Davis, Diana K. II. Burke, Edmund, 1940–
GF670.E58 2011
304.20956—dc23

2011031113

Contents

Illustrations

Figures

Maps

Tables

Preface

Edmund Burke III

The modernist fables that underlie the developmentalist states of the Middle East and North Africa (MENA) have only recently begun to attract the attention of scholars in their own right. As French and British colonial fantasies of recovering the supposed agricultural productivity of Roman North Africa have given way to the similarly delusional dreams of experts who have sought to modernize postcolonial states in the region, the subject of their underlying environmental imaginaries has come to the fore.[1] It is the considerable merit of the studies in this volume to document the continuities in the environmental imaginaries that have shaped the modernization projects of both colonial and postcolonial states over the past two centuries.

Colonial writers believed that the Middle Eastern environment suffered irreversible degradation after classical antiquity. Different authors ascribed the alleged decline to different causes, including the goat, the Bedouin, and Islam. The real culprit, according to Theodore Wertime, may well have been ancient metallurgy, which was enormously inefficient.[2] Archeological evidence from around the Mediterranean tends to support this finding. According to a major European Union–funded study, the principal wave of deforestation in the Mediterranean coincided with the onset of the Bronze Age.[3] The same study finds that the Mediterranean environment was essentially stable (with oscillations) from the Roman period until the nineteenth century.

Colonial understandings of the environmental history of the MENA region were distorted by orientalist assumptions. It is the aim of the essays in this book to explore just how and why they mattered. Having said this, it is important to recognize that human-induced environmental change was not the monopoly of modern actors. The Middle Eastern environment itself was shaped and reshaped by long-term historical processes. Neither the huge canal systems in the Tigris/Euphrates valley nor the artificial

oases in the deserts and plateaus were necessary for human survival. Rulers made choices. The environmental costs, as always, were borne by later generations. Thus the question: Are modern engineers and technocrats the heirs of the pharaohs? Or is there something that distinguishes them from ancient technologists?[4]

Here we need to see the imperial dreams of Cromer and Lyautey (proconsuls of empire in Egypt and Morocco respectively) and those of postcolonial experts as the products of their world historical context: the age of fossil fuels (1800 CE–present).[5] The age of fossil fuels reflected the enormous multiplication of the quantity of energy available to humans with the coming of steam power and electricity. In this respect the material realities that shaped modern dreams of power differed fundamentally from those that shaped the world of the engineers and statebuilders of classical antiquity and the Islamic empires that followed them.

Premodern people operated under the constraints of the solar energy regime (to 1800 CE) in which human and animal power constituted the principal sources of energy, along with wood energy. (Water and wind power in this period generated a small percentage of the total energy then available.) In an effort to dramatize the huge difference between the energy available in classical antiquity and that available in modern times, consider this thought experiment. According to Vaclav Smil, the total energy expended by the tens of thousands of slaves who constructed the Great Pyramid is roughly equivalent to energy expended by a single moderate-sized bulldozer.[6] This is not to belittle the achievements of classical engineers in any respect. It is simply to point out the energetic limits of the world in which they existed. The rerouting of rivers in ancient Mesopotamia and the construction of the pyramids still command our awe.

The environmental orientalism of the planners and engineers of the colonial and postcolonial era thus reflects the fundamentally different energetic context of modern times (even if the energetic equations of the colonial and postcolonial eras were themselves significantly different). The colonial period largely coincided with the age of coal (1750–1950), whereas the postcolonial period (1950–present) was shaped by petroleum and natural gas. However, colonial engineers and experts were still somewhat constrained by the energy dynamics of the solar energy age. Whereas the Suez Canal (1869) and the first Aswan dam (1902) were constructed by corvée labor, the Nasser High Dam was constructed by modern earthmoving equipment. Dreams of empire were enabled by the changing energetic contexts.

If energy regimes shaped what engineers and experts could accomplish, they also distanced them from understanding the consequences of

their interventions. In the rain-fed agricultural systems of the solar energy regime (most of human history), the consequences of faulty engineering were soon exposed. The fact that deforestation of the hills soon led to floods in the plains was soon understood. Most complex societies devised hedges against the Malthusian scissors of drought, famine, and disease. Ambitious projects like the Grand Canal had huge energy price tags, and were therefore rare, and well scouted in advance.

In the fossil fuel era, the illusion of omnipotence pertained. Forests could be felled, river courses diverted, giant dams constructed, and the energetic costs were seen as manageable. Petroleum and natural gas, along with greed and orientalist visions, made it all possible. The inevitable externalities (unprecedented flooding, landscape degradation, and pollution) were rarely foreseen. Here's the bottom line: what made environmental orientalism and the "rule of experts" possible were the new energetic conditions of modern times.[7] The production of environmental imaginaries (capitalism and the modern state as well) grew out of this epochal transformation in human energy regimes.

Imperial dreams such as the Aswan High Dam, hubristic though they are, were not solely the manifestation of human vanity and greed. Nor were they in any simple way the result of seeing the world through orientalist glasses, though both were certainly involved. They also stemmed from the dramatic transformation in human demography of modern times. In the face of ever-rising populations, engineers and technocrats, both indigenous and expatriate, sought solutions for societies otherwise hard-pressed by the huge increase in numbers. Without the Aswan High Dam, Egypt would have experienced the devastating 1980s Sahel famine.[8]

Notes

1. Diana K. Davis, *Resurrecting the Granary of Rome: Environmental History and French Colonial Expansion in North Africa* (Athens: Ohio University Press, 2007).

2. Theodore A. Wertime, "The Furnace versus the Goat? Pyrotechnological Industries and Mediterranean Deforestation," *Journal of Field Archaeology* 10, no. 4 (1983): 445–52.

3. A. T. Grove and Oliver Rackham, *The Nature of Mediterranean Europe: An Ecological History* (New Haven: Yale University Press, 2003). See also John Perlin, *A Forest Journey: The Role of Wood in the Development of Civilization* (New York: Norton, 1989).

4. See my "The Transformation of the Middle Eastern Environment, 3000 B.C.E.–2000 C.E.," in *The Environment and World History, 1500–2000,* ed. Edmund Burke III and Kenneth L. Pomeranz (Berkeley: University of California Press, 2009), 81–117.

5. On the foregoing, see my "The Big Story: Human History, Energy Regimes and the Environment," in *The Environment and World History, 1500–2000,* ed. Edmund Burke III and Kenneth L. Pomeranz (Berkeley: University of California Press, 2009), 33–53.

6. Vaclav Smil, *Energy in World History* (Boulder, Colo.: Westview Press, 1994).

7. Timothy Mitchell, *Rule of Experts: Egypt, Techno-politics, Modernity* (Berkeley: University of California Press, 2002).

8. Mike Davis, *Late Victorian Holocausts: El Nino Famines and the Making of the Third World* (New York: Verso, 2001).

Acknowledgments

Many debts are incurred during a collaborative project such as this. First and foremost, we would like to thank the contributors to the volume and Timothy Mitchell for writing the afterword. They are all exceedingly insightful, innovative, and accomplished scholars with whom it has been a genuine pleasure to work. Their grace and good humor at meeting deadlines, discussing their work, and making revisions made it easy and fun to work on this project. We also warmly thank the editorial director at Ohio University Press, Gillian Berchowitz, and James L. A. Webb, Jr., editor of Ohio's Series in Ecology and History, for their enthusiasm and support of this project. It has been a delight to work with them and their expert production team, including Nancy Basmajian, Jean Cunningham, and Beth Pratt. We are furthermore indebted to the anonymous reviewers of the volume for their insightful comments and helpful suggestions for revision.

In addition, Diana Davis would like to thank Terry Burke, a mentor and friend from whom she has learned so much over the years, for his collaboration on this project. For their help with various aspects of her work in this volume, she is also very grateful to Abbas Amanat, Mark Cioc, Julia Clancy-Smith, Paul Claval, Steven Greenhalgh, Roger Louis, Ian Manners, James McCann, Pernilla Ouis, Susan Slyomovics, Jeannie Sowers, and Michael Watts. At the University of California at Davis, she would like to thank, for their help and support, Dean George R. Mangun and Assistant Dean Steven Roth, as well as all of her new colleagues in the Department of History, especially Louis Warren, Ari Kelman, and Omnia El Shakry. Dan Goldstein and Jason Newborn, her colleagues at the UC Davis Shields Library, also deserve her special thanks for all their help. Her research would not have been possible without the many who helped her, and to whom she is indebted, in France at the Bibliothèque Nationale de France, Paris; the Centre des Archives Diplomatiques de Nantes; and the Centre des Archives

d'Outre-Mer, Aix-en-Provence. For the pure joy and love they bring into her life, and the patience with which they bear the work necessary for a project such as this, she is eternally grateful to James, Max, and Corbin. For their many years of guidance and friendship, she dedicates this book to Ian R. Manners and W. Roger Louis.

Imperialism, Orientalism, and the Environment in the Middle East

History, Policy, Power, and Practice

Diana K. Davis

REPRESENTATIONS OF the Middle East nearly inevitably include desolate scenes of empty and parched deserts, punctuated, perhaps, with a lonely string of camels, a verdant but isolated oasis, or a beach with large dunes of golden sand, sometimes with a pyramid, an oil derrick, or a minaret in the background. We see and read about such imagery, around the world, in tourist advertisements, in films, in the news media, and even in scholarly writing about the region. The environment figures very large in the majority of these visual and written representations. Inherent in this imagery is the fact that much of the Middle East and North Africa, a largely desert region, has been considered ecologically marginal since at least the late nineteenth century. More often than not, these lands have been defined as degraded by human action over many centuries.

Recent research, however, has shown instead that these regions are not desertified disasters despite their frequent portrayal as such.[1] In fact, the peoples of the Middle East and North Africa have lived and thrived for millennia, successfully coping with the common environmental conditions of

Figure 0.1. "A Lookout into the Desert." This undated postcard illustrates typical scenes of the Middle East from the late nineteenth and early twentieth centuries. Original postcard: "EGYPT—A Lookout into the Desert," by photographers Lehnert and Landrock. *From the collection of Dr. Paula Sanders, Rice University. Reproduced by permission.*

high temperatures and low rainfall of their arid and semiarid environments. The environment in many parts of the Middle East and North Africa has been carefully and painstakingly transformed to improve human life for much of the last five to seven thousand years and longer. The sophisticated irrigation and water-control systems developed in the region provide just one example of such environmental management.[2]

With the rise of Anglo-European imperial power in the region, though, in the nineteenth and early twentieth centuries, an environmental imaginary began to be constructed that frequently portrayed the Middle East and North Africa as being on the edge of ecological viability or as a degraded landscape facing imminent disaster.[3] Because the local inhabitants were most often blamed for the environmental degradation, by deforestation, overgrazing, or overirrigation, for example, this environmental imaginary allowed the telling of stories, or narratives, that facilitated imperial goals in the name of "improvement" and, later, of environmental "protection."

I have detailed elsewhere how this Western environmental imaginary spawned an environmental narrative of presumed degradation constructed by the French to engender dramatic economic, social, political, and environmental changes in North Africa that successfully promoted their colonial project during the nineteenth and early twentieth centuries.[4] Closely related environmental imaginaries of the Middle East and North Africa, as Shaul Cohen has demonstrated, allowed the development of a narrative of deforestation in the Levant that has facilitated the appropriation of rural land by Jewish settlers to Palestine, in the name of reforestation, since the late nineteenth century.[5] Deforestation narratives have been particularly strong in the Levant region since the nineteenth century, where some of the most emotional accounts of forest destruction have hinged

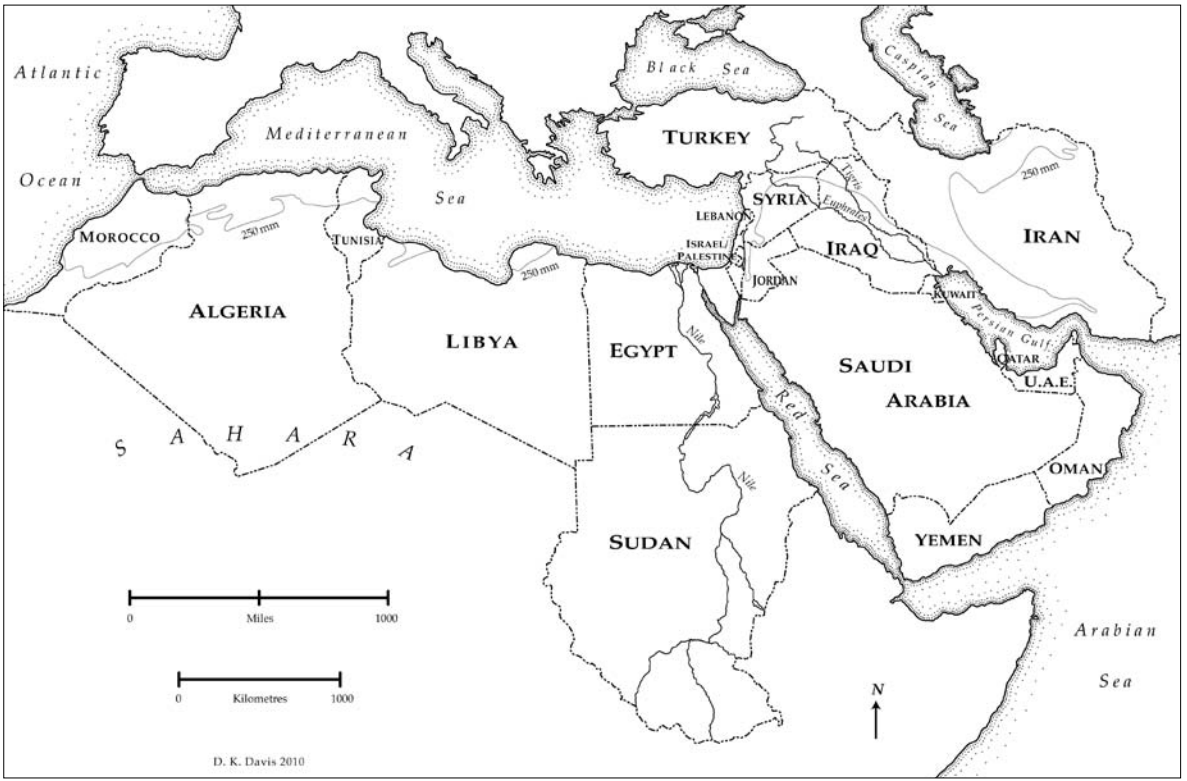
on the presumed widespread destruction of the Lebanese cedar forests illustrated in the cover image by Louis-François Cassas.[6] Similar narratives of overgrazing and desertification were used during the British Mandate in Palestine to justify forestry policies as well as laws aimed at controlling nomads, such as the 1942 Bedouin control ordinance, in the name of curbing overgrazing.[7] Such environmental imaginaries, once constructed, can be extremely tenacious and have surprisingly widespread effects.

By "environmental imaginary," I mean the constellation of ideas that groups of humans develop about a given landscape, usually local or regional, that commonly includes assessments about that environment as well as how it came to be in its current state. This use of imaginary draws more on the conceptualization of the "social imaginary" than on other uses of the term in psychological or philosophical studies.[8] Social groups may develop an environmental imaginary, for instance, by living and working in a common place. Because environmental imaginaries nearly always contain ideas about how the environment reached its current state, though, narratives of environmental change, environmental histories, are intimately linked with environmental imaginaries.[9] Therefore, such stories, or narratives, about environmental change, both inform environmental imaginaries and develop as a result of environmental imaginaries. Neither the imaginary nor the narrative(s) concerning the environment is static. Underlying each is a congeries of power relations that may shift and change to varying degrees depending on the time and place. Who tells the story of environmental change and what it means for the present and future can determine who wins and who loses when that imaginary is operationalized in the form of, for example, agricultural policies, "reforestation" projects, or environmental and economic development plans.[10]

This becomes particularly important in imperial and colonial settings. "While environmental imaginaries stem from material and social practices in [particular] natural settings,"[11] when they are developed about "faraway" places, they necessarily are informed by environmental representations constructed by others. Those constructing the knowledge that informed the environmental imaginary "back home" during the colonial period were, most of the time, new to the region being described and catalogued.[12] It is not too surprising then, that much of what was written and visually rendered about foreign environments, information that informed Anglo-European environmental imaginaries, represented the environment most often as alien, exotic, fantastic, or "abnormal," and frequently as degraded in some way.[13]

Much of the early Western representation of the Middle East and North Africa environment, in fact, might be interpreted as a form of environmental orientalism in that the environment was narrated by those who became the imperial powers, primarily Britain and France, as a "strange and defective" environment compared to Europe's "normal and productive" environment.[14] The consequent need to "improve," "restore," "normalize," or "repair" the environment provided powerful justifications for innumerable imperial projects, from building irrigation systems to reforestation activities to the bombing of "unruly" tribes to the sedentarization of nomads as a measure to prevent "overgrazing." The perceived extreme aridity and the constraints that this was seen to place on "normal" agricultural production fueled an intense interest in hydraulic management by the British and the French. Determined to boost production of economically profitable crops such as cotton, a great deal of energy and resources was spent on dams, canals, and other technologies to improve and spread irrigation infrastructures in most of the Middle East and North Africa.[15] This has left a legacy for hydraulic management perhaps greater than any other form of environmental management (such as forestry or range management) in the region that is reflected in the majority of chapters in this volume that treat water in some way. Many of these imperial environmental narratives, especially of deforestation and overgrazing, informed the discipline of ecology as it was developing in the late nineteenth and early twentieth centuries, and thus several of the narratives became institutionalized in ecological science despite their questionable accuracy.[16] It is perhaps because of this cloak of technological and scientific authority that environmental orientalism in the Middle East and North Africa has never been, to the best of my knowledge, interrogated by postcolonial scholars and others in a systematic way for the hidden relations of power rooted in its very specific forms of knowledge production.

Since the publication in 1978 of Edward Said's influential book *Orientalism,* scholars have demonstrated, in varied and sometimes contested ways, how the "orient" of the Middle East and North Africa has been represented and what the results of such representations have been.[17] Many different kinds of representations of the Middle East and North Africa have been critically analyzed, including texts written by poets, novelists, and travel writers, and many different kinds of visual renditions of the region and its peoples, especially photography and painting, and contemporary multimedia. Startlingly few of these analyses, however, have explored the Middle East and North African environment itself, and how it has been represented, from a critical perspective. One notable exception is Timothy



Map 0.1. The Middle East and North Africa, illustrating political boundaries, rivers, and the 250 mm rainfall isohyet. Below (to the south of) the 250 mm rainfall isohyet, rain-fed agriculture is nearly impossible. Agriculture without irrigation is reliable only in areas that receive above 400 mm of rainfall each year. Between 250 and 400 mm annual rainfall, agriculture without irrigation is extremely tenuous and often fails. Modified after Gerald Blake, John Dewdney, and Jonathan Mitchell, *The Cambridge Atlas of the Middle East and North Africa* (Cambridge: Cambridge University Press, 1987). Created by Diana K. Davis, 2010.

Mitchell's research on Egypt and particularly his analysis of the country as an "object of development."[18] Several parts of his book analyze how the Egyptian environment has been represented, for what reasons, and for whose benefit. Mitchell's is one of the only critical analyses of a Middle East and North African environment that takes seriously the important and far-reaching effects of environmental representation and narrative on policy, power, and practice both in the past and today.[19]

The authors in this book thus make a significant contribution by considering many of the social, political, technological, economic, and ecological implications of environmental imaginaries of the Middle East and North Africa over the long durée as well as in more recent, post-colonial settings. Together, they cover the last three centuries in a wide array of Middle East and North African countries and regions, today called Egypt, Iraq, Israel, the Maghreb (Algeria, Morocco, Tunisia), Palestine, and Turkey. Although not the focus of any single chapter, Lebanon, Libya, and Syria are also discussed by several of the authors.

Mitchell's work on Egypt has shown how international development actors such as USAID (United States Agency for International Development) and many in the Egyptian government bureaucracy in the last half of the twentieth century drew on the long-standing Western imaginary of Egypt as a marginal environment with limited resources, dependent on the Nile. The evocatively "narrow ribbon" of fertile land along the Nile, he argues, is nearly always juxtaposed with an apparent crisis of overpopulation. Such an imaginary is used to justify plans for immediate action in the sectors of agricultural and economic reform even as it naturalizes and depoliticizes serious problems of social inequality and poverty that may then be more easily and profitably ignored. Mitchell termed this framing of Egypt's economic development "a problem of geography versus demography."[20]

At the turn of the century, during the period of the British protectorate, a similar framing took place based on the Anglo-European environmental imaginary of Egypt. Jennifer Derr shows in her chapter that the British came to Egypt with certain conceptions of the environment and the powers of technology in the form of irrigation infrastructures that guided their actions and, ultimately, the very shape of the environment along the Nile. Whereas "overpopulation" was not a strong motivation for their development of irrigation works in colonial Egypt, the production of cotton was. Derr argues, though, that the drive to increase cotton production was not the only motivation for the building of the Aswan dam in 1902. She demonstrates that the British held a "technocratic imagining" of the Egyptian environment that was deeply influenced by their belief that this

desiccated, marginal environment had been astoundingly more productive during the biblical period, "the time of Joseph."

British efforts to try to regain this historical glory, assuming that more advanced irrigation and agricultural systems existed during biblical times, and eliding waterworks undertaken during the Ottoman period, underlay much of the rationale to build the dam and develop perennial irrigation in Egypt. In his chapter, though, Alan Mikhail shows that the Ottoman period was actually quite important in Egypt's development. He suggests that Egyptian peasants and the Ottoman state were deeply and personally engaged in a "responsible management" of the Nile and associated irrigation structures based on a commonly held cooperative vision of the environment in the eighteenth century. His work argues that the "microlevel" negotiations over and communal efforts to dredge irrigation canals were largely successful in maintaining a productive agricultural system. By contrast, the negative effects that the operationalization of the British colonial imaginary had on the environment, in the form of waterlogged soils and rising salinity, and on the Egyptian farmers, many of whom suffered loss of property and the transformation effectively into sharecroppers, were largely unanticipated.[21] Nonetheless, Derr concludes in her chapter, this British environmental imaginary underlay the transformation of the very geography of Egypt's land, water, economy, and social relations in long-lasting ways.

Land reclamation, making uncultivable land cultivable, in Egypt is perhaps as old as irrigation technology itself. Reclamation of land during the British colonial period was part and parcel of the expansion of irrigation. In her chapter, Jeannie Sowers focuses on Egyptian land reclamation to show how dominant state narratives of the environment developed in the second half of the twentieth century only to be increasingly challenged recently by disparate groups including those in agribusiness, civil society, and the environmental sciences. She dates the now ubiquitous neo-Malthusian narrative of overpopulation in the narrow Nile valley to the interwar period and charts the reconstructions of environmental imaginaries under postwar Egyptian regimes. During the Nasser period, the British environmental imaginary, which focused on irrigation and land reclamation for the entire Nile river basin, was partly reconfigured into a project of national sovereignty and state populism. In doing this, the Nasser regime promoted an intensification of land reclamation, as populist rhetoric abounded that called for a new contract with the spatially constrained peasantry.

Originally focused on the outskirts of the Nile Valley, land reclamation visions under Nasser, Sowers shows, spread to Egypt's southwestern desert,

designated the "New Valley," also known as Toshka. Drawing on colonial tropes of how spreading irrigation technologies would create a clean and productive citizenry, early land reclamation plans were put into practice during Nasser's rule on a small scale with irrigation water pumped from underground aquifers. Land reclamation was seized with renewed energy under Mubarak, who aimed not only to raise modern organic produce in the "pristine desert environment" of the Toshka valley, but also to develop the new, clean model Egyptian citizen while enticing private agribusiness to Egypt's agricultural sector. Sowers illustrates that state environmental narratives in the postcolonial period recombined elements of Anglo-European environmental imaginaries with the ideologies of nationalism and populism. Equally important, she demonstrates that the environmental imaginaries and narratives of less powerful, nonstate, groups can successfully challenge these hegemonic discourses in unexpected ways. She sketches how agribusiness managers have developed new narratives of land reclamation, motivated by Egypt's changing political economy, that critique the regime's uncertain land tenure policies and unpredictable policy interventions. Moreover, she explains how narratives of environmental decline, coupled with criticisms of arbitrary decision-making, have allowed environmentalists, journalists, and some public intellectuals to claim that the Toshka project represented not the successes, but rather the shortcomings, of Mubarak's authoritarian regime.

British environmental imaginaries and their transformations also form the subject of Priya Satia's chapter on Iraq during and after the First World War. Satia details how the British environmental imaginary of "Arabia," as the region was called then, changed over time facilitating a new technological vision of development and new colonial policies.[22] The imaginary was informed by established orientalist notions and biblical interpretations but also, importantly, by British misgivings resulting from their trials in the South African War and their experiences during World War I. Satia argues that the British Arabian imaginary was transformed from an early one of the region as a utopia to a more sober view that it was a barren, fallen Eden to the later interpretation that it was in need of restoration with British imperial knowledge—so that Arabia would once again become the productive cradle of civilization, a resurrected Babylonia. Such changes in how the environment was conceived allowed the fusion of development and surveillance in the form of aerial policing and shelling to bring "peace and prosperity" in ways that have been previously unrecognized.

For the British arriving in Arabia, Satia illustrates that the environment appeared "extraterrestrial" in its strangeness, "infinitely mysterious," more like the face of the moon than the earth, and, it seemed to them,

unknowable. At first seen mostly as a desert paradise free from the defects of British industrial urban life, within a short time this environment was being condemned as a chaotic wasteland, ruined by the Ottomans, that needed to be reclaimed with the aid of British technology and expertise. This technical vision of Iraq included irrigation improvements derived from the British experience in India, but, more important to Satia's argument, it included the development and refinement of aerial surveillance. Romantic associations between the fighting tactics of Arab nomads and the airplane's quick abilities provided an interpretation of the airplane as the perfect tool to survey the "unmappable nomad terrain" of Mesopotamia. The British used this new tool after the war as they took mandatary control of the region to subdue the "unruly tribes" with bombardment in order to allow the "development" of Iraq to proceed. Deeply ingrained views shaped by environmental determinism, though, led to portrayals of the tribes as tough inhabitants of a harsh environment that could tolerate random acts of violence in ways that others could not. Thus, Satia, concludes, was brutality justified in the name of technocratic development that had to overcome, in the British Arabian imaginary, a difficult and unknowable desert environment and people, a socioecological state of exception that haunts our world today.[23]

Nearly a century earlier, in North Africa, the French similarly justified many colonial policies for dealing with the local populations based in large part on their environmental imaginary of the Maghreb. The widespread Anglo-European perception of the North African environment in the early nineteenth century was one of great fertility that had lapsed under negligent Ottoman administration. Soon after the French conquered Algeria in 1830, though, they developed a new colonial environmental narrative that blamed the local inhabitants, particularly the nomads, for apparently deforesting and desertifying the region over the last several hundred years since the "Arab invasions." This colonial narrative, Diana Davis argues in her chapter, was based on the erroneous belief that during the Roman period North Africa had been more fertile and much more heavily forested than when the French arrived in Algeria. She shows that most French settlers in Algeria, and later in Tunisia and Morocco, developed an identity that claimed Roman heritage. Moreover, many of these settlers vehemently believed that they had to restore the environment to its former Roman glory with reforestation projects and agricultural improvements in order to prove themselves the heirs of Rome. That is, their identity hinged in important ways on restoring the environment, which they saw as an environment of "self," to its rightful state. This contrasts with the exotic and "abnormal" environmental

imaginaries most other imperial/colonial powers constructed of their overseas territories. Davis suggests, furthermore, that the perceived need to restore the environment to its mythical former fertility also informed certain notions of French imperial and, to a certain degree, national identity, especially in the early twentieth century in ways not previously considered. Their colonial environmental history of North Africa allowed many of the French to identify themselves as heroes who had restored the ruined environment and proved themselves the true heirs of Rome.

In his chapter, George Trumbull charts what he terms the reimagining of the Sahara by the French in the era of decolonization, a crucial but overlooked component of the economic history of the great desert. Related, in part, to the environmental narratives described by Davis, Trumbull explains that the French vision of the Sahara as a sea of sand, as a place danger, of intractable thirst and frequently death, dominated in the nineteenth century. Although there was interest in trying to increase both water supplies and economic activities in the desert during that time, little was achieved. By the mid-twentieth century, though, the French imaginary of the Sahara was transformed, according to Trumbull, and reconceived as a utilitarian space, as they sought to economically develop the desert through mining and petroleum extraction during a period of national crisis. By this time, large amounts of subterranean water had been discovered, and this newfound resource generated dreams of populating the Sahara with workers and managers complete with cottages and gardens growing roses. He calls this a transformation of the environmental representation of the great desert one that is essentially a "passage from menace to management." In this way, the Sahara, in the French mind, was reconfigured for mastery that could prove the grandeur of France even as it was losing the battle to control the rest of Algeria. Some even dreamed of eliminating the desert altogether, believing that enough irrigation and planting could change the climate itself, revealing the widespread underlying belief that deserts are "unnatural" aberrations. As Trumbull notes, the local peoples who had lived successfully in the Sahara for generations were ignored, as was their knowledge of water supplies and environmental management. The Algerians, however, had their own imaginary of their environment, including the desert. This is implied in the words of the famous nineteenth-century Algerian freedom fighter, ʿAbd al-Qâdir, as quoted by Trumbull, "If you knew the secrets of the desert, you [the French] would think like me; but you are ignorant of them."

The chapters discussed up to this point all focus primarily on Western, Anglo-European environmental imaginaries of the Middle East and North

Africa, how and why they were formed and transformed, and how they affected a wide array of subjectivities, policies, and practices. As the example from contemporary Egypt shows, successive Egyptian regimes have invoked various elements of colonial environmental imaginaries in order to further state power and private profit in a variety of sectors including agriculture. The chapter by Sowers and that by Trumbull, though, provide glimpses of the different environmental imaginaries of more local, non-Western groups in the Middle East and North Africa in the nineteenth and twentieth centuries. Do these visions constitute an alternative to what has been suggested here as "environmental orientalism"? If they do, what are the implications and are they significant? By examining the narratives of farmers, government officials, extension agents, and political groups, in several Middle Eastern and North African countries, the remaining chapters in the volume provide examples with which we might begin to try to explore these questions further.[24]

Leila Harris analyzes multiple local narratives of environmental change in contemporary southeastern Turkey in order to compare the stories of scientists, local, small-scale farmers, and agricultural extension agents. She argues that both divergent and convergent narratives, or "story lines," are able to reveal underlying environmental imaginaries. Significantly, Harris shows how important it is to consider such narratives in the context of detailed histories of sociopolitical and economic change affecting the region at the local, national, and international levels. We find a common faith in technoscience shared by all the actors in this example that is widely believed to be able to increase the productivity of already good land, rather than as a "fix" for previously ruined land. This might be surprising in the light of the common Anglo-European imaginary of a degraded Middle Eastern and North African environment. As Harris explains, though, it is not surprising when one understands the long-standing treatment of the Kurds in the region, who aspire to attain "development" on a level with the rest of Turkey, or when one understands the desire of the Turkish state to be perceived as "modern" by the West to facilitate goals such as entry into the European Union. These indigenous voices, marshaling their own environmental visions and understandings, offer a "stark contrast to general crisis narratives" of resource degradation with foundations in the Anglo-European environmental imaginary. For environmental plans to succeed, for "sustainable" development to be possible, Harris concludes, these voices must be heard and heeded.

Competing "hydro-imaginaries" of the Jordan River basin form the subject of Samer Alatout's chapter on the construction of the political

geography of the river and its lands in the 1950s, just after the creation of the state of Israel. Alatout shows very clearly how three different environmental imaginaries of the river basin—American, Arab, and Israeli—fostered three different narratives of hydrological reality with related prescriptive policies that in turn legitimized three very different political geographies of the region. The Americans employed a naturalizing and depoliticizing watershed perspective of the river and its basin that generated a cooperative planning approach in order to create a strong coalition of states able to rebuff anticipated Soviet incursions in the region, thus privileging U.S. foreign policy early in the cold war era. The plan of the Arab states drew on Arab nationalism and a kind of moral economy of water that gave importance to the sources of the Jordan waters, which, in turn, justified a pan-Arab politico-environmental approach excluding Israel. In its effort to define the Jordan River as a national resource for its development, the Israeli state employed an imaginary that was built on a highly efficient technonature in which the highest agricultural profit using the best technology justified who received water and, important since they were eager to pump river water to the Negev desert, where it was delivered. The details of the three different narratives analyzed by Alatout provide striking examples of how and why different and competing environmental imaginaries, hegemonic and local, can be extremely important in national and international politics, economics, development, and foreign relations.

The Palestinian environmental imaginary, as Alatout noted, was neglected in the 1950s water negotiations. This "indigenous" imaginary forms a primary subject of analysis, however, for Shaul Cohen in his chapter comparing the environmental imaginaries of Palestinians and Israelis in the context of nationalism(s) and environmentalism. He shares with Davis an interest in how visions of the environment, and how they have changed over time, inflect notions of social identity, national and otherwise. Cohen concludes that, for the moment, environmentalism is taking a backseat to other much more pressing issues for both the Israelis and Palestinians, such as security and national development. He provides, however, revealing details on the formulation and deployment of these two competing environmental imaginaries. As Cohen details, the Israelis have appropriated much of the Anglo-European environmental imaginary of a ruined landscape in need of restoration. In this case, the Arabs living under Ottoman administration, the Palestinians, are held responsible for degrading the environment, and therefore, it is argued, the Israelis are justified in owning the land so as to restore its "lost and rightful fertility." For the Palestinians, in contrast, the vision of the environment hinges more on how their former "Palestinian

Eden" has been lost and degraded by the creation of Israel, while claiming that they are better stewards of the land than are the Israelis. Both sides thus wear the "mantle of the victim," and both form notions of identity with claims of superior environmental knowledge and care. They share, then, what amount to "nationalist narratives of the environment" and the goal of environmental protection. Indeed, as Cohen explains, it was hoped that environmental protection would help forge Israeli/Palestinian cooperation in the optimistic time following the Oslo accords of 1993 that might help lead to peace. Instead, resources and energy on both sides have gone into other, more urgent, sectors, namely security, while environmental protection has been mostly deferred.

As these three chapters illustrate, alternative, often nationalist, environmental imaginaries of the Middle East and North Africa have indeed adapted and reconfigured, to a greater or lesser degree, the Anglo-European preconceptions of "environmental orientalism." Their development, like their deployment, is dependent on specific historical contexts that must be considered when analyzing them and their implications. It must also be taken into account, though, that a great deal of "scientific research" on the environment in the Middle East and North Africa has been conducted by Anglo-Europeans and others steeped in the Western environmental imaginary of a ruined landscape. The inaccurate narrative of degradation, alongside a valorization of technological fixes, has been incorporated into the educational and research systems of the postcolonial Middle East and North Africa to a significant degree, just as it has in the global North. As some of the chapters in this book show, many people born and raised in the region do subscribe to Anglo-European environmental imaginaries to varying degrees. What we can't yet answer, but hopefully future research will, is how many people in the region have internalized such environmental imaginaries, to what degree, and with what results.

The example of the United Arab Emirates (UAE) provides an interesting opportunity to think about some of the potential implications of these questions. If many people in the Middle East and North Africa held some sort of common identity as the inhabitants of a degraded or desertified environment, what would be the social, political, and economic ramifications? The UAE, a federation of seven sheikhdoms on the Gulf coast of the Saudi Arabian peninsula, formerly called the Trucial States, gained its independence in 1971 after 120 years of British protection. Since independence, primarily under the leadership of its first president, Sheikh Zayed bin Sultan Al Nayhan (1918–2004), the UAE has maintained an official campaign to "roll back the desert," which constitutes 80 percent of

its territory. It has, for example, planted more than one hundred million trees and created many parks and "green spaces."[25] In Abu Dhabi, the largest state, the rate of afforestation since 1980 is an astounding 26 percent annually.[26] In addition, UAE agriculture has been greatly expanded, and the sectors of agriculture, afforestation, and parks creation account for at least 80 percent of all water consumption.[27] This intensive effort to green the Emirates, however, has created problems of pollution from fertilizers and the overuse of groundwater—over 80 percent of total groundwater has already been withdrawn, much of it nonrenewable fossil aquifer water.[28] Desalinization is increasingly being relied on, a technology that is hugely energy-intensive and that emits large amounts of CO_2 and hot water detrimental to marine life. As of 2008, desalinated water provided most of the municipal (nonagricultural) water supplies, and treated sewage is increasingly being used to irrigate landscaping.[29]

In other sectors, such as real estate development, nature has also been "improved," as in the case of the human-generated archipelago of three hundred islands called "the world," which contains individual islands with expensive private villas, or the manipulations of the creek Khor Dubai to create a wildlife-filled lagoon with seven artificial islands in the middle of the planned "Business Bay" financial center.[30] The Palazzo Versace Hotel in Dubai has apparently built (or is planning to build) what is claimed to be the world's first refrigerated beach to complement their "chilled public lagoon pool."[31] In Dubai developers have also built the "largest indoor snow park in the world" with five ski runs and conifers apparently growing in the winter wonderland.[32] The resort has been open since December 2005, and in November 2009 they developed the technology to make it snow indoors during the day when people are actually skiing, thus bringing "a unique sight and environment to people who haven't been to the mountains of Europe."[33] The long-term outcome, though, may include the collapse of such mega-projects in Dubai and the rest of the UAE that appear unsustainable if current energy and water consumption trends continue.

Scholars who have studied these phenomena in the UAE tend to attribute the desire to "green" the emirates partly to the idea that within Islamic culture paradise is conceived as a green garden, partly to efforts to legitimize state power and boost nation-building, partly to elite desires to appear to be a "modern" state, and partly to government and commercial interests in attracting Western business and tourism.[34] What is less well accounted for, however, is the effect of Anglo-European environmental imaginaries of a degraded or marginal environment that can be made "better" and more "normal" with more vegetation, more water, and "cooling" of

Figure 0.2. Inside Ski Dubai, where it is kept cold enough to produce snow while outside temperatures soar above 100 degrees Fahrenheit. *Photo by Keirn OConnor, posted to Wikimedia Commons: http://commons.wikimedia.org/wiki/File:Ski_Dubai_Chair.jpg. Licensed for sharing, copying, and distributing.*

the torrid desert sands. The Anglo-European environment in conjunction with Western models of consumption and leisure are implicitly and explicitly held up as the ideal to attain. This was expressed well by one Emerati woman at Ski Dubai not long after it had opened. At the end of a ski run, with a big smile on her face, she proclaimed proudly, "Now it is Europe here too."[35] In this case, though, unlike many others, blame has not been attributed, in any of the official narratives, to a particular human group for ruining the environment. President Zayed said, for instance, that "a man without resources cannot change a country and so is not to be blamed for it. This was the case when our ancestors could not do anything."[36] In other parts of the Middle East and North Africa, however, as the chapters in this volume attest, this same imaginary has produced repressive policies, including forced sedentarization and relocation for groups deemed to be environmentally destructive, such as nomads. Critically interrogating the environmental imaginaries of the Middle East and North Africa, as this volume has begun to do, holds promise for future research that may be able to inform more environmentally sustainable and socially equitable development in the region.

Notes

1. See UNEP, *Global Deserts Outlook* (Nairobi, Kenya: United Nations Environment Programme, 2006), available at http://www.unep.org/geo/GDOutlook, last accessed 25 February 2010. The primary environmental problems in the Middle East are those of pollution and overusing limited water supplies, not of massive deforestation, overgrazing, and desertification. For more details, see Diana K. Davis, "The Middle East," in *Encyclopedia of World Environmental History,* ed. Shepard Krech, John R. McNeill, and Carolyn Merchant (New York: Routledge, 2003), 840–44; Mark A. Blumler, "Biogeography of Land-Use Impacts in the Near East," in *Nature's Geography: New Lessons for Conservation in Developing Countries,* ed. Karl Zimmerer and Kenneth Young (Madison: University of Wisconsin Press, 1998), 215–36; Avi Perevolotsky and No'am Seligman, "Role of Grazing in Mediterranean Rangeland Ecosystems," *BioScience* 48, no. 12 (1998): 1007–17; Linda Olsvig-Whittaker, Eliezer Frankenberg, Avi Perevolotsky, et al., "Grazing, Overgrazing and Conservation: Changing Concepts and Practices in the Negev Rangelands," *Sécheresse* 17, nos. 1 and 2 (2006): 195–99; Sharon E. Nicholson, "Desertification," in *Encyclopedia of World Environmental History,* ed. Shepard Krech, John R. McNeill, and Carolyn Merchant (New York: Routledge, 2003), 297–303; James F. Reynolds and D. Mark Stafford Smith, eds., *Global Desertification: Do Humans Cause Deserts?* (Berlin: Dahlem University Press, 2002); William M. Adams, *Green Development: Environment and Sustainability in a Developing World,* 3rd ed. (London: Routledge, 2009), chap. 8; Bruno Messerli and Matthias Winiger, "Climate, Environmental Change, and Resources of the African Mountains from the Mediterranean to the Equator," *Mountain Research and Development* 12, no. 4 (1992): 315–36; Diana K. Davis, "Scorched Earth: The Problematic Environmental History that Defines the Middle East," in *Is There a Middle East?,* ed. Michael E. Bonine, Abbas Amanat, and Michael Ezekiel Gasper (Stanford, Calif.: Stanford University Press, in press); and Diana K. Davis, *Resurrecting the Granary of Rome: Environmental History and French Colonial Expansion in North Africa* (Athens: Ohio University Press, 2007), 177–86.

2. In some cases, such irrigation systems also illustrate the follies of several states' efforts to gain power and prestige with environmentally inappropriate water-control projects throughout history. Providing adequate drainage, for example, has been a problem for thousands of years. See Edmund Burke III, "The Transformation of the Middle Eastern Environment, 1500 BCE–2000 CE," in *The Environment in World History,* ed. Edmund Burke III and Kenneth Pomeranz (Berkeley: University of California Press, 2009), 81–117.

3. Although the primary imperial powers in the Middle East and North Africa in the late nineteenth and early twentieth centuries were the British and the French, I use the term "Anglo-European" here to denote the broad array of Western countries with interests in the region and whose scholars, artists, and travelers made significant contributions to its representation. These countries

include, but are not limited to, France, Britain, the United States of America, Germany, and Italy.

4. Davis, *Resurrecting.*

5. Shaul E. Cohen, *The Politics of Planting: Jewish-Palestinian Competition for Control of Land in the Jerusalem Periphery* (Chicago: University of Chicago Press, 1993).

6. Louis-François Cassas (1756–1827) traveled widely in southern Europe and the Near East for his work as a draftsman, engraver, and archaeologist. From 1784 to 1787 he lived in the Ottoman empire and traveled to places we now know as Turkey, Syria, Egypt, Israel/Palestine, and Cyprus. See Joshua Drapkin, "Cassas, Louis-François," Grove Art Online: http://www.oxfordartonline.com, last accessed 20 December 2010. The ink and watercolor rendering of the *View of the Cedar Forests of Lebanon seen from the Tripoli Road* (1800–1801) seen on the cover of this book illustrates well the romantic view of the forests of the Middle East common among Europeans at that time. Despite the popularity of this romantic view, later in the nineteenth century, the deforestation narrative became dominant and remains so today. Contemporary research, however, has undermined this deforestation narrative and shown deforestation history in the region to be more complicated than previously thought, with some deforestation in some areas but not others. See discussion of the paleoecological data in Davis, "Scorched Earth," and also more recent research including Lara Hajar et al., "Environmental Changes in Lebanon during the Holocene: Man vs. Climate Impacts," *Journal of Arid Environments* 74, no. 7 (2010): 746–55, and F. H. Neumann et al., "Vegetation History and Climate Fluctuations on a Transect along the Dead Sea West Shore and Their Impact on Past Societies over the Last 3500 Years," *Journal of Arid Environments* 74, no. 4 (2010): 756–64. The cedars of Lebanon, in fact, may well be relicts from the last ice age rather than a species wholly destroyed by human improvidence as so often claimed. See Lara Hajar et al., "*Cedrus libani* (A. Rich) Distribution in Lebanon: Past, Present and Future," *Comptes Rendus Biologies* 333, no. 18 (2010): 622–30, esp. 626.

7. Davis, "Scorched Earth."

8. For example, the work of Jean-Paul Sartre and Jacques Lacan has not greatly influenced my use here of the term "imaginary." I draw more on the work of human geographers, particularly political ecologists, who have attempted to delineate how such social-environmental imaginaries are constructed and how they are used in a variety of settings. For more details, see Richard Peet and Michael Watts, eds., *Liberation Ecologies: Environment, Development, Social Movements* (New York: Routledge, 1996), 37, 267–69. For a case study, see J. Todd Nesbitt and Daniel Weiner, "Conflicting Environmental Imaginaries and the Politics of Nature in Central Appalachia," *Geoforum* 32, no. 3 (2001): 333–49.

9. What we understand as environmental history is most often the single environmental narrative (usually among several competing narratives) that has for one reason or another become dominant, or the most widely accepted

narrative, in a given social group. In certain cases, environmental imaginaries and the narratives and policies for development that accompany them become hegemonic. In such cases, the imaginaries and associated policies may be carried to other environments where their application is inappropriate and often harmful to the environment and the people living in it. See Peet and Watts, *Liberation,* 268. See also Kate B. Showers, *Imperial Gullies: Soil Erosion and Conservation in Lesotho* (Athens: Ohio University Press, 2005), for an excellent discussion of hegemonic narratives of soil erosion developed in the west and the problems created when they are transferred to a very different environment in southern Africa.

10. For an excellent discussion, see Jeremy Swift, "Desertification: Narratives, Winners and Losers," in *The Lie of the Land: Challenging Received Wisdom on the African Environment,* ed. Melissa Leach and Robin Mearns (London: International African Institute, 1996), 73–90. For a more sophisticated, theoretical discussion of these ideas, see Paul Robbins, *Political Ecology* (Oxford: Blackwell, 2004), esp. 107–26.

11. Peet and Watts, *Liberation,* 267.

12. Of course, later in the colonial period in places like India and Algeria many people of European heritage had been born in the "colony," but by that time the dominant environmental imaginary had been constructed and did not often change significantly.

13. For excellent discussions of representations of "foreign nature" and "tropicality," see David Arnold, *The Problem of Nature: Environment, Culture and European Expansion* (Oxford: Blackwell, 1996); Derek Gregory, "(Post) Colonialism and the Production of Nature," in *Social Nature: Theory, Practice, and Politics,* ed. Noel Castree and Bruce Braun (Malden, Mass.: Blackwell, 2001), 84–111; and Nancy Leys Stepan, *Picturing Tropical Nature* (Ithaca, N.Y.: Cornell University Press, 2001). See also Davis this volume.

14. The only other scholarly work to use the term "environmental orientalism" and to try to grapple with its implications is Suzana Sawyer and Arun Agrawal, "Environmental Orientalisms," *Cultural Critique* 45, no. 1 (2000): 71–108. This article does not, though, treat the Middle East or North Africa; it focuses on the Americas.

15. For details, see Burke, "Transformation."

16. For a detailed example from colonial North Africa related to Mediterranean basin "natural vegetation" maps, see Davis, *Resurrecting,* 131–64.

17. For a few recent examples, see Zachary Lockman, *Contending Visions of the Middle East: The History and Politics of Orientalism,* 2nd ed. (Cambridge: Cambridge University Press, 2009); Edmund Burke III and David Prochaska, eds. *Genealogies of Orientalism: History, Theory, Politics* (Lincoln: University of Nebraska Press, 2008); Derek Gregory, *The Colonial Present: Afghanistan, Palestine, Iraq* (Oxford: Blackwell, 2004); Alexander Macfie, *Orientalism* (London: Longman, 2002); and Thierry Hentsch, *Imagining the Middle East,* trans. Fred

Reed (Montreal: Black Rose Books, 1992). See also Edward Said, *Orientalism* (New York: Vintage Books, 1978).

18. See Timothy Mitchell, *Rule of Experts: Egypt, Techno-Politics, Modernity* (Berkeley: University of California Press, 2002).

19. Davis, *Resurrecting,* is another, more recent, book that does this.

20. Mitchell, *Rule,* 209. See "The Object of Development," 209–43, for details. The very real problems of the provision of social services to the large Egyptian population and the feelings of being "squeezed" by average Egyptians should not be ignored or downplayed. Mitchell's analysis, rather, shows that the priorities of the state, and its spending, tend to go elsewhere, using the crisis narrative for legitimation.

21. It should be noted that there were people with long experience in Egypt (and India) who tried to warn about the likely problems of perennial irrigation, like the engineer William Willcocks, but all too often their advice was not heeded.

22. Iraq and the surrounding region were variously referred to as Arabia, Mesopotamia, and sometimes the Holy Land during the early part of the twentieth century.

23. Unfortunately, such crude environmental determinism and associated racist worldviews are still with us and are of particular geopolitical importance in the Middle East. See Diana K. Davis, "Power, Knowledge and Environmental History in the Middle East," *International Journal of Middle East Studies* 42, no. 4 (2010): 657–59. For an interrogation of the state (space) of exception in the region today, see Gregory, *Colonial Present.*

24. It is worth noting that "indigenous" is not synonymous with "local," "vernacular," "peasant," or "subaltern." The term is used here in opposition to "Western" or "Anglo-European" to highlight potential differences in environmental imaginaries and narratives of those of Middle East and North African origin.

25. Chris Ryan and Morag Stewart, "Eco-Tourism and Luxury—The Case of Al Maha, Dubai," *Journal of Sustainable Tourism* 17, no. 3 (2009): 292.

26. Pernilla Ouis, "Engineering the Emirates: The Evolution of a New Environment," in *Engineering Earth: The Impacts of Megaengineering Projects,* ed. Stanley Brunn (Boston: Kluwer, 2011), 1409–23.

27. Pernilla Ouis, "'Greening the Emirates': The Modern Construction of Nature in the United Arab Emirates," *Cultural Geographies* 9, no. 3 (2002): 337.

28. Ouis, "Engineering."

29. See the UNFAO's AQUASTAT database for the UAE at http://www.fao.org/nr/water/aquastat/countries/untd_arab_em/index.stm, last accessed 10 September 2010. It is worth noting that water for agriculture is provided free of charge and that municipal supplies are subsidized by the state. Ibid.

30. Ouis, "Engineering." For a scathing commentary on development in Dubai and the "indentured Asian labour force that sustains them," see Mike Davis, "Fear and Money in Dubai," *New Left Review* 41 (September–October 2006): 47–68.

31. See the Palazzo Versace Gold Coast and Dubai Fact Sheet: http://www.tdireconsultancy.com/images/propertyimg/Palazzo%20Fact%20Sheet.pdf, last accessed 11 September 2010. See also Jonathan Leake, "Chill Out, You Beautiful People, the Versace Beach Is Refrigerated," *Sunday Times,* 14 December 2008, online at http://www.timesonline.co.uk/tol/news/environment/article5338099.ece, last accessed 4 November 2010.

32. For information, photos, and virtual tours, see http://www.skidubai.com/ski-dubai/resort, last accessed 2 March 2010. It is not clear whether the trees are real or ornamental.

33. See anonymous article "Let It Snow at Ski Dubai," Ski Dubai website, http://www.skidxb.com/news/news-2.aspx, last accessed 2 March 2010.

34. For examples, see Ryan and Stewart, "Eco-Tourism," and Ouis, "Greening."

35. Quote from a story on the BBC World News television broadcast, 16 February 2006.

36. Quote from the introductory material of the Zayed Bin Sultan Al Nahayan Charitable and Humanitarian Foundation, http://www.zayedfoundation.com/home.aspx, last accessed 26 February 2010.

Bibliography

Adams, William M. *Green Development: Environment and Sustainability in a Developing World.* 3rd ed. London: Routledge, 2009.

Arnold, David. *The Problem of Nature: Environment, Culture and European Expansion.* Oxford: Blackwell, 1996.

Blumler, Mark A. "Biogeography of Land-Use Impacts in the Near East." In *Nature's Geography: New Lessons for Conservation in Developing Countries,* edited by Karl Zimmerer and Kenneth Young, 215–36. Madison: University of Wisconsin Press, 1998.

Burke, Edmund, III. "The Transformation of the Middle Eastern Environment, 1500 BCE–2000 CE." In *The Environment in World History,* edited by Edmund Burke III and Kenneth Pomeranz, 81–117. Berkeley: University of California Press, 2009.

Burke, Edmund, III, and David Prochaska, eds. *Genealogies of Orientalism: History, Theory, Politics.* Lincoln: University of Nebraska Press, 2008.

Cohen, Shaul E. *The Politics of Planting: Jewish-Palestinian Competition for Control of Land in the Jerusalem Periphery.* Chicago: University of Chicago Press, 1993.

Davis, Diana K. "The Middle East." In *Encyclopedia of World Environmental History,* edited by Shepard Krech, John R. McNeill, and Carolyn Merchant, 840–44. New York: Routledge, 2003.

———. "Power, Knowledge and Environmental History in the Middle East." *International Journal of Middle East Studies* 42, no. 4 (2010): 657–59.

———. *Resurrecting the Granary of Rome: Environmental History and French Colonial Expansion in North Africa.* Athens: Ohio University Press, 2007.

———. "Scorched Earth: The Problematic Environmental History that Defines the Middle East." In *Is There a Middle East,* edited by Abbas Amanat, Michael Bonine, and Michael Gasper. Stanford: Stanford University Press, in press.

Davis, Mike. "Fear and Money in Dubai." *New Left Review* 41, no. Sept.–Oct. (2006): 47–68.

Gregory, Derek. *The Colonial Present: Afghanistan, Palestine, Iraq.* Oxford: Blackwell, 2004.

———. "(Post)Colonialism and the Production of Nature." In *Social Nature: Theory, Practice, and Politics,* edited by Noel Castree and Bruce Braun, 84–111. Malden, MA: Blackwell, 2001.

Hajar, Lara, Louis François, Ihab Jomaa, Michel Déqué, and Rachid Cheddadi. "*Cedrus libani* (A. Rich) Distribution in Lebanon: Past, Present and Future." *Comptes Rendus Biologies* 333, no. 18 (2010): 622–30.

Hajar, Lara, M. Haidar-Boustani, C. Khater, and Rachid Cheddadi. "Environmental Changes in Lebanon during the Holocene: Man vs. Climate Impacts." *Journal of Arid Environments* 74, no. 7 (2010): 746–55.

Hentsch, Thierry. *Imagining the Middle East.* Translated by Fred Reed. Montréal: Black Rose Books, 1992.

Leake, Jonathan. "Chill Out, You Beautiful People, the Versace Beach is Refrigerated." *Sunday Times*, 14 December 2008, Online: http://www.timesonline.co.uk/tol/news/environment/article5338099.ece.

Lockman, Zachary. *Contending Visions of the Middle East: The History and Politics of Orientalism.* 2nd ed. Cambridge: Cambridge University Press, 2009.

Macfie, Alexander. *Orientalism.* London: Longman, 2002.

Messerli, Bruno, and Matthias Winiger. "Climate, Environmental Change, and Resources of the African Mountains from the Mediterranean to the Equator." *Mountain Research and Development* 12, no. 4 (1992): 315–36.

Mitchell, Timothy. *Rule of Experts: Egypt, Techno-Politics, Modernity.* Berkeley: University of California Press, 2002.

Neumann, F. H., E. J. Kagan, S. A. G. Leroy, and U. Baruch. "Vegetation History and Climate Fluctuations on a Transect along the Dead Sea West Shore and their Impact on Past Societies over the Last 3500 Years." *Journal of Arid Environments* 74, no. 4 (2010): 756–64.

Nesbitt, J. Todd, and Daniel Weiner. "Conflicting Environmental Imaginaries and the Politics of Nature in Central Appalachia." *Geoforum* 32, no. 3 (2001): 333–49.

Nicholson, Sharon E. "Desertification." in *Encyclopedia of World Environmental History,* edited by Shepard Krech, John R. McNeill, and Carolyn Merchant, 297–303. New York: Routledge, 2003.

Ouis, Pernilla. "Engineering the Emirates: The Evolution of a New Environment." In *Engineering Earth: The Impacts of Megaengineering Projects,* edited by Stanley Brunn, 1409–23. Boston: Kluwer, 2011.

———. "'Greening the Emirates': The Modern Construction of Nature in the United Arab Emirates." *Cultural Geographies* 9, no. 3 (2002): 334–47.

Peet, Richard, and Michael Watts, eds. *Liberation Ecologies: Environment, Development, Social Movements.* New York: Routledge, 1996.

Perevolotsky, Avi, and No'am Seligman. "Role of Grazing in Mediterranean Rangeland Ecosystems." *BioScience* 48, no. 12 (1998): 1007–17.

Reynolds, James F., and D. Mark Stafford Smith, eds. *Global Desertification: Do Humans Cause Deserts?* Berlin: Dahlem University Press, 2002.

Robbins, Paul. *Political Ecology.* Oxford: Blackwell Publishing, 2004.

Ryan, Chris, and Morag Stewart. "Eco-Tourism and Luxury—The case of Al Maha, Dubai." *Journal of Sustainable Tourism* 17, no. 3 (2009): 287–301.

Said, Edward. *Orientalism.* New York: Vintage Books, 1978.

Sawyer, Suzana, and Arun Agrawal. "Environmental Orientalisms." *Cultural Critique* 45, no. (2000): 71–108.

Showers, Kate B. *Imperial Gullies: Soil Erosion and Conservation in Lesotho.* Athens: Ohio University Press, 2005.

Stepan, Nancy Leys. *Picturing Tropical Nature.* Ithaca, N.Y.: Cornell University Press, 2001.

Swift, Jeremy. "Desertification: Narratives, Winners & Losers." In *The Lie of the Land: Challenging Received Wisdom on the African Environment,* edited by Melissa Leach and Robin Mearns, 73–90. London: International African Institute, 1996.

UNEP. *Global Deserts Outlook.* Nairobi, Kenya: United Nations Environment Programme, 2006.

Chapter 1

"A Rebellion of Technology"

Development, Policing, and the British Arabian Imaginary

Priya Satia

WE HAVE inherited two contrasting images of Iraq. It is, on the one hand, the fertile crescent, the everlastingly prolific river valley, the very cradle of civilization; and, on the other, the archetypal wasteland, a barren desert of glaring sun and bleak horizons testifying at once to man's and nature's cruelty, a forbidding carapace concealing a curselike bounty of fossil fuel. Iraq is the quintessential environmental imaginary, its river-snaked deserts a symbol of the intimacy of human creativity and destruction. It is the consummate stage for history as morality play.

This dual image, in the minds of policymakers both local and distant, has crucially shaped Iraq's history, not least the fate of those rivers and deserts, up to the devastation wrought by the unholy alliance of today's unending war and drought. In this chapter, I want to explore just how Iraq became the site of such dramatic environmental imagining and how, in the early twentieth century, British fascination with nature's strange countenance there ironically produced a colonial state with a narrowly technical vision. After examining early British imaginings of "Arabia"[1] as a desert

utopia free from the ugliness of industrial life, I will show how the pressures of the Great War cast that imaginary in a more forbidding light—the barren Iraq. As technology's tarnished aura began to dazzle once again, British personnel in Iraq began to dream of a restored cradle of civilization—the prolific Iraq. When British rule officially began in 1919, these images of a desert utopia and regenerated Babylonia together inspired a new application of technology, also understood in a developmental vein: aerial control. In this twist of colonial fate, we find the "rebellion of technology" that Walter Benjamin saw as the essence of "imperialistic war": "Instead of draining rivers, society directs a human stream into a bed of trenches; instead of dropping seeds from airplanes, it drops incendiary bombs over cities."[2] In Iraq, a toxic brew of environmental imaginaries fueled technology's rebellion.

Behind those imaginaries were historically specific British cultural needs. It was not merely orientalism that shaped prewar British imaginings of a desert utopia but the particular cultural anxieties of the early twentieth century, when the trials of the South African War convinced many Britons that their bourgeois nation had strayed from the path of true glory. Edwardian Britons saw in Arabia a kind of extraterrestrial utopia happily impervious to modern technology and government. In the crucible of the next war, however, British cultural anxieties shifted radically and the indulgent prewar view morphed into a Faustian determination to remake the region, to reconnect this dreamland with the real world and make it a new kind of utopia, a resurrected Babylonia. The British empire strove to prove to the world that it could overrule the verdict of the Western front, that it could show that technology and empire were still constructive forces, benign and effective instruments of global improvement.

In their determination to retrieve this desert imaginary from the barbarous illegibility to which the Ottomans had supposedly condemned it, the British eventually took to the sky. Particularly after the Iraqi rebellion of 1920, the airplane became the linchpin of British efforts to at once develop and police Iraq—indeed, to collapse those two objectives into a single vision. The airplane seemed to them capable of subjecting what they conceived of as a flat, featureless terrain to panoptic surveillance, while at once restoring its ancient position as the commercial crossroads of the world. It was in Iraq that the bomber was first packaged as the vehicle of peace;[3] there, that political language took permanent refuge in euphemism, so that, as George Orwell noted, "Defenseless villages are bombarded from the air, the inhabitants driven out into the countryside, the cattle machine-gunned, the huts set on fire with incendiary bullets: this is called *pacification.*"[4]

In short, this story reveals the intimate connection between the history of the modern discourse and practices of development and surveillance, between the welfare state and the warfare state.[5] Security—economic, social, military, political—was the new coin of the imperial realm after World War I; and it was in the British mandate of Iraq that it was minted. The critical point here is that the technologies of development and security share common military-industrial and cultural roots. The modern notion of development did not begin, as is usually assumed, as a primarily post–World War II phenomenon in Africa, but earlier, in World War I–era Iraq where it underwrote fresh imperial conquest.[6] Staking out the land of two rivers as a material object was as much a development effort as a military one, emerging out of a joint effort to create a particular kind of battlefield and to rebuild an ancient granary that might redeem the technological undoing of civilization during that war. It was only in a fallen Eden that the British could articulate a vision of development that did not threaten the preservationist ethos that emerged from the wartime critique of technology as essentially destructive—even when that vision of "development" took the form of aerial policing. The collection of environmental imaginaries of Iraq meant that, there, development could be framed *as* preservation, as a restoration of the country's lost greatness.

Good Desert, Bad Technology

The story starts at the turn of the twentieth century, when Mosul, Basra, and Baghdad, three humble provinces of the Ottoman Empire, began to engage the attention of British imperial planners with a new intensity. Their traditional ally astride the land route to India, the Ottoman Empire, had begun to rumble from within as provincial movements for autonomy gathered strength. Even more troubling, Germany had begun to rival British influence inside the empire, particularly in the stretch from Baghdad to the Gulf. In this context, the British government began to plan for the possible demise of their long sick friend at the edge of Europe. And this meant knowing something about the vast stretch of Asia that they knew quaintly as "Arabia," and which acquired the new name "Middle East" in the course of the scholarly and diplomatic conversation they launched.

Long enchantment with the universally adored childhood tales from the *Arabian Nights* and the Bible radically shaped British efforts to increase knowledge about Middle Eastern politics. To the agents, officers, and scholars assigned with the task, Arabia inspired imaginative pleasure above all else; once they gained entry to the notoriously forbidden region, they could scarcely perceive a real place in real time.[7] As an environmental imaginary,

it was positively extraterrestrial, simply "uncanny," in the words of the naturalist and agent of the Directorate of Military Operations, Douglas Carruthers. He felt "suddenly transplanted to the . . . moon."[8] Just when occultists were making astral journeys to barren planets with winged guides, British travelers in Arabia found themselves beyond the pale of the planet they called home.[9] It was, to the great relief of those nostalgic for the days of pioneer-style Victorian exploration, "Still Unknown."[10] And, most important, essentially unknowable: its apparent featurelessness and natural phenomena such as mirage, dust storms, and shifting riverbeds and sand dunes made it so protean and deceptive to the British eye that Britons deemed it a cartographic impossibility.[11] Whatever its actual topographical reality, it remained for them something of a desert idyll, "very much the same everywhere."[12] The journalist Meredith Townsend recognized early on that most Englishmen, "filled . . . with the 'idea' of Arabia," tended to exaggerate the region's aridity.[13] As Peter Brent puts it, Arabia had become "neither more nor less than the desert. . . . The landscape had become everything."[14] British observers often thought of this separate desert universe as a space out of time as much as off the map, a place where they could "step straight from this modern age of bustle and chicanery into an era of elemental conditions . . . back into the pages of history to mediaeval times."[15]

On the whole, then, as an environment, Arabia was not, to British observers, empirically knowable or fully real. It was beyond "the longest arm of the law,"[16] a place so "infinitely mysterious . . . misty and unreal, incomprehensible . . . unfathomable," it could not yield facts but might restore faith.[17] If travel to this otherworldly place numbed the senses, it did allow one to "see, hear, feel, *outside the senses.*"[18] Indeed, this was its very attraction to the sort of officer and traveler who ventured there, finding in intelligence suitably patriotic cover for an escape from Western science, which had begun to produce an unsettling sense of human insignificance and inexorable cosmic entropy.[19] Arabia was a biblical land, a place for miraculous conviction, visionary prophets, and extremes of experience.[20] It was not, to them, the kind of place you could *discipline* in the way that European environments were increasingly being disciplined. And this was a good thing in the eyes of many Edwardians anxious about European decadence. Mark Sykes, then an honorary attaché at the embassy in Constantinople, praised the poetic Arabs for having no place in "civilised community"—defined contemptuously as "a community living in towns and in houses, suffering from infectious and contagious diseases, travelling in railway trains, able to read and write, possessing drinking shops, reading newspapers, surrounded by a hundred unnecessary luxuries, possessing

rich and poor, slums and palaces, and convinced that their state is the most edifying in the world."[21] It was a place that had escaped the affective and aesthetic sacrifices demanded by "progress": Townsend's influential *Asia and Europe* (1901) mused,

> Imagine a clan which prefers sand to mould, poverty to labour, solitary reflection to the busy hubbub of the mart, which will not earn enough to clothe itself, never invented so much as a lucifer match, and would consider newspaper-reading a disgraceful waste of time. Is it not horrible, that such a race should be? more horrible, that it should survive all others? most horrible of all, that it should produce, among other trifles, the Psalms and the Gospels, the Koran and the epic of Antar?[22]

Arabia was a place that not only did not need development but proved the bankruptcy of the very concept. Such notions, so dramatically shaped by the cultural anxieties of the Edwardian moment in which the British began to think intently about the region of modern-day Iraq, were quickly put to the test when Britain went to war against the Ottoman Empire in 1914.

Bad Desert, Good Technology

The Mesopotamia campaign began as a small, Government-of-India operation for the defense of Indian frontiers and British interests in the Persian Gulf.[23] However, once at the Gulf, Indian Army Force D began to rapidly advance north along the Tigris and Euphrates rivers in a characteristic effort to shore up what it already held. Baghdad quickly became its object, not least because its fabled past ensured that everyone at home had heard of it: "It was the Arabian nights."[24] For Britons, the campaign might have remained a picturesque subplot of the war's grand narrative but for a monumental failure in the midst of its surge upriver: A reverse at Ctesiphon forced the troops under General Charles Townshend to retreat to Kut, where they were besieged through the winter of 1915–16. After more than twenty thousand troops were lost in botched rescue attempts, nine thousand soldiers and thousands of noncombatants surrendered to the Turks in April 1916—"the British Army's greatest humiliation in the First World War."[25] The London War Office took control of the campaign, and Parliament launched an inquiry. In its report of June 1917, the Mesopotamia Commission censured the Indian army and government for their rash and ill-advised decision to advance on Baghdad and their inadequate provisioning of the force, particularly with respect to transport and medical

facilities.[26] Meanwhile the force, supplied by a reformed Indian government and led by a new commander, captured Baghdad in October 1917, an event hailed as "the most triumphant piece of strategy . . . since war started."[27] The troops continued north until they routed the Turks near Mosul in October 1918.

The Indian government's central role in this drama was the product of yet another environmental imaginary: the official perception of the land of two rivers as a geographical and political extension of the vast barren and tribal world of the North West Frontier.[28] Hence the Indian government's initially dilatory attitude toward transport and other provisions; frontier wars were by definition exercises in resourcefulness and economy. The notion was powerful enough to structure observation on the ground: the popular war correspondent Edmund Candler insisted, "The physical features of the country are familiar to our Indian troops," adding, "The villages resemble those of the Punjab or the North-West Frontier."[29] The Mesopotamia Commission's report belatedly enlightened the Indian authorities that the "climatic and military" conditions of the frontier and Mesopotamia were in fact "very different."[30]

To be sure, Mesopotamia's ties with India were also real: Administratively, the London and Indian governments overlapped in Mesopotamia.[31] The Persian Gulf was the "maritime frontier of the Indian Empire on the west," in Curzon's formulation.[32] Trade, Shia pilgrimage, and the Oudh Bequest (which channeled millions of rupees from India to the holy cities through British mediation) also ensured close ties between India and Iraq.[33] Moreover, during the war, the Raj reached into all aspects of military life in Mesopotamia, extending the fiction of Mesopotamian contiguity.[34] Summary incorporation of Mesopotamia into the Indian geographical imaginary did not require much of a conceptual leap.

This frontier vision strengthened the British view of Mesopotamia as a storybook land, an essentially unreal place. As the tragedy of the Western front unfolded, the Mesopotamian campaign promised the adventure and heroism of old-fashioned imperial adventure. "In exile from the world," they could fight "war as we used to imagine it"; Mesopotamia proved that "in the right place war even to-day can be a romance."[35] References to the Arabian Nights were on everyone's lips.[36] Mesopotamia promised "release" from the killing fields of France into fabled locales,[37] the "land of Holy Writ."[38] In letters and memoirs, soldiers described being "immensely moved by the close contact" with the Garden of Eden, Ezra's tomb, the Tower of Babel, Ur of the Chaldees, and other Old Testament sites.[39] They felt transported to a divine land where miraculous natural phenomena were daily occurrences. There,

a war correspondent wrote, "you live the story of the Bible, and you do not wonder in the least if it is true; you know it is."[40]

But the narrative of imperial adventure also triggered a subtle shifting of the image of an Arabian escape from technology. In the script of imperial conquest, Mesopotamia was cast in the role of a colonial heart of darkness: a "treeless waste of swamp and desert," "bleak emptiness to conquer," in Candler's unminced words.[41] A soldier put it pertly: "Adam and Eve might well have been excused in such a country." "Mesopotamia welcomes no man," he concluded.[42] Its freedom from the technological burdens of modern life, which had made it a refuge for Edwardians, now made it a no-man's-land in its very essence. Its mirages, sandstorms, and limitless horizons seemed to overwhelm technology's meager purchase on the country: Camels resembled "huge dissipated compasses" and floating ships, infantry became sheep, a motor car became a "few filmy lines," and wagons merely black dots.[43] Visual signaling was almost useless in "a fairy-land that danced and glimmered."[44] Soldiers struggled to observe their fire and discern its results.[45] The country remained unmapped for much of the war, largely because British surveyors found it impossible to map. Official intelligence summaries and private reports described rivers that shifted course daily, unnavigable marshes, and homes and villages whose locations were fleeting at best. Overnight, the ground could change from a land to a naval battlefield.[46] Mesopotamia was fundamentally remote, "far away from home, civilization, and comfort," in the rueful words of one naval captain.[47] Technology could only improve a land so far from England, so close to God, especially after the disaster at Kut, when "the conditions of France were repeated in Mesopotamia."[48] As the campaign went badly wrong, the more treacherous aspects of its biblical ecology gained ground in British representations. "We were in a country of excess, where the elements are never moderate or in humour," wrote Candler, "and there was something almost Biblical in the way the deities of this ancient land conspired to punish us . . . malice in the sky and soil . . . heat and drought; hunger and thirst and flies; damp and cold, fever and ague, flood, hurricane and rain." At the actual site of the Great Flood, these punishments seemed like a "Biblical visitation."[49]

"No-man's-land," the war's most evocative spatial symbol, represented technology's desolation of nature into the heart of darkness in France.[50] But technology maintained a positive image in Mesopotamia, which was depicted as a vast, autarkic wasteland, a fallen Eden disconnected from the world and its economy that the British had come to rescue from Ottoman tyranny. This environmental imaginary excused the military failures. The difficulty of using modern boats on the narrow and tortuous rivers north

of Al Qurnah was put down to the "idiosyncrasies of the Tigris" rather than design errors.[51] The Mesopotamia Commission Report echoed that while "a river is generally regarded as an admirable line of communication," the Tigris was in a class all its own. It was, in the memorable words of the commander-in-chief, "a very fickle lady who never sleeps two nights running in the same bed."[52] Basra, unlike Indian and Egyptian ports, was "only an anchorage . . . and beyond—a swamp." Basra Intelligence catalogued these "Physical and Climatic Difficulties of the Mesopotamian Theatre of War," explaining that, "in Iraq all military problems . . . are affected by climate and physical conditions to an extent rarely met with in any theatre of war." The Mesopotamia Commission's report likewise opened with a section on the challenges posed by the country's "Physical and Climatic Peculiarities."[53] The "bad desert" imaginary utterly dominated the postmortem on the military difficulties.

Military failure in Mesopotamia was considered the fault of Mesopotamia, not of British military prowess or modern equipment. Rather than lament that technology had paralyzed military activity, those involved in the Mesopotamian campaign lamented that military technology was either in too short supply or too sophisticated for their backward theater.[54] The Indian government had failed to provide wire-cutters, water-carts, rockets, mosquito nets, periscopes—the stuff of "war carried on under modern conditions."[55] In France, Candler noted, the wounded were whisked away in "smooth motor ambulance wagons" and provided "every saving device that Science can lend," while in Mesopotamia, "all was chaos." The campaign's mobility was a mark of backwardness, frustrating both efficient medical service as well as "the business of range-finding and registering, so easy in the stationary conditions on the Western front," however fruitless the ability in those conditions.[56] Modern warfare had come to mean the *mobile* supply of an army *immobilized* in a clearly demarcated battlefield. With hindsight, Mesopotamia's early mobility appeared a travesty of modern warfare rather than an escape from it; the country, and consequently the campaign, was simply not developed enough.

The force's successes after Kut strengthened faith in technology as enabling rather than paralyzing. The trench warfare following the siege was the campaign's rite of passage to a modernity no longer diminished by its colonial quality; after the War Office takeover and the Indian government's technological transfers, "bloody, remorseless trench fighting . . . was a thing of the past." Armed with all the paraphernalia of modern warfare, they now waged "war as it should be waged, with the spirit of movement in it, the new scenes a background to the drama of battle."[57] At Ctesiphon, a naval

officer mused on the great armies and historic figures that "had passed this way before the coming of men in khaki, with their aeroplanes and wireless."[58] Defying the wisdom from France, that "modern warfare" had rendered long advances impossible without "a certain calculated sacrifice which is generally prohibitive," here the British were modern and yet highly mobile.[59] The ad hoc solutions to the practical problems posed by Mesopotamian topography marked the campaign as uniquely inventive, similarly heralding a warfare of the future: "All the five arms of the Force—the Navy, Cavalry, Infantry, Artillery, and Flying Corps—were working together in a way that was new in war," enthused Candler.[60] The campaign suggested that trench warfare was not the last stop of modern warfare, that stalemate could end, and that war might still be a productive enterprise. If technology's dark side was exposed in France, a new aspect of it was unveiled in Iraq: in the hands of "experts," it could resurrect a military campaign and, at once, a devastated civilization. Thus, during the war, British imaginings about Mesopotamia as a romantic, otherworldly, autarkic land underwrote a positive image of technology at a moment when technology's image was cracking elsewhere. Those imaginings staked out Mesopotamia as the consummate site of modern technological development.

Reclaiming the Cradle of Civilization

And so, India sent iron, steel, and timber for the construction of river embankments, wharves, docks, bridges; also dredgers for canal construction; railroad and electrical plant; telegraphic and telephonic equipment; engines; vehicles; boats; machinery; labor; and experts. Basra became a "a hive of industry."[61] In August 1917, days before his famous declaration that the British government was in favor of responsible government in India, Edwin Montagu described to Parliament how Indian resources "were gradually changing the appearance of the country and eradicating the blight of Turkish misrule."[62]

With the constructive vision of technology erected in the environmental imaginary of a wasteland, the campaign soon claimed redemption of the cradle of civilization as its true calling. The abject failure at Kut had raised the stakes of the campaign. Mesopotamia was represented less as a miserable backwater, a mere "side-show," and more as the place where war could find meaning, less an escape from industrialism than the proving ground for industry and empire. By "reclaim[ing] a wilderness" and "rebuild[ing] a civilization after many years of anarchy and desolation" for "a new country and a new people, "the force determined to give meaning to the sacrifices of British soldiers, explained one officer. Theirs was the

blessed task of revitalizing not just any civilization but one of "mysterious and divine" origins. Gertrude Bell, then a powerful force in the British civil administration, confessed feeling "rather like the Creator."[63] In a terrain hallowed by its past and by the sacrifice of British lives, Britons constructed a new imperial identity that could even explain away the, retrospectively charming, missteps that had landed them in such a Great War in the first place. A sailor wrote in 1917:

> We Britons spend our lives in making blunders, and give our lives to retrieve them. But . . . the dawn has come, and with it the confident assurance that in this new burden of Empire—the task of restoring Mesopotamia to her former prosperity—the generations to come will gain inspiration from the long chronicle of heroic deeds which make up the story of her deliverance. The lives of Britain's sons have not been sacrificed in vain.

The British were the bearers of a new "dawn" for Iraqis—and for Britons.[64]

Whereas the Indian government saw the region as an indivisible part of its domain, many in Britain saw it as a fallen frontier of the West; indeed many Arabists, who had long romanticized Arabs as a naturally free and democratic people akin to the "freeborn Englishman," fought bitterly against the Indianization of the nascent colony.[65] Rather than "unchanging," wartime representations stressed that this bit of the East had metamorphosed from a locus of secular power and worldly riches tightly bound to Hellenistic-Christian culture to a "sordid relic." "When European Christendom looks to-day at the desolation of these lands," wrote the historian Edwyn Bevan, "it is looking at a lost piece of itself." Technology promised to precipitously reconnect Mesopotamia with the rest of the world after Kut revealed how dangerous its utopic autarky was. Restoring Mesopotamia's position along the great artery of commercial traffic was a development goal born of military failure. The object of the campaign was nothing less than a "regenerated Babylonia, in which the ancient streams reflect once more mighty structures of men and gardens like Paradise, and in the streets of whose cities traffickers from all the earth once more meet." Man would once again be "master of the great waters," prophesied Bevan, and the wanton destruction wrought by feckless and savage imperial tyrants since the Mongol invasion brought to an end. The British would resurrect an older imperial tradition of *improvement,* the tradition of the Persians, Seleucids, Parthians, Sassanides, and the Saracen caliphs.[66] British personnel dreamt of Mesopotamia's restored position

as a supplier of cotton and wheat.[67] The conviction that they could not possibly worsen such a derelict land made the steady grind of imperial administration especially reassuring.[68] These were by no means idiosyncratic or private views; in Parliament, Robert Cecil, assistant secretary of state for foreign affairs, earnestly praised the "very satisfactory progress . . . being made . . . in redeeming [Mesopotamia] from the state of ruin into which it had fallen under the Turks."[69]

In short, developing Mesopotamia was hailed as an act of restoration, not transformation, a refitting of the ancient land with modern technology that would enable it to resume its traditional role in a modern world. And so we witness the birth of yet another environmental imaginary, a vision of a restored cradle of civilization. Technologies such as dams, aircraft, and roads would not only produce battlefields from Mesopotamia's disordered landscape but also produce Mesopotamia itself as a geographical and political object. They would both improve the fabulous and terrible country and bring it within the realm of the knowable, within the pale of the economy that development sought to make.

The project of reclaiming Mesopotamia and rejoining it to a prosperous West seemed to some to invest the entire war with meaning. In an essay much circulated among the troops, Bell described how, once again, the ancient markets of Iraq would thrive and would "add immeasurably to the wealth of a universe wasted by war," besides providing new fields for European industry.[70] "Nowhere, in the war-shattered universe," she held, "can we begin more speedily to make good the immense losses sustained by humanity." Candler too found it "comforting to think that the war which had let loose destruction in Europe was bringing new life to Mesopotamia."[71] And in this global salvation lay the salvation of the British Empire. An officer confided to a fellow combatant,

> All this show of ours out here is . . . a beginning of something that will materialise a hundred or two hundred or a thousand years hence. We are the great irrigating nation and that's why we're here now. . . . We'll fix this land up . . . and move the wheels of a new humanity. Pray God, yes—a new humanity! One that doesn't stuff itself silly with whisky and beef and beer and die of apoplexy and high explosives.[72]

Mesopotamia proved that the British could still *civilize,* if they had lost civilization itself. General A. G. Wauchope saw in the advance on Baghdad the apotheosis of the British imperial dream:

> Watching these columns of Englishmen and Highlanders, of Hindus, Gurkhas and bearded Sikhs advancing [within sight of the Median Wall], one felt the conviction that this struggle was being fought for the sake of principles more lofty, for ends more permanent, for aims less fugitive, for issues of higher service to the cause of humanity, than those that had animated the innumerable and bloody conflicts of the past.[73]

The cultural resonances of the cradle of civilization and the land of the Bible infused his imperial ideal with even greater moral fire. The fall of Baghdad in 1917 inspired wonder and hope: it was no ordinary city, but, many pointed out, a place "famous for the men and armies that had crossed it."[74] By crossing it, the British too had achieved epoch-making imperial greatness; far from bankrupt, the empire had finally arrived.

To Britons in Mesopotamia, their efforts provided a fitting rebuke to the growing number of anti-imperialists at home and abroad. "British seed" would make the desert "bloom as the rose," an officer announced to those "fluent decriers of their own country" who called empire "a thing of pitiless blood and iron."[75] As in Egypt and Punjab, explained Mark Sykes in an official note, here too the British imperial ideal was "not . . . conquest but . . . redemption."[76] The imaginary of a developed Mesopotamia offered proof of the strangely selfless and attractive nature of British imperialism: "Truly we are a remarkable people," Bell mused. "We save from destruction remnants of oppressed nations, laboriously and expensively giving them sanitary accommodation, teaching their children, respecting their faiths," yet remain cursed by subjects, who, nevertheless, "when left to themselves . . . flock to our standards. . . . It's the sort of thing that happens under the British flag—don't ask us why." British occupation was thus exempt from the sins ordinarily associated with such a regime. Montagu pointedly remarked in Parliament, "It was interesting to compare British occupation in Mesopotamia with German occupation in Belgium. (Hear, hear.)" Surveying "the sound and colour of the reviving world," Bell felt she was "really part of Mesopotamia and not part of an army of occupation."[77] Moreover, the prodigious Indian effort for Mesopotamia proved, according to an exultant parliamentary paper, that even Indians knew Britain ruled them for their good, and not for exploitation.[78]

This mix of heady rhetoric and mundane technocratic activity was typical of a moment in the formation of British imperial identity when, as Robert Colls has put it, "The traditions of an ancient realm were held aloft to signify Englishness to the world, while behind all that it was understood

that modern men ran the business."[79] The return of a king to the Baghdad of Haroun was one thing, "but," one sentimental American noted a decade after the war,

> in the shadows beside the dais stand men in green-brown uniforms—blue-eyed men of a tribe that [earlier] had no standing in Arabia. . . . Angles they call these men, and they are not like the other conquerors who flowed into Iraq with sword and torch in the days whose record may be read in the ash piles along the Tigris. They are children—fussy children—eternally worried over the removal of rubbish, the "improvement" of roads and bridges that for hundreds of years served our ancestors . . . the disciplining of the police force and what not.

Efficient as these imperial professionals were, they were not Orwell's famously lamented dull "clerks" of the 1920s, the "well-meaning, overcivilized men, in dark suits," prefiguring his nightmare vision of bureaucracy. The sentimental American concluded, "The flying carpet of the Cairo air-mail has come to rest in the landing field beyond Hinaidi and a sergeant is inspecting its hot motors. . . . Who can say that romance is dead in a spot such as this . . . ?"[80] These new joiners were rather "young men of spirit," looking for adventure in the postwar world, inspired by the recuperative vision of technology in the Middle East. So warmly did the light of hope glow in Mesopotamia in the dimly lit postwar world that soldiers at a loose end sought transfer there to find an assuredly constructive role. James Mann, an aspiring political officer (who would be killed in the rebellion later that year), reasoned with his mother, "If one takes the Civil Service, or the Bar, or Literature, or Politics, or even the Labour movement, what can one do that is constructive? Here on the other hand I am constructing the whole time."[81]

Thus, British officials, journalists, and politicians claimed a special status for the new colony—it was *the* site for imperial expiation through technocratic development. Of course, there were early enthusiasts of development in other parts of the empire as well, but Iraq's special relevance as a site for articulation of this vision of empire was guaranteed by representations of it as the fallen cradle of civilization where development would hail a new age of miracles. In India, by contrast, signs of wartime modernization were most often viewed as a violation of the colony's romantic aura, betokening social, cultural, and political chaos.[82] The idea of developing Iraq did not raise the preservationist fears of rapid economic change

upsetting indigenous social and political order that otherwise tended to undermine the fulfillment of visionary wartime plans for colonial development.[83] Although in practice development focused on activities, such as the settlement of tribes and provision of transportation, that would make Iraq a supplier of raw materials for industrial Britain rather than an industrial nation in its own right, there even this limited notion of colonial development implied something grander. There, the ability to produce primary goods was not the mark of backwardness but of the country's resurgence as a glorious imperial entrepôt. Proponents of Iraq's development claimed more exalted goals than Joseph Chamberlain had at the turn of the century when as colonial secretary he had unsuccessfully pushed investment of state funds for colonial development.

Certainly, the very existence of British-Indian technical expertise in transforming nature was predicated on past exercises in imperial development, such as the river projects in India and Egypt.[84] Indeed, like Egypt, Mesopotamia was constituted as a geographical and political entity centered on the basic developmental "problem" of an ancient river system ringed by desert and a backward population.[85] But the wartime development of Iraq differed from these antecedents—and from, say, state management of poverty in Britain—in the totality of its ambition, in its positing of an entire proto-nation-state as its object.[86] It was in wartime Mesopotamia that the "technoscience" Timothy Mitchell has described first evolved on a national scale to "improve the defects of nature, to transform peasant agriculture, to repair the ills of society, and to fix the economy."[87]

Much of the early hope was ultimately disappointed after the war. In 1919, Britain demanded that the new League of Nations award them the mandate to rule Iraq as compensation for British sacrifices for the country's development,[88] reconfiguring a war of conquest as an international development effort. (The geographical sleight-of-hand that blurred Mesopotamia into India helped justify [even disguise] this imperial addition as yet another frontier annexation shoring up the territory already held.) The Iraqis, of course, never bought the mandate scheme; to them, it was a flimsy semantic disguise for colonial rule, and from 1920 to 1932 when they finally joined the League as a nominally independent nation, they continually forced the British to rename and reframe their relationship. Meanwhile, many of the developmental projects the British undertook (mainly, after all, to serve the needs of the army) were quickly abandoned, partly because of financial stringency and partly because, after the Iraqi rebellion of 1920, air control more or less hijacked the development discourse—anticolonial rebellion triggering the "rebellion of technology."[89]

Watching the Cradle Rock

The airplane ultimately emerged as the joint focus of developmental and disciplinary discourses about Iraq in this period. Aircraft were ubiquitous in Mesopotamia after Kut. As a new technology with their own otherworldly mystique, they became intimately associated with the Mesopotamian site of exception. As a 1921 cabinet paper put it, "Great as was the development of air power in the war on the western front, it was mainly concerned with aerial action against enemy aircraft and co-operation with other arms. . . . In more distant theatres, however, such as Palestine, Mesopotamia and East Africa the war has proved that the air has capabilities of its own."[90] Why did this most quintessentially modern technology strike British officials as so peculiarly suited to the romantic wasteland of Mesopotamia?

British Arabists were fervent proponents of airpower. To them, it, like the innovative deceptions and irregular warfare it supported, were particularly suited to a Middle Eastern environment. Attracted to Arabia as a medieval utopia, they saw in the airplane a means of restoring chivalry and vitality to modern warfare.[91] Airpower also seemed to offer a means of overcoming the information problems posed by an unmapped desert; a bird's-eye view promised vision beyond the mirages, sandstorms, and horizonlessness that bedeviled two-dimensional observation. Picturing Mesopotamia as a uniformly featureless terrain, a sort of giant aerial field,

Figure 1.1. *Flying Over the Desert at Sunset, Mesopotamia.* 1919. By Sydney W. Carline. The romance of desert flight as envisioned by a popular artist just after World War I. *Reproduced with the permission of the Imperial War Museum, London, UK.*

political officers pined, "Oh for some aeroplanes. If there was a country in the whole world eminently suited to these machines this one is: Flat flat as your hand."[92] Since "in Mesopotamian battles, little can be trusted that is seen," explained General Wauchope, "commanders are bound to rely on reports by aeroplane, messengers, and telephones."[93] Aerial photography reached its highest development in Mesopotamia, as did air signalling.[94]

Underlying this burgeoning new military science was a sense that aircraft were existentially suited to this region. Over the austere terrain of the biblical deserts flight seemed to reach new heights of sublimity and even divinity.[95] British Arabists perceived a basic congruence between the liberty of action of the aircraft and the desert warrior, both operating in empty, unmapped, magical spaces. T. E. Lawrence, who had searched in Bedouin warfare for an alternative to the anonymous mass slaughter of the Western front, prophesied, "What the Arabs did yesterday the Air Forces may do to-morrow. And in the same way—yet more swiftly." Both could move beyond mere concentration of force and replace it with "an intangibly ubiquitous distribution of force—pressing everywhere yet assailable nowhere."[96] He joined the Royal Air Force in 1922, seeing in it the same sort of literary potential as the desert sublime.[97] His views were echoed by other Arabists and in the RAF.[98] "There appears to be a sort of natural fellow-feeling between these nomad Arabs and the Air Force," remarked Robert Brooke-Popham, the RAF's director of research. "Perhaps both feel that they are at times in conflict with the vast elemental forces of nature."[99] The "desert with all its mysterious fascination" had "an unreal atmospheric quality comparable with the sky. Perhaps," pondered a wing-commander, "this is why people call it 'The Blue.'"[100]

Within this discourse about aircraft as a nomad technology ideally suited to rendering a nomad terrain legible lurked an awareness of their uses in controlling that terrain.[101] By annihilating the distances that otherwise kept nomadic tribes beyond the reach of any state's scrutiny, aircraft seemed to possess "enormous political possibilities": When the Mesopotamian tribes the British liberated "[got] out of hand and require[d] a lesson," officials found that "an aerial raid with bombs and machine guns often has an overwhelming and sometimes an instantaneous effect in inducing submission."[102] Such experiments revealed to the Cabinet aircraft's uses in the "attack and dispersal of considerable bodies of ground troops."[103]

Those lessons were put to use immediately after the war in 1919 when aircraft and bombs were employed against unrest all over the Eastern empire. But notions of Iraq's peculiar suitability made it the only colony where airpower became a permanent instrument of imperial administration and

policing.[104] The RAF officially took over in October 1922, although it had become the dominant military force from the rebellion. It commanded eight squadrons of fighters and light bombers, four armored-car units, and several thousand Iraq Levies. Army garrisons were gradually reduced to protect only the nine RAF bases equipped with wireless telegraphy. The short range of most available aircraft made advanced landing grounds and emergency fuel and bomb dumps crucial to the system. The RAF patrolled the country from a network of bases, bombarding villages and tribes as needed to put down unrest and subversive activities. Air action was used against Turkish and Najdi raiders into Iraq (at a time when frontiers were a work in progress) as well as Kurdish and Arab rebellions within Iraq proper.[105] It was in Iraq that the British first practiced, if never perfected, the technology of bombardment; there that they first attempted to fully theorize the value of airpower as an independent arm of the military. Reasons of cost and topography mattered, of course, but it was cultural imaginings about the place of airpower in the cradle of civilization that made Iraq, rather than any other place, the first site of "air control."[106]

British Arabists, unsurprisingly, were enthusiastic supporters of the scheme. Lawrence dated his conviction that "aircraft could rule the desert" to the war.[107] He, Arnold Wilson (the civil commissioner in Iraq), and other Arabist officials were important influences on Winston Churchill, postwar secretary of war and air. In 1921, as colonial secretary, Churchill inducted Lawrence and his colleagues from the Middle Eastern wars, Reader Bullard, Hubert Young, and Richard Meinertzhagen, into a new Middle East Department, where they deemed Mesopotamia peculiarly suitable for air operations, better than Europe, for aesthetic as much as topographical reasons—the power of the environmental imaginary: Mesopotamia's presumed flatness promised many landing grounds, little cover to insurgents, and the possibility of "radiating" British power throughout the country from a handful of fittingly spartan bases, while the reality of its varied and protean topography, when acknowledged, was held to offer ideal training for the RAF, exposing it to every sort of terrain—mountains in Kurdistan, marshes in the south, riverain territory in between, and so forth. Air action was deemed *in*appropriate for police action in the densely populated urban environments of Britain, Ireland, and even Palestine.[108] Lawrence insisted, "The system is *not* capable of universal application."[109]

But the imaginary was, after all, imaginary: Despite the promise of omniscience, the regime was plagued by reports of pilot disorientation, visibility problems, and instances "of quite inexplicable failures to identify such objects as columns of Armoured cars . . . and even whole sections of

bedouin tribes on the move."[110] Aircraft often bombed the wrong targets.[111] Insurgents found cover in watercourses, hillocks, and other features of the allegedly "featureless" landscape.[112] Even assessing the effect of bombing operations was "largely a matter of guesswork."[113]

However, in an infamously deceptive land, all this inaccuracy, indeed information itself, was deemed of little consequence: Arnold Wilson explained that complaints about RAF observation failures were necessarily exaggerated, as was all information in the country, not least because the mirage prevented anyone from judging the accuracy of a pilot on high. Second, in the end, the accuracy issue was moot, since aircraft were meant to be everywhere at once, "conveying a silent warning." This "*moral effect*" of patrolling aircraft "which can drop Bombs whenever necessary would effectually check disturbances."[114] Even destruction of "property" did not matter as it might in an advanced civilization, given the austerity of tribal existence, a condition imagined to extend to all Iraqis.[115] Richard Meinertzhagen, wartime intelligence chief now at the Colonial Office, assured his colleagues in Iraq, "Bombs dropped on men in the open seldom have much effect beyond fright," and advised dropping the matter of results as aerial observation of casualties was "always misleading."[116]

Moreover, the experts assured, desert inhabitants in a biblical land expected harsh existence; they could tolerate random acts of violence in a way that others could not.[117] In 1932, at the disarmament conference in Geneva, the British High Commissioner in Iraq assured his colleagues that unlike the outrages inevitably committed by ground troops, "bombing from the air is regarded almost as an act of God."[118] Lawrence likewise strove to explain the "impersonally fateful" nature of air bombing from an Arab's point of view: "It is not punishment, but a misfortune from heaven striking the community."[119] The perception of environmental excesses that had inspired an effort to join this biblical land to the modern world in the name of civilization simultaneously underwrote the notion that it could tolerate a level of brutality no other place could, also in the name of civilization.

This cavalier attitude rendered casualties entirely, well, casual: "If the Civil Commissioner is going on to Mosul," read a General Headquarters telegram to Wilson, "will he be so kind as to drop a bomb on Batas"—the sort of kindness he apparently never objected to.[120] So, despite innumerable reported errors, the air control experiment was pronounced entirely successful in "this kind of turbulent country."[121] From Iraq, air control spread to Palestine, Transjordan, and elsewhere, albeit in modified version.[122] In its Iraqi cocoon, the RAF was safe from criticism of its accuracy, protected by

the British imaginary of a place so otherworldly it was beyond empirical verification. Current historiography has remained captive to this imaginary, claiming air control actually *worked* in desert regions as opposed to India, East Africa, and so on, because deserts have "clearly defined, completely visible targets and little possibility of cover."[123]

The misperception proved horrifically costly in Iraqi lives. "Recalcitrant" tribes, which included not only those attacking British communications and personnel but also those refusing to pay taxes, were bombed into submission. Entire villages were bombed for "general recalcitrance" (refusal to submit to government), harboring wanted rebel leaders, and evading the high rates of British taxation.[124] In Iraq, the RAF found validation as a service and experience that it applied more notoriously in World War II. In short, the environmental imaginary of land so barren that bombardment could not possibly worsen it was crucial to the history of bombardment as a military strategy. The vindication of air control grew out of racism but also long-circulating imaginings of a land miraculously exempt from the this-worldliness that constrained human activity in other parts of the world. Arabia's legendary otherworldliness made it fit to bear the unearthly destruction wreaked by bombers. The environmental imaginary of Iraq was the foundation of Britons' understanding of the moral world of Arabia as radically distinct from their own. The "most extraordinary and romantic" world of the RAF in Iraq compounded the sense of being in a place apart, only tenuously linked to "civilisation." The regime's miraculous wireless infrastructure and rumors of Lawrence's presence only fed the Arabian mystique.[125] Thus, Arabia offered the air staff a means of selling the new warfare to the public by exhibiting it in a fabulous land, a world apart, where the destruction wrought by bombardment was submerged in the desert sublime.[126] British officials may have found Arabia extraterrestrial, but it was their technological innovations that ultimately produced the surreal world of random bombardment in which Iraqis were condemned to live, literally removing Iraq beyond the reach of secular and humanitarian law.

Crucially, this policing regime was understood in the same developmental vein as the wartime infrastructure projects. Air control, its defenders argued, facilitated greater understanding between administrators and Iraqis by enabling British personnel to roam without fear (and, incidentally, gather the intelligence that would guide future bombardments).[127] Moreover, airpower's supreme role in the country had made Baghdad the "Clapham Junction of the air," at last fulfilling that noble dream of remaking an ancient cosmopolitan crossroads.[128] Far from disruptive, aircraft

were a fitting gesture to the agelessness of the Orient, enthused the *Times,* recalling the sorcerers who, once upon a time, had made Sindbad the Sailor turn airman on the back of a great bird. Motorcars too were like "snorting land monsters which rush across the deserts." "Naturally, the inhabitants take these things as a matter of course," assured the paper, for "the age of miracles has happily returned, and we may see strange Arabian nights in the coming years."[129] Clio would return as Baghdad's lingering aura of mystery was "violated by the whirring wheels . . . of trains, of cars, of aeroplanes."[130] Aircraft also exercised a more traditional civilizing effect by demonstrating the advanced state of British civilization. The famous furrow ploughed across the desert to guide pilots to Baghdad was lauded as a feat of British ingenuity. The "romance" of desert flight derived from the "demonstration of the power of modern inventions which are able to conquer vast open spaces of the world, as yet little known to civilised man"—technology remained the handmaiden of progress.[131] The air afforded a lofty view from which to observe the effects of the new loftier imperialism, to witness, in the words of the *Illustrated London News,* "adoring Asia kindle and hugely bloom."[132] (It also fittingly revealed the otherwise invisible traces left by their ancient imperial forebears.) Aerial surveillance and disciplining fit neatly into this vision of liberal empire in the sky. Flying over the desert, Hubert Young of the Foreign Office, "felt that a new era had dawned, and that with the goodwill of His Majesty's Government and the powerful help of the Royal Air Force the Arabs of Iraq would undoubtedly win their independence at last."[133]

If these arguments did not convince, others claimed a dose of repression would pave the way to gentler improvements. A wing commander argued irresistibly, "The cheaper the form of control the more money for roads and development and the sooner it will be no longer necessary to use armed forces to do with explosives what should be done by policemen and sticks."[134] Although some, like George Buchanan, wartime head of river conservation, considered the abandonment of wartime projects "a tragedy of heroism, suffering, wasted lives, and wasted effort,"[135] others saw in air control the salvation of the wartime hopes for a global payoff from the Mesopotamian adventure. The development of the geographical center of the world's most ancient and most modern traffic routes would "safeguard humanity from famines, wars, and social revolution," insisted postwar stalwarts.[136] The press and politicians continued to urge development of Iraqi resources on the premise that "a country once so rich may surely be made rich again by modern methods," stubbornly anticipating "some recompense for the great sacrifices we made in the Great War."[137]

Thus, the Middle East, "the Land of the RAF," became as essential to British preeminence in airpower as airpower was to Britain's ability to control the Middle East. After the so-called independence of Iraq in 1932, the RAF kept key elements of Iraqi defense—aircraft, wireless, armored cars, intelligence sources—out of the hands of the nascent Iraqi army.[138] For them, Iraq's independence was decidedly "more apparent than real."[139] Squadrons were reduced gradually, but the country was reoccupied during the Second World War, and the RAF departed only in 1958.

IN BRITAIN, the early-twentieth-century imaginary of Mesopotamia inspired an understanding of colonialism as a vehicle for technocratic developmentalism. But encompassed within that concept were modern tactics of violent surveillance. Benjamin might have diagnosed a rebellion of technology, but this story suggests development and policing are two sides of the same technocratic coin, the joint ends of the modern welfare/warfare state, sharing common military-industrial roots. Frantz Fanon noted this more sinister face of development long ago: "Raftways across the bush, the draining of swamps and a native population which is non-existent politically and economically are in fact one and the same thing."[140] This is not, of course, to suggest that development offers no desirable end but to highlight its more sinister political uses in the hands, particularly, of autocratic states and global institutions. Environmental imaginaries have been critical to the creation of what Edmund Burke called "geographical morality," the notion that the peculiarities of place license departure from universalist principles of law and humanity for exceptional technologies and rules. The environmental imaginary is what has made Iraq an apparently permanent state of exception in official minds.

In the British episode lie the roots of the Iraqi state's long fetishizing of technological solutions to political and social problems, including Saddam Hussein's simultaneously developmentalist and punitive obsessions with draining the southern marshes. Restoration of those wetlands has remained a low priority for the post-2003 occupying governments of Iraq, who, like the British earlier, have diverted technocratic expertise to a truly Orwellian pacification effort, unleashing an environmental emergency with dire consequences for human and wildlife in the region. There is, on the one hand, the detritus of war—unexploded mines and shells, many laced with carcinogenic radioactive chemicals—and, on the other, the sewage, oil, and other hazardous waste released into the air, soil, and water by bombed-out infrastructure and industrial plants. Hanging over the whole disaster is a desperate lack of water.[141]

As Timothy Mitchell has noted, the supposed abject aridity, mineral wealth, and lack of natural national cohesion of the entire region of the Middle East pose the canonical developmental problem.[142] Certainly, our environmental imaginary of Iraq in particular has evolved. We have, for instance, broken the old habit of blurring it into India—although President Bush nearly resurrected it with his certainty that Afghanistan's Al Qaeda was in Iraq—and oil figures more prominently than grain in images of Iraq's share of global wealth. But the image of an autarkic, hermetic desert that forbids modern ideas and goods continues to tempt those dreaming of a regenerated Babylonia, and the years of sanctions and occupation in pursuit of that imperial folly have helped make the image of autarky something of a reality. With drones overhead, Iraq is once again the site of a first in the history of aerial technology. Like the British army decades ago, today's American occupiers speak a development language that constitutes itself as a neutral form of knowledge standing apart from its object, Iraq, despite their own role in producing its current devastation.

Notes

1. British experts stressed the impossibility of ever defining the borders of "Arabia" precisely but used the term generally to refer to the desert and Arab-speaking areas of the Ottoman Empire.

2. Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction" (1937), repr. in *Illuminations,* ed. Hannah Arendt, trans. Harry Zohn (New York: Schocken Books, 1968), 242.

3. See David Edgerton, *Warfare State: 1920–1970* (Cambridge: Cambridge University Press, 2006), 284, 312, 317.

4. George Orwell, "Politics and the English Language," 1946, http://www.george-orwell.org/Politics_and_the_English_Language/0.html (accessed 15 September 2010).

5. By "development," I mean a statist effort to use public investment for the avowed purpose of raising a colony into a modern nation-state (as opposed to the more general Victorian notion of empire as a means of upliftment).

6. See Frederick Cooper, "Modernizing Bureaucrats, Backward Africans, and the Development Concept," in *International Development and the Social Sciences: Essays on the History and Politics of Knowledge*, edited by Frederick Cooper and Randall Packard (Berkeley: University of California Press, 1997), 70; Frederick Cooper and Randall Packard, Introduction to *International Development and the Social Sciences,* 7; Stephen Constantine, *The Making of British Colonial Development Policy, 1914–1940* (London: F. Cass, 1984), 303–4; Paul B. Rich, *Race and Empire in British Politics* (Cambridge: Cambridge University Press, 1986), 145; Timothy Mitchell, *Rule of Experts: Egypt, Techno-Politics, Modernity* (Berkeley: University of California Press, 2002), 82–83.

7. See for instance Francis R. Maunsell, "The Hejaz Railway," *Geographical Journal* 32, no. 6 (1908): 570. For more on this and later citations in this paragraph, see my book, *Spies in Arabia: The Great War and the Cultural Foundations of Britain's Covert Empire in the Middle East* (New York: Oxford University Press, 2008), chaps. 2, 3.

8. Douglas Carruthers, *Arabian Adventure: To the Great Nafud in Quest of the Oryx* (London: H. F. and G. Witherby, 1935), 68.

9. Alex Owen, *The Place of Enchantment: British Occultism and the Culture of the Modern* (Chicago: University of Chicago Press, 2004), esp. 159.

10. David G. Hogarth, "Problems in Exploration I. Western Asia," *Geographical Journal* 32, no. 6 (1908): 549–50.

11. See, for instance, John G. Lorimer, ed., *Gazetteer of the Persian Gulf, Oman, and Central Arabia,* vol. 2, *Geographical and Statistical* (Calcutta: Government Press, 1908), 199, 759n, 767, IOR: L/PS/20/C91/4, British Library (BL); Gertrude Bell, *Amurath to Amurath* (New York: Dutton, 1911), 167, 201; Mark Sykes, *The Caliph's Last Heritage* (London: Macmillan, 1915), 436; Carruthers, *Arabian Adventure,* 120.

12. David Hogarth, comment on lecture by Capt. S. S. Butler, "Baghdad to Damascus via El Jauf, Northern Arabia," 22 February 1909, *Geographical Journal* 33, no. 5 (1909): 533.

13. Meredith Townsend, *Asia and Europe: Studies Presenting the Conclusions Formed by the Author in a Long Life Devoted to the Subject of the Relations between Asia and Europe,* 2nd ed. (New York: G. P. Putnam's, 1904), 161.

14. Peter Brent, *Far Arabia: Explorers of the Myth* (London: Weidenfeld and Nicolson, 1977), 145.

15. G. Wyman Bury [Abdullah Mansur, pseud.], *The Land of Uz* (London: Macmillan, 1911), xxi. The Romantics had also looked to Eastern philosophy and culture for alternatives to Occidental materialism, but Edwardians were more interested in escape than imitation and combined escape with intelligence work. Nor did they recoil from the "real" Orient as the Romantics had. See, for instance, David Fraser, *The Short Cut to India: The Record of a Journey along the Route of the Baghdad Railway* (Edinburgh: W. Blackwood, 1909), 234. On the Romantics, see Edward Said, *Orientalism* (1978; New York: Vintage, 1979), 100–115.

16. Carruthers, *Arabian Adventure,* 42.

17. Bell, 1928, quoted in *Gertrude Bell: The Arabian Diaries, 1913–1914,* ed. Rosemary O'Brien (Syracuse, N.Y.: Syracuse University Press, 2000), 9–10.

18. Louisa Jebb, *By Desert Ways to Baghdad* (Boston: Dana, Estes, 1909), 264–65. Emphasis added.

19. See, for instance, Bell, *Amurath to Amurath,* 193. On Edwardian anxieties about science, see Samuel Hynes, *The Edwardian Turn of Mind* (Princeton: Princeton University Press, 1968), 134–38; Stephen Kern, *The Culture of Time and Space: 1880–1918* (Cambridge, Mass.: Harvard University Press, 1983), 38; Owen, *Place of Enchantment.*

20. See, for instance, Sykes, *Caliph's Last Heritage,* 57. See also Satia, *Spies in Arabia,* chaps. 2, 3.

21. Mark Sykes, *Dar-ul-Islam: A Record of a Journey through Ten of the Asiatic Provinces of Turkey* (London: Bickers and Son, 1904), 12n.

22. Townsend, *Asia and Europe,* 307.

23. See John S. Galbraith, "No Man's Child: The Campaign in Mesopotamia, 1914–1916," *International History Review* 6, no. 3 (1984): 358–85; Stuart A. Cohen, "The Genesis of the British Campaign in Mesopotamia, 1914," *Middle Eastern Studies* 12, no. 2 (1976): 119–32; Paul K. Davis, *Ends and Means: The British Mesopotamian Campaign and Commission* (London: Associated University Presses, 1994); Briton Cooper Busch, *Britain, India, and the Arabs, 1914–1921* (Berkeley: University of California Press, 1977), chap. 1.

24. Lieutenant Colonel L. A. Lynden-Bell, interview with Peter Liddle, TS, October 1977, GS 0993 (Lynden-Bell Papers), Liddle Collection, Leeds University Library, Leeds (hereafter Liddle). For further discussion, see Satia, *Spies in Arabia,* chap. 5.

25. Richard Popplewell, "British Intelligence in Mesopotamia: 1914–1916," *Intelligence and National Security* 5, no. 2 (1990): 139.

26. Davis, *Ends and Means.*

27. J. T. Parfit, *Serbia to Kût: An Account of the War in the Bible Lands* (London: Hunter and Longhurst, 1917), 45.

28. On this, see my "Developing Iraq: Britain, India and the Redemption of Empire and Technology in the First World War," *Past and Present* 197, no. 1 (2007): 244–45.

29. Edmund Candler, *The Long Road to Baghdad,* 2 vols. (New York: Houghton Mifflin, 1919), 1:34.

30. Beauchamp Duff, quoted in *Mesopotamia Commission Report (MCR),* Parliamentary Papers, 1917–18 (Cd. 8610), xvi, 37; *MCR,* 13, 105.

31. See Satia, *Spies in Arabia,* chap. 1.

32. Quoted in V. H. Rothwell, "Mesopotamia in British War Aims, 1914–1918," *Historical Journal* 13, no. 2 (1970): 277.

33. Sugata Bose, *A Hundred Horizons: The Indian Ocean in the Age of Global Empire* (Cambridge, Mass.: Harvard University Press, 2006); Juan Cole, *Roots of North Indian Shī'ism in Iran and Iraq: Religion and State in Awadh, 1722–1859* (Berkeley: University of California Press, 1988); Meir Litvak, "Money, Religion, and Politics: The Oudh Bequest in Najaf and Karbala, 1850–1903," *International Journal of Middle Eastern Studies* 32, no. 1 (2001): 1–21 and "A Failed Manipulation: The British, the Oudh Bequest and the Shi'i Ulamaof Najaf and Karbala," *British Journal of Middle Eastern Studies* 27, no. 1 (2000): 69–89.

34. See Satia, "Developing Iraq," 246–47. This article explains how the geographical imaginary played into a real expectation that Iraq would be ruled from India and describes the impact of the Indian administrative heritage.

35. Arthur Tillotson Clark, *To Bagdad with the British* (New York: D. Appleton, 1918), 2, 47–49.

36. See, for instance, Martin Swayne, *In Mesopotamia* (London: Hodder and Stoughton, 1917), 102; Wilfrid Nunn, *Tigris Gunboats: A Narrative of the Royal Navy's Co-operation with the Military Forces in Mesopotamia from the Beginning of the War to the Capture of Baghdad (1914–17)* (London: A. Melrose, 1932), 153.

37. See, for instance, F. S. G. Barnett to his mother, 10 March 1917, GS 0089 (Barnett Papers), file 2, Liddle; Army YMCA of India, "The Land of Two Rivers," found in various editions among the papers of many soldiers in Mesopotamia in the Liddle archive (30,000 copies had been printed in the first edition alone).

38. Candler, *Long Road,* 2:198.

39. Edward Kinch, autobiographical notes covering early life in England and career in Iraq, 1896–1959, MS, n.d., 27, Kinch Papers, file 1/2, Middle East Centre Archive, St Antony's College, Oxford (hereafter MEC). For the countless other examples, see Satia, "Developing Iraq," 218n23.

40. Eleanor Franklin Egan, *The War in the Cradle of the World: Mesopotamia* (New York: Harper, 1918), 76.

41. Candler, *Long Road,* 1:33, 176.

42. Swayne, *In Mesopotamia,* 17, 51.

43. Candler, *Long Road,* 1:47, 111–20. For other examples, see Satia, "Developing Iraq," 220n30.

44. Wilkinson D. Bird, *A Chapter of Misfortunes: The Battles of Ctesiphon and of the Dujailah in Mesopotamia, with a Summary of the Events Which Preceded Them* (London: Forster Groom, 1923), 58.

45. See, among numerous examples, Eric V. R. Bellers to his mother, 14 August 1917, MES 007 (Bellers Papers), Liddle.

46. See Satia, *Spies in Arabia,* chap. 3.

47. Nunn, *Tigris Gunboats,* 10.

48. Candler, *Long Road,* 1:164.

49. Ibid., 1:72; Edmund Candler, "A Truce in the Desert," *Times,* 22 March 1916, 7.

50. See Paul Fussell, *The Great War and Modern Memory* (London: Oxford University Press, 1975); Eric J. Leed, *No Man's Land: Combat and Identity in World War I* (Cambridge: Cambridge University Press, 1979).

51. Lake, quoted in *MCR,* 47, 53. See also Davis, *Ends and Means,* 189–94; *MCR,* 52–54.

52. Vincent-Bingley Report, *MCR,* Appendix 1, 145; Charles Munro, qtd. in George Buchanan, *The Tragedy of Mesopotamia* (London: W. Blackwood, 1938), 129.

53. Buchanan, *Tragedy of Mesopotamia,* 45; "The Physical and Climatic Difficulties of the Mesopotamian Theatre of War," 14 August 1916, Leith-Ross Papers, National Army Museum; *MCR,* 9.

54. On the view on the Western front that technology was paralyzing, see Leed, *No Man's Land,* 122–23.

55. *MCR,* 37–38.

56. Candler, *Long Road,* 1:47, 56.

57. Ibid., 2:223–24.

58. Nunn, *Tigris Gunboats,* 168.

59. Candler, *Long Road,* 1:51, 132.

60. Ibid., 2:80.

61. Geoffrey Collins, second in command at Basra, October 1917, quoted in Davis, *Ends and Means,* 230.

62. Montagu, House of Commons debate, 6 August 1918, reported in *Times,* 7 August 1918, 8.

63. Henry Birch Reynardson, *Mesopotamia, 1914–15: Extracts from a Regimental Officer's Diary* (London: Andrew Melrose, 1919), 272; Bell to her family, 5 December 1918, quoted in Elizabeth Burgoyne, *Gertrude Bell: From Her Personal Papers,* 2 vols. (London: E. Benn, 1958–61), 2:101.

64. Conrad Cato, *The Navy in Mesopotamia: 1914 to 1917* (London: Constable, 1917), 106, 117.

65. See Satia, *Spies in Arabia,* chap. 2.

66. Edwyn Bevan, *The Land of the Two Rivers* (London: E. Arnold, 1918), 10–11, 112, 124–26. For further examples, see Satia, "Developing Iraq," 226n51.

67. See, for instance, Reynardson, *Mesopotamia,* 50.

68. [Gertrude Bell], *The Arab of Mesopotamia* (Basra: Government Press, 1917), 117; Candler, *Long Road,* 2:185, 188.

69. Robert Cecil, House of Commons debate, 23 July 1918, quoted in Arnold T. Wilson, *Mesopotamia, 1917–1920: A Clash of Loyalties* (London: Oxford University Press, 1931), 99.

70. [Gertrude Bell], "Turkish Provinces: The Anatolian Coast," in *Arab of Mesopotamia,* 201–2.

71. Bell to Florence Bell, 15 November 1917, in *The Letters of Gertrude Bell,* ed. Lady Bell, 2 vols. (London: E. Benn, 1927), ii, 431–32; Candler, *Long Road,* 2:183. See also "A New Mesopotamia," *Guardian,* 13 December 1919, 2; Clark, *To Bagdad with the British,* 244.

72. Quoted in Swayne, *In Mesopotamia,* 166.

73. Candler, *Long Road,* 2:i, 176; A. G. Wauchope, "The Battle That Won Samarrah," chap. 8 of *With a Highland Regiment in Mesopotamia, 1916–1917, by One of Its Officers* (Bombay: Times Press, 1918), 85.

74. Clark, *To Bagdad with the British,* 239.

75. Reynardson, *Mesopotamia,* 172.

76. "Political Note on our Advance in Irak," 17 September 1917, Sykes Papers, box 2, file 7, document 78, MEC.

77. Bell to Hugh Bell, 10 November 1922, in *Letters of Gertrude Bell,* 2:657; Montagu, speech in House of Commons debate on Indian reform, 6 August

1918, reported in *Times,* 7 August 1918, 8; Bell to Hugh and Florence Bell, 31 January 1918, in *Letters of Gertrude Bell,* 2:441–44.

78. *East India (Military),* P.P., 1914–16 (Cd. 7624), 49:15.

79. Robert Colls, "The Constitution of the English," *History Workshop Journal* 46 (1998): 105.

80. Robert J. Casey, *Baghdad and Points East* (London: Hutchinson, 1928), vii–viii; George Orwell, "The Lion and the Unicorn: Socialism and the English Genius" (1941), pt. 1, http://www.k-1.com/Orwell/index.cgi/work/essays /lionunicorn.html; Casey, *Baghdad and Points,* 98.

81. Mann to his mother, 25 January 1920, in *An Administrator in the Making: James Saumarez Mann, 1893–1920,* ed. by his father [James Saumarez Mann Sr.] (London: Vintage, 1921), 206. See also John Glubb, *The Story of the Arab Legion* (London: Hodder and Stoughton, 1948), 19.

82. Meeta Sinha, "'Where Electricity Dispels the Illusion [of the *Arabian Nights*]': The British and the Modern in Interwar India," paper presented at the Pacific Coast Conference of British Studies, Irvine, 2006.

83. See Constantine, *Making of British Colonial Development Policy,* 2, 11, 16–25, 31, 47, 52, 54, 56, 287, 294, 299; Cooper, "Modernizing Bureaucrats," 65, 67, 70.

84. On the imperial reach of Indian engineering, see David Gilmartin, "Imperial Rivers: Irrigation and British Visions of Empire," in *Decentring Empire: Britain, India and the Transcolonial World,* ed. Durba Ghosh and Dane Kennedy (New Delhi: Orient Longman, 2006), 76–103.

85. Mitchell, *Rule of Experts,* 210.

86. On the nineteenth-century roots of development, see Michael Cowen and Robert Shenton, "The Invention of Development," in *Power of Development,* ed. Jonathan Crush (London: Routledge, 1995), 29, and Michael Watts, "'A New Deal in Emotions': Theory and Practice and the Crisis of Development," in *Power of Development,* ed. Jonathan Crush (London: Routledge, 1995), 48, 51. On the centrality of colonialism to development, see Mitchell, *Rule of Experts,* esp. 4–6, 82–83; Christopher Hamlin, *Public Health and Social Justice in the Age of Chadwick: Britain, 1800–1854* (Cambridge: Cambridge University Press, 1998), 264–66.

87. Mitchell, *Rule of Experts,* 15.

88. See Busch, *Britain, India, and the Arabs,* 158, 190, 275.

89. For a contemporary account of the rebellion, see Aylmer Haldane, *The Insurrection in Mesopotamia* (London: W. Blackwood, 1922). This fairly large conventional war lasted several months and involved much of the country, including Kurdistan. Roughly a thousand British and Indian troops were killed, and another thousand were wounded. Roughly ten thousand Iraqis were killed.

90. Air Staff, "On the Power of the Air Force and the Application of that Power to Hold and Police Mesopotamia," March 1920, AIR 1/426/15/260/3, The National Archives (TNA).

91. For further details on this point and others in this section, see Satia, *Spies in Arabia,* chaps. 4, 5, 7.

92. Dickson to Gwenlian Greene, 7 February 1915, 1st booklet, Papers of Harold R. P. Dickson, MEC.

93. *With a Highland Regiment in Mesopotamia,* 70–71 (in chap. 7, whose author is identified as Andrew G. Wauchope) (repr. from *Blackwood's Magazine*, 1917).

94. Satia, *Spies in Arabia,* chap. 4.

95. See, for instance, Young to Shuckburgh, 23 October 1921, CO 730/16, TNA.

96. Quoted in Basil Henry Liddell Hart, *T. E. Lawrence: In Arabia and After* (London: Jonathan Cape, 1934), 438.

97. See, for instance, Lawrence to Trenchard, 5 January 1922, quoted in Philip Knightley and Colin Simpson, *The Secret Lives of Lawrence of Arabia* (London: Nelson, 1969), 166.

98. See for instance Philby, chap. 7, in *Mesopotage,* MS, [1930s], Papers of H. St. John B. Philby, MEC; Bell, quoted in John Laffin, *Swifter Than Eagles: The Biography of Marshal of the Royal Air Force Sir John Maitland Salmond* (Edinburgh: W. Blackwood, 1964), 176.

99. Robert Brooke-Popham, "Aeroplanes in Tropical Countries," lecture, in proceedings of meeting of the Royal Aeronautical Society on 6 October 1921, *Aeronautical Journal* 25 (1 March 1922), Brooke-Popham Papers, Liddell Hart Center for Military Archives, King's College, London (LHCMA). He reiterated this thought after serving as air officer commanding Iraq from 1928 to 1930 and as high commissioner and commander-in-chief in 1929. See notes for a lecture at Downside on 7 February 1932, Brooke-Popham Papers, file 2/3. LHCMA.

100. Wing-Commander R. M. Hill, lecture at Royal Aeronautical Society, quoted in *The Royal Air Force,* by F. V. Monk and H. T. Winter (London: Blackie and Son, 1938), 47.

101. On state projects to render "nomad" terrain legible, see also Mitchell, *Rule of Experts,* 78, 230; James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven, Conn.: Yale University Press, 1998); Jonathan Crush, Introduction to *Power of Development,* ed. Jonathan Crush (London: Routledge, 1995), 2, 15.

102. Salmond, RFC, HQ, Egypt, to CGS, GHQ EEF, 12 November 1916, WO 158/626, PRO; Capt. William Leith-Ross, "The Tactical Side of I(a)," n.d., 8–9, ARC 1983–12–69–10, Leith-Ross Papers, National Army Museum, London.

103. Air Staff, "On the Power of the Air Force," AIR 1/426/15/260/3, PRO.

104. On uses of airpower in 1919, see David Omissi, *Air Power and Colonial Control: The Royal Air Force, 1919–1939* (Manchester: Manchester University Press, 1990), 11; Sven Lindqvist, *A History of Bombing,* trans. Linda Haverty Rugg (2000; trans., New York: W. W. Norton, 2001), 42–43.

105. In a single two-day operation, a squadron might drop several dozen tons of bombs and thousands of incendiaries and fire thousands of rounds of

small arms ammunition. The last British battalion left in 1927; the last Indian, in 1928. Also see Jafna Cox, "A Splendid Training Ground: The Importance to the Royal Air Force of Its Role in Iraq, 1919–32," *Journal of Imperial and Commonwealth History* 13, no. 2 (1985): 157–84.

106. On other arguments for air control, see Satia, *Spies in Arabia,* 10, 240. For more detail on points made throughout this section, see *Spies in Arabia,* chap. 7.

107. Lawrence to Herbert Baker, quoted in John Mack, *A Prince of Our Disorder: The Life of T. E. Lawrence* (Boston: Little, Brown, 1976), 320; Lawrence to Liddell Hart, 1933, in *The Letters of T. E. Lawrence,* ed. David Garnett (London: Jonathan Cape, 1938), 323. See also C. S. Jarvis, *Arab Command: The Biography of Lieutenant-Colonel F. G. Peake Pasha* (London: Hutchinson, 1946), 83.

108. See, for instance, memorandum on the scheme for the employment of the forces of the crown in Mesopotamia, n.d., AIR 20/526, TNA; CAS, Scheme for the Control of Mesopotamia by the Royal Air Force, 12 March[?] 1921, AIR 5/476, TNA; Wilson, *Mesopotamia, 1917–1920,* 238–39; Air Staff, "On the Power of the Air Force," AIR 1/426/15/260/3, TNA; "Notes on the Value of the Air Route between Cairo and Baghdad for Strategic and Other Purposes," n.d., AIR 9/14, TNA; Churchill, memo, May 1, 1920, quoted in Martin Gilbert, *Winston S. Churchill,* vol. 4: *1916–1922, The Stricken World* (Boston: Heinemann, 1975), 481; Winston Churchill, "Policy and Finance in Mesopotamia, 1922–23," 4 August 1921, in *Winston S. Churchill, Companion, Part 3: Documents April 1921–November 1922,* ed. Martin Gilbert (London: Heinemann, 1977), 1576–81.

109. Lawrence to Liddell Hart, 1933, in *Letters of T. E. Lawrence,* 323.

110. Major General T. Fraser to WO, 3 August 1922, AIR 5/202, TNA. See also John Glubb, *The Changing Scenes of Life: An Autobiography* (London: Quartet, 1983), 60; John Glubb, *Arabian Adventures: Ten Years of Joyful Service* (London: Cassell, 1978), 135; Report regarding the value of aeroplanes as main weapon of an Administration in the maintenance of law and order . . . , n.d., AIR 23/800, TNA; SSO Basrah, Memo on operations against outlaws of Albu Khalifah, to GHQ, 19 July 1921, CO 730/4, TNA.

111. See, for instance, 18th Division, Intelligence report, 15 June 1921, AIR 1/432/15/260/23 (A-B), TNA.

112. See, for instance, A. Haldane, report to WO, 25 November 1920, Cabinet Paper, February 1921, AIR 5/1253, TNA, and Air Staff comments parallel to Haldane's report, January 1921.

113. E. A. S., minute, 30 March 1922, on a phone conversation with Wilson, CO 730/20, TNA.

114. Arnold T. Wilson, note on use of Air Force in Mesopotamia, February 26, 1921, AIR 5/476, TNA; Office of no. 30 Squadron, Baghdad, Report on RAF operations in South Persia, to GOC, 8 April 1919, AIR 20/521, TNA.

115. See Air Vice-Marshal Arthur Gould Lee, *Fly Past: Highlights from a Flyer's Life* (London: Jarrolds, 1974), 53; Laffin, *Swifter Than Eagles,* 181.

116. Meinertzhagen, minute, 29 March 1922, on Cox to S/S CO, 25 March 1922, CO 730/20, TNA.

117. See, for instance, Glubb, note on the Southern Desert Force, [c. 1930s], Glubb Papers, box I, file: Iraq S. Desert (1), 1927–1928, MEC.

118. F. H. Humphreys to Sir John Simon, 15 December 1932, AIR 8/94, TNA.

119. [Lawrence, June 1930], quoted in Basil Henry Liddell Hart, *The British Way in Warfare* (New York: Macmillan, 1933), 159.

120. Reported in Bell to her father, December 12, 1920, quoted in Burgoyne, *Gertrude Bell,* 2:190.

121. Salmond, Air Ministry, Iraq Command Report for Oct.October 1922—— Apr.April 1924, Nov.November 1924, AIR 5/1253, TNA.

122. See Churchill to Shuckburgh, 11 January 1922, in *Churchill,* 4/3:1723; Omissi, *Air Power,* 28–29, 39–59, 44–45; Charles Townshend, *Britain's Civil Wars: Counterinsurgency in the Twentieth Century* (Boston: Faber and Faber, 1986), 99–113; David Killingray, "'A Swift Agent of Government': Air Power in British Colonial Africa, 1916–1939," *Journal of African History* 25, no. 4 (1984): 429–44.

123. Lindqvist, *History of Bombing,* 68; Malcolm Smith, *British Air Strategy between the Wars* (Oxford: Clarendon, 1984), 29.

124. See commanding officer of 17th Division, report, 26 June 1921, AIR 1/432/15/260/23 (A-B), TNA; Thomas, memorandum, to PO Muntafik, 13 July 1920, E11758/2719/44/1920, FO 371/5230, TNA; [Hall?], minute, 11 August 1921, on Cox to CO, 30 June 1921, 39645, CO 730/2, TNA; Cox to Churchill, 6 October 1921, on operations at Batas and elsewhere, CO 730/7, TNA; Omissi, *Air Power,* 174. See also Charles Townshend, "Civilization and 'Frightfulness': Air Control in the Middle East between the Wars," in *Warfare, Diplomacy and Politics: Essays in Honour of A. J. P. Taylor,* ed. Chris Wrigley (London: Hamish Hamilton, 1986), 153. For an exemplary episode, see Peter Sluglett, *The British in Iraq: 1914–1932* (London: Ithaca, 1976), 262–70. It is difficult to say how many Iraqis were killed in these operations, from the bombs themselves as well as through starvation and the burning and machine-gunning of villages, but a hundred or more casualties was certainly not unusual in a single operation.

125. Brooke-Popham, "Aeroplanes in Tropical Countries"; Claude H. Keith, 3 December 1927, in *Flying Years,* Aviation Book Club ed. (London: J. Hamilton, 1937), 137–38; Young to Shuckburgh, 23 October 1921, CO 730/16, TNA; Herbert Baker chap. in *T. E. Lawrence, by His Friends,* ed. Arnold W. Lawrence (London: J. Cape, 1937), 206.

126. Air Staff, 1921, quoted in Townshend, "Civilization and 'Frightfulness,'" 159.

127. Bullard and Meinertzhagen, minutes, September 1921, on Cox, telegram, 24 September 1921, 48218, CO 730/5, TNA; CAS to Sir R. Maconachie, British Legation, Kabul, 10 January 1933, AIR 9/12, TNA.

128. See, for instance, "Britain and Mesopotamia," *Daily Telegraph,* 10 May 1921; Richard Coke, *The Arab's Place in the Sun* (London: Thornton Butterworth, 1929), 11–12.

129. "A Traveller in Mesopotamia," review of *By Tigris and Euphrates,* by E. S. Stevens, *Times,* 14 December 1923, 8.

130. "Four Centuries of History," review of *Four Centuries of Modern Iraq,* by Stephen Hembley Longrigg, *Times,* 22 January 1926, 17.

131. Ilay Ferrier, "The Trans-Desert Route—Baghdad—Jerusalem," 1926, Papers by Ilay Ferrier, IOR, Eur Mss C874, India Office Records, British Library, London.

132. *Illustrated London News,* 1 February 1919, 149 (the quotation alludes to Stephen Phillips's poem *Marpessa,* first published in 1897).

133. Hubert Young, *The Independent Arab* (London: J. Murray, 1933), 338.

134. R. H. Peck, "Aircraft in Small Wars," *Journal of the Royal United Services Institute* 73, no. 491 (1928): 541.

135. Buchanan, *Tragedy of Mesopotamia,* 182, 261, 276–78, 284–85.

136. Captain R. J. Wilkinson, "The Geographical Importance of Iraq," *Journal of the Royal United Services Institute* 61, no. 468 (1922): 665.

137. "Progress in Mesopotamia," editorial, *Times,* 17 March 1923, 11; Amery at the Leeds Luncheon Club, quoted in "The Middle East," *Times,* 9 February 1926, 11.

138. See Satia, *Spies in Arabia,* chaps. 7, 8.

139. Air Policy with Regard to Iraq, n.d. [October–November 1929], AIR 2/830, TNA.

140. Frantz Fanon, *The Wretched of the Earth,* trans. Constance Farrington (New York: Grove, 1963), 250.

141. See, for instance, George Black, "Is Environmental Destruction a War Crime?" *OnEarth* (Winter 2005), http://www.nrdc.org/onearth/05win/briefings.asp (accessed 15 September 2010); Souad N. Al-Azzawi, "Depleted Uranium Radioactive Contamination in Iraq: An Overview," *Global Research,* 31 August 2006, http://www.globalresearch.ca/index.php?context=viewArticle&code=AL-20060831&articleId=3116 (accessed 15 September 2010); Jeffrey St. Clair and Joshua Frank, "Ecological Warfare: Iraq's Environmental Crisis," *CounterPunch,* 25 October 2007, http://www.counterpunch.org/stclair10252007.html (accessed 15 September 2010); Steven D. Hanks, "Left in the Desert: The Environmental Fallout of the Iraq War," emagazine.com, http://www.emagazine.com/view/?4285 (accessed 15 September 2010).

142. Mitchell, *Rule of Experts,* 44, 210–11, 223.

Bibliography

Archives

India Office Records, British Library, London
Papers by Ilay Ferrier (Eur Mss C874).

Liddell Hart Center for Military Archives, King's College, London
Brooke-Popham Papers

Liddle Collection, Leeds University Library, Leeds
GS 0993 (Lynden-Bell Papers), GS 0089 (Barnett Papers), MES 007 (Bellers Papers).

Middle East Centre Archive, St Antony's College, Oxford
Papers of Kinch, Sykes, Harold R. P. Dickson, Philby, Glubb

National Archives, London
AIR 1, 2, 5, 8, 9, 20, 23
CO 730
FO 371
WO 158

National Army Museum, London
Leith-Ross Papers (ARC 1983–12–69–10)

Parliamentary Papers

Newspapers

Daily Telegraph
Guardian
Illustrated London News
Times

Books and Articles

Al-Azzawi, Souad N. "Depleted Uranium Radioactive Contamination in Iraq: An Overview." *Global Research*, 31 August 2006. Available at http://www.globalresearch.ca/index.php?context=viewArticle&code=AL-20060831&articleId=3116. Accessed 15 September 2010.

Bell, Gertrude. *Amurath to Amurath*. New York: Dutton, 1911.

[———.] *The Arab of Mesopotamia*. Basra: Government Press, 1917.

———. *Gertrude Bell: The Arabian Diaries, 1913–1914*. Edited by Rosemary O'Brien. Syracuse, N.Y.: Syracuse University Press, 2000.

———. *The Letters of Gertrude Bell*. Edited by Lady Bell. 2 vols. London: E. Benn, 1927.

Benjamin, Walter. "The Work of Art in the Age of Mechanical Reproduction." 1937. In *Illuminations*, edited by Hannah Arendt, translated by Harry Zohn, 217–52. New York: Schocken Books, 1968.

Bevan, Edwyn. *The Land of the Two Rivers*. London: E. Arnold, 1918.

Bird, Wilkinson D. *A Chapter of Misfortunes: The Battles of Ctesiphon and of the Dujailah in Mesopotamia, with a Summary of the Events Which Preceded Them*. London: Forster Groom, 1923.

Black, George. "Is Environmental Destruction a War Crime?" *OnEarth* (Winter 2005). Available at http://www.nrdc.org/onearth/05win/briefings.asp. Accessed 15 September 2010.

Bose, Sugata. *A Hundred Horizons: The Indian Ocean in the Age of Global Empire*. Cambridge, Mass.: Harvard University Press, 2006.
Brent, Peter. *Far Arabia: Explorers of the Myth*. London: Weidenfeld and Nicolson, 1977.
Buchanan, George. *The Tragedy of Mesopotamia*. London: W. Blackwood, 1938.
Burgoyne, Elizabeth. *Gertrude Bell: From Her Personal Papers*. 2 vols. London: E. Benn, 1958–61.
Bury, G. Wyman [Abdullah Mansur, pseud.]. *The Land of Uz*. London: Macmillan, 1911.
Busch, Briton Cooper. *Britain, India, and the Arabs, 1914–1921*. Berkeley: University of California Press, 1977.
Butler, S. S. "Baghdad to Damascus via El Jauf, Northern Arabia." *Geographical Journal* 33, no. 5 (1909): 517–33.
Candler, Edmund. *The Long Road to Baghdad*. 2 vols. New York: Houghton Mifflin, 1919.
Carruthers, Douglas. *Arabian Adventure: To the Great Nafud in Quest of the Oryx*. London: H. F. and G. Witherby, 1935.
Casey, Robert J. *Baghdad and Points East*. London: Hutchinson, 1928.
Cato, Conrad. *The Navy in Mesopotamia: 1914 to 1917*. London: Constable, 1917.
Clark, Arthur Tillotson. *To Bagdad with the British*. New York: D. Appleton, 1918.
Cohen, Stuart A. "The Genesis of the British Campaign in Mesopotamia, 1914." *Middle Eastern Studies* 12, no. 2 (1976): 119–32.
Coke, Richard. *The Arab's Place in the Sun*. London: Thornton Butterworth, 1929.
Cole, Juan. *Roots of North Indian Shī'ism in Iran and Iraq: Religion and State in Awadh, 1722–1859*. Berkeley: University of California Press, 1988.
Colls, Robert. "The Constitution of the English." *History Workshop Journal* 46 (1998): 97–128.
Constantine, Stephen. *The Making of British Colonial Development Policy, 1914–1940*. London: F. Cass, 1984.
Cooper, Frederick. "Modernizing Bureaucrats, Backward Africans, and the Development Concept." In *International Development and the Social Sciences: Essays on the History and Politics of Knowledge*, edited by Frederick Cooper and Randall Packard, 70. Berkeley: University of California Press, 1997.
Cooper, Frederick, and Randall Packard, eds. *International Development and the Social Sciences: Essays on the History and Politics of Knowledge*. Berkeley: University of California Press, 1997.
Cox, Jafna. "A Splendid Training Ground: The Importance to the Royal Air Force of Its Role in Iraq, 1919–32." *Journal of Imperial and Commonwealth History* 13, no. 2 (1985): 157–84.
Crush, Jonathan, ed. *Power of Development*. London: Routledge, 1995.
Davis, Paul K. *Ends and Means: The British Mesopotamian Campaign and Commission*. London: Associated University Presses, 1994.

Edgerton, David. *Warfare State: 1920–1970*. Cambridge: Cambridge University Press, 2006.
Egan, Eleanor Franklin. *The War in the Cradle of the World: Mesopotamia*. New York: Harper, 1918.
Fanon, Frantz. *The Wretched of the Earth*. Translated by Constance Farrington. New York: Grove, 1963.
Fraser, David. *The Short Cut to India: The Record of a Journey along the Route of the Baghdad Railway*. Edinburgh: W. Blackwood, 1909.
Fussell, Paul. *The Great War and Modern Memory*. London: Oxford University Press, 1975.
Galbraith, John S. "No Man's Child: The Campaign in Mesopotamia, 1914–1916." *International History Review* 6, no. 3 (1984): 358–85.
Gilbert, Martin. *Winston S. Churchill. Vol. 4: 1916–1922, The Stricken World*. Boston: Heinemann, 1975.
———, ed. *Winston S. Churchill, Companion, Part 3: Documents April 1921–November 1922*. London: Heinemann, 1977.
Gilmartin, David. "Imperial Rivers: Irrigation and British Visions of Empire." In *Decentring Empire: Britain, India and the Transcolonial World*, edited by Durba Ghosh and Dane Kennedy, 76–103. New Delhi: Orient Longman, 2006.
Glubb, John. *Arabian Adventures: Ten Years of Joyful Service*. London: Cassell, 1978.
———. *The Changing Scenes of Life: An Autobiography*. London: Quartet, 1983.
———. *The Story of the Arab Legion*. London: Hodder and Stoughton, 1948.
Haldane, Aylmer. *The Insurrection in Mesopotamia*. London: W. Blackwood, 1922.
Hamlin, Christopher. *Public Health and Social Justice in the Age of Chadwick: Britain, 1800–1854*. Cambridge: Cambridge University Press, 1998.
Hanks, Steven D. "Left in the Desert: The Environmental Fallout of the Iraq War." emagazine.com. Available at http://www.emagazine.com/view/?4285 Accessed 15 September 2010.
Hart, Basil Henry Liddell. *The British Way in Warfare*. New York: Macmillan, 1933.
———. *T. E. Lawrence: In Arabia and After*. London: Jonathan Cape, 1934.
Hogarth, David G. "Problems in Exploration I. Western Asia." *Geographical Journal* 32, no. 6 (1908): 549–70.
Hynes, Samuel. *The Edwardian Turn of Mind*. Princeton: Princeton University Press, 1968.
Jarvis, C. S. *Arab Command: The Biography of Lieutenant-Colonel F. G. Peake Pasha*. London: Hutchinson, 1946.
Jebb, Louisa. *By Desert Ways to Baghdad*. Boston: Dana, Estes, 1909.
Keith, Claude H. *Flying Years*. Aviation Book Club ed. London: J. Hamilton, 1937.
Kern, Stephen. *The Culture of Time and Space: 1880–1918*. Cambridge, Mass.: Harvard University Press, 1983.
Killingray, David. "'A Swift Agent of Government': Air Power in British Colonial Africa, 1916–1939." *Journal of African History* 25, no. 4 (1984): 429–44.

Knightley, Philip, and Colin Simpson. *The Secret Lives of Lawrence of Arabia*. London: Nelson, 1969.
Laffin, John. *Swifter Than Eagles: The Biography of Marshal of the Royal Air Force Sir John Maitland Salmond*. Edinburgh: W. Blackwood, 1964.
Lawrence, Arnold W., ed. *T. E. Lawrence, by His Friends*. London: J. Cape, 1937.
Lawrence, T. E. *The Letters of T. E. Lawrence*. Edited by David Garnett. London: Jonathan Cape, 1938.
Lee, Arthur Gould. *Fly Past: Highlights from a Flyer's Life.* London: Jarrolds, 1974.
Leed, Eric J. *No Man's Land: Combat and Identity in World War I*. Cambridge: Cambridge University Press, 1979.
Lindqvist, Sven. *A History of Bombing*. 2000. Translated by Linda Haverty Rugg. New York: W. W. Norton, 2001.
Litvak, Meir. "A Failed Manipulation: The British, the Oudh Bequest and the Shi'i Ulama of Najaf and Karbala." *British Journal of Middle Eastern Studies* 27, no. 1 (2000): 69–89.
———. "Money, Religion, and Politics: The Oudh Bequest in Najaf and Karbala, 1850–1903." *International Journal of Middle Eastern Studies* 33, no. 1 (2001): 1–21.
Lorimer, John G., ed. *Gazetteer of the Persian Gulf, Oman, and Central Arabia*. Vol. 2: *Geographical and Statistical.* Calcutta: Government Press, 1908.
Mack, John. *A Prince of Our Disorder: The Life of T. E. Lawrence*. Boston: Little, Brown, 1976.
Mann, James Saumarz. *An Administrator in the Making: James Saumarez Mann*, 1893–1920. Edited by his father [James Saumarez Mann Sr.]. London: Vintage, 1921.
Maunsell, Francis R. "The Hejaz Railway." *Geographical Journal* 32, no. 6 (1908): 570–84.
Mitchell, Timothy. *Rule of Experts: Egypt, Techno-Politics, Modernity*. Berkeley: University of California Press, 2002.
Monk, F. V., and H. T. Winter. *The Royal Air Force*. London: Blackie and Son, 1938.
Nunn, Wilfrid. *Tigris Gunboats: A Narrative of the Royal Navy's Co-operation with the Military Forces in Mesopotamia from the Beginning of the War to the Capture of Baghdad (1914–17)*. London: A. Melrose, 1932.
One of Its Officers. *With a Highland Regiment in Mesopotamia, 1916–1917*. Bombay: Times Press, 1918.
Omissi, David. *Air Power and Colonial Control: The Royal Air Force, 1919–1939*. Manchester: Manchester University Press, 1990.
Owen, Alex. *The Place of Enchantment: British Occultism and the Culture of the Modern*. Chicago: University of Chicago Press, 2004.
Orwell, George. "The Lion and the Unicorn: Socialism and the English Genius." 1941. Available at http://www.k-1.com/Orwell/index.cgi/work/essays/lionunicorn.html. Accessed 15 September 2010.

———. "Politics and the English Language." 1946. Available at http://www.george-orwell.org/Politics_and_the_English_Language/0.html. Accessed 15 September 2010.

Parfit, J. T. *Serbia to Kût: An Account of the War in the Bible Lands*. London: Hunter and Longhurst, 1917.

Peck, R. H. "Aircraft in Small Wars." *Journal of the Royal United Services Institute* 73, no. 491 (1928): 535–50.

Popplewell, Richard. "British Intelligence in Mesopotamia: 1914–1916." *Intelligence and National Security* 5, no. 2 (1990): 139–72.

Reynardson, Henry Birch. *Mesopotamia, 1914–15: Extracts from a Regimental Officer's Diary*. London: Andrew Melrose, 1919.

Rich, Paul B. *Race and Empire in British Politics*. Cambridge: Cambridge University Press, 1986.

Rothwell, V. H. "Mesopotamia in British War Aims, 1914–1918." *Historical Journal* 13, no. 2 (1970): 273–94.

Said, Edward. *Orientalism*. 1978. New York: Vintage, 1979.

Satia, Priya. "Developing Iraq: Britain, India and the Redemption of Empire and Technology in the First World War." *Past and Present* 197, no. 1 (2007): 211–55.

———. *Spies in Arabia: The Great War and the Cultural Foundations of Britain's Covert Empire in the Middle East*. New York: Oxford University Press, 2008.

Scott, James C. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. New Haven, Conn.: Yale University Press, 1998.

Sinha, Meeta. " 'Where Electricity Dispels the Illusion [of the Arabian Nights]': The British and the Modern in Interwar India." Paper presented at the Pacific Coast Conference of British Studies, Irvine. 2006.

Sluglett, Peter. *The British in Iraq: 1914–1932*. London: Ithaca, 1976.

Smith, Malcolm. *British Air Strategy between the Wars*. Oxford: Clarendon, 1984.

St. Clair, Jeffrey, and Joshua Frank. "Ecological Warfare: Iraq's Environmental Crisis." *CounterPunch*, 25 October 2007. Available at http://www.counterpunch.org/stclair10252007.html. Accessed 15 September 2010.

Swayne, Martin. *In Mesopotamia*. London: Hodder and Stoughton, 1917.

Sykes, Mark. *The Caliph's Last Heritage*. London: Macmillan, 1915.

———. Dar-ul-Islam: *A Record of a Journey through Ten of the Asiatic Provinces of Turkey*. London: Bickers and Son, 1904.

Townsend, Meredith. *Asia and Europe: Studies Presenting the Conclusions Formed by the Author in a Long Life Devoted to the Subject of the Relations between Asia and Europe*. 2nd ed. New York: G. P. Putnam's, 1904.

Townshend, Charles. *Britain's Civil Wars: Counterinsurgency in the Twentieth Century*. Boston: Faber and Faber, 1986.

———. "Civilization and 'Frightfulness': Air Control in the Middle East between the Wars." In *Warfare, Diplomacy and Politics: Essays in Honour*

of A. J. P. Taylor, edited by Chris Wrigley, 142–62. London: Hamish Hamilton, 1986.
Wilkinson, R. J. "The Geographical Importance of Iraq." *Journal of the Royal United Services Institute* 61, no. 468 (1922): 660–65.
Wilson, Arnold T. *Mesopotamia, 1917–1920: A Clash of Loyalties*. London: Oxford University Press, 1931.
Young, Hubert. *The Independent Arab*. London: J. Murray, 1933.

Chapter 2

Restoring Roman Nature

French Identity and North African Environmental History

Diana K. Davis

FRENCH COLONIAL occupation and expansion across North Africa in the nineteenth and twentieth centuries were closely connected with a widespread belief that the French were the heirs of Rome. Although the importance of the Roman legacy for several French colonial actions has been recognized, for example in the military, the agricultural sector, and identity formation among the French living in North Africa, the significance of its impact for thinking about the relationship between the environment and identity has not been widely explored. This essay suggests that the imperative of restoring what was incorrectly perceived as a deforested and desertified environment to its mythical former fertility under Roman administration became, for certain segments of the French population, an integral part of notions of French imperial and, to a certain degree, national identity.

The belief that the environment, assumed to have been ruined by the "natives," had to be restored was especially widespread among the French colonists in Algeria and later in Tunisia and Morocco, as well as in the colonial lobby in the metropole. For many, the allegedly degraded landscape

threatened to defeat the colonial project and to debase European civilization in the Maghreb. The restoration of the environment through massive reforestation and other environmental improvement projects was seen as crucial to the survival of the French and other Europeans in North Africa. It was commonly argued, for instance, that since Roman civilization could not have flourished if North Africa had not had a forest cover of at least 30 percent, the French must reforest the region. Equally important, agriculture must be improved with French methods in order to re-create the granary of Rome. European experiences with nature in other parts of the world, experiences that were generally efforts to tame a wild and threatening "foreign" nature, stand in stark contrast to the French project of restoring the "natural" landscape, a landscape of "self," to its former fertility and glory, and thereby proving themselves the true heirs of Rome.

Ferocious Colonial Nature

Analyses of European experiences with non-European natures around the world agree that the vast majority of these encounters produced descriptions of the landscape that classified the biophysical environment as exotic. That is, compared to European landscapes familiar to the writers (explorers, colonists, missionaries, etc.), newly discovered lands contained plants, animals, and land forms that were unfamiliar and therefore classified as "other" compared to the "normal" European landscape of "self." Such a binary, categorizing European nature as normal, temperate nature and non-European natures as exotic and decidedly "other" or abnormal, helped define Europeans' sense of self at a crucial time. As Derek Gregory has explained, "Writing tropical nature as 'other' thus conveyed 'its discursive differentiation from home and the familiar,' and in doing so helped to establish the 'superiority' of the domestic over the exotic."[1] This categorization also facilitated notions of "improvement" that were used throughout the colonized world to justify European intervention.[2]

In some parts of the world, such as the tropical Pacific islands and certain parts of the Americas and Africa, the exoticness of the landscape was sometimes portrayed as attractive, luxuriant, and fertile, especially early in imperial encounters.[3] In fact, it was frequently the "very 'otherness' of these lands which has made them appear so compelling, especially as a testing ground for imperial energy and imagination."[4] As Europeans gained years of experience in foreign lands, however, those perceptions tended to change, and representations of exotic landscapes became increasingly negative.

The historian Nancy Stepan has called this "the darkening of the sublime tropics," a phenomenon she illustrates with Alexander von Humboldt's

and other European's representations of the Americas over time.[5] She and the historian David Arnold both attribute a large part of this change in European attitudes toward, and representations of, tropical nature to the problems of fighting the endemic diseases of these regions, many of them new to European medical knowledge.[6] This went hand in hand with fears of moral and physical degeneration and with the debasement of European civilization in these exotic lands.

It is perhaps in the colonial settings of the nineteenth century that the portrayal of exotic nature by Europeans as negative and defective (wild, gigantesque, ferocious, diseased, barren, etc.) became most pronounced. This occurred not only in the "tropical world" as defined by the tropics of Cancer and Capricorn, but also nearly anywhere that the environment was warm and did not resemble Europe, including India, Africa, and much of South America and Asia.[7]

For the British in India, nature was never seen as edenic, for example, but rather as a series of exotic, difficult, and diseased environments that required forceful management. According to British representations, in some areas irrigation canals were required, in others drainage works were needed, in still others the defiled forest needed to be replanted, and nearly everywhere agriculture had to be "improved." The perceived strangeness and inadequacy of the Indian environment and its peoples justified British imperial intervention in countless ways even before the nineteenth century.[8]

Over the course of the nineteenth century, southern Africa was subject to European (primarily British) representations of nature that wove a story that also justified a European colonial presence. This narrative of a previously fertile, indeed somewhat edenic but exotic land, placed blame on the indigenous inhabitants, the Tswana, for deforesting and otherwise ruining the environment. In the eyes of some influential colonial actors such as John Croumbie Brown, the official colonial botanist, the local peoples had been such bad stewards of the land that they were being punished by God with drought.[9] This narrative, and variations on it, facilitated many important colonial goals in southern Africa during the nineteenth century, from justifying reforestation and other forestry measures to agricultural and soil conservation interventions in the name of stopping erosion.[10]

At the other end of the continent, in French North Africa, however, a different story, with a different representation of nature, was crafted early in the nineteenth century. Although it shared with the British narratives a strong tendency to blame the indigenous populations for perceived environmental ruin, it made the unique claim that the landscape was not exotic or "other" but rather that nature in North Africa represented a landscape of

Gallo-Roman "self." This narrative proclaimed that the French, as the heirs of Rome, had the duty and the honor of restoring the ruined North African environment to its former glorious fertility under Roman administration. The environment, however, was not as badly degraded, deforested, or desertified as so widely claimed during the colonial period.[11] Nonetheless, once constructed early in the occupation, this story served a wide variety of purposes promoting the French colonial venture for nearly 150 years.

Nature and Narratives in French North Africa: The Heirs of Rome

When the French conquered Algiers in 1830, their information about North Africa and its environment was limited despite its proximity to France. The French, like most Europeans of the time, believed that North Africa was a region of legendary natural fertility that had flourished in the past and had constituted the granary of Rome. This story, based nearly entirely on readings of classical texts by the Greeks and Romans, included the belief that North Africa was the most fertile region in the world and that it had been heavily forested during Roman times.[12] The new, colonial, addition to this story was that the environment of North Africa had been despoiled since the golden years of Roman imperial administration by the ravening hordes of nomads and their livestock that had deforested, overgrazed, and desertified the land since the eleventh-century Arab "Hillalian invasion."

Within two decades of the French occupation of Algeria, this story of the previously lush and fertile North African landscape being ruined by the indigenous Algerians, especially nomads, had taken shape. In 1847, the year before Algeria was made an official province of France, it was eloquently articulated by a member of the government-sponsored commission for the scientific exploration of Algeria: "This land, once the object of intensive cultivation, was neither deforested nor depopulated as today; it was the abundant granary of Rome."[13] This medical doctor, M. Périer, also spelled out a sentiment that would become increasingly widespread over the course of the French colonial period in North Africa: that the French were the legitimate heirs of Rome in all her imperial glory. He proclaimed that "it is therefore our responsibility to raise Algeria from her fallen state, and to return her to her past [Roman] glory."[14]

This narrative was used widely from the mid-nineteenth century not only to justify but also to motivate the development and implementation of economic, environmental, legal, and social policies in France's southernmost province. The primary results of the utilization of this declensionist environmental narrative were the appropriation of forest, agricultural, and grazing

Map 2.1. The Maghreb. Modified after multiple sources. Created by Maria Lane, 2006. *Reproduced with permission.*

lands for the French state and the colonists, the transformation of subsistence production into capitalist production, and social control of the indigenous North Africans, especially the nomads and forest dwellers, all in the name of environmental protection. The local Algerians lost nearly all their forests and most of the best agricultural and grazing lands as a result. Many were forced into dire levels of poverty, and the social disruption caused was profound.[15]

This story and its related policies were widely applied with minor variations to the protectorates of Tunisia and Morocco when they were conquered in 1881 and 1912 respectively, with similarly negative effects on the local populations. In Morocco, for instance, the young recruits in the indigenous affairs service were taught that "France is the legitimate successor of Rome. . . . The great Roman people of whom we are the heirs conquered this region well before the Arabs."[16] The instructor for this course, Jean Colin, after explaining that the "natives" had ruined the environment, encouraged his recruits by promising, "like Rome, we will again expand the cultivable area, dry out the swampy regions, and transform them into fertile plains," since it was the duty of France to revive the Roman oeuvre.[17] This they did with a fair amount of success.[18]

What is profoundly different about the French colonial environmental history of the Maghreb, compared to most other European environmental histories of their imperial territories, is that the French considered North Africa a landscape of "self" because they believed themselves the heirs of Rome. The Maghreb was not considered a foreign or dangerous landscape

in the way that the tropical jungles of South America, central Africa, or southeast Asia frequently were. In describing Algeria in 1847, a French artillery captain, M. de Mont Rond, for example, explained that North Africa was not like the barbaric territories: "There were no lands inhabited by savages among whom a stranger would surely find death; there was no gigantic river similar to the Amazon that crossed south America."[19] Indeed, the landscape of North Africa contained familiar vegetation—quite similar to that of southern France—just not quite enough of it. In the French imaginary, with enough reforestation, enlarged agricultural production, and careful tending in the form of banning fires and curbing grazing, the North African landscape—even the Sahara desert—would once again become the granary of empire, this time France's empire.

Thus one of the ways the French thought they could fulfill their Roman and imperial legacy was to "restore" the North African landscape to its former glory and fertility with large reforestation and other environmental and agricultural improvement projects. Many even believed they could restore a more humid and salubrious climate through reforestation—indeed that they had to in order to preserve French civilization. One influential colonist and adviser to the Algerian government, for example, Dr. Paulin Trolard, exhorting his countrymen to plant trees everywhere, promised that if "we decide to fight until our climate is transformed [by reforestation], it will be wealth, it will be life, it will be Algeria returned to its original [Roman] fertility: it will be Algeria becoming the granary of France!"[20] Failure to undertake such measures of environmental restoration, warned Dr. Trolard, would result in dire consequences. He explained in typically alarmist style that, if nothing were done, "the Sahara, this hearth of evil, stretches its arms towards us every day; it will soon enclose us, suffocate us, annihilate us!"[21]

For the French living in Algeria, it took only a few decades for the vision of restoring the allegedly ruined environment to Roman prosperity and fertility to become a key part of their colonial identity. This is a primary reason the landscape was not portrayed as exotic, but rather as Gallo-Roman "self." France's long history of invoking Roman heritage made this easy.

France and Rome: The Politics of National and Imperial Identity

Long before France developed any sense of "national identity," at least since the reign of Louis XIV (1643–1715), ties had been drawn between France and Rome. Before the mid-seventeenth century the nobility in France generally had claimed descent from the Germans, whereas the peasants were thought to be the descendants of Gallo-Romans.[22] During the last half of the seventeenth century, under the administration of Louis XIV and his

court, a program took shape "to make France an empire in the image of ancient Rome."[23] For Louis XIV, adopting Roman symbols of power, from dressing up in period costumes to landscaping the gardens at Versailles to evoke Rome, was a way to increase his own power and, hopefully, to create his own empire.

Fascination with the Roman empire continued into the eighteenth century, and study of their classical texts, along with those of ancient Greece, formed a substantial part of the education of elites in France during the period leading up to the revolution of 1789.[24] During the postrevolutionary period, many republicans, as Mike Heffernan has explained, "saw revolutionary France as the modern re-incarnation of the ancient Roman republic. . . . As such, modern enlightened France had a right and a duty to re-establish the traditions and values of the ancients in their former heartlands."[25] The French expeditions shortly thereafter to Italy, Egypt, and Greece were all inspired, to a certain degree, by the growing belief in France that the French were the heirs of Rome and its former empire. With the 1798 Napoleonic expedition to Egypt, the association between France and Rome as imperial powers in Africa was forged.[26]

By the early to mid-nineteenth century, the period most often identified as that during which "national identities" began to be formed, the notion that France was the heir of the Roman empire was firmly established.[27] Jules Michelet, a revered spokesperson for France, who conceived of the country as a person, held this view. In his widely read and highly influential 1846 book *The People,* Michelet proclaimed that "we are the Romans of Rome, and the Frenchmen of France."[28] It is not surprising, then, that the French began early in their occupation of North Africa to proclaim a Roman legacy there. Claiming a glorious Roman past for North Africa served the goals of many in France and the Maghreb particularly well.

The Roman experience was analyzed for guidance about how to conquer and colonize the region, and, more important, the fact that the Romans had succeeded in colonizing North Africa was held up as a primary justification for French colonization. Only three years after capturing Algiers, the king of France, for example, encouraged the troops in Algeria, in 1833, to "finish the conquest and return to civilization this shore of the Mediterranean surrendered, since the destruction of the Roman empire, to anarchy and barbarism."[29]

The French military deliberately modeled itself in several ways on the Roman experience in North Africa during the early years of conquest and expansion in Algeria. General Bugeaud, for instance, based on his reading of Roman texts, implemented new warfare tactics such as mobile

Figure 2.1. Arch of Trajan and Capitoline temple, Roman Imperial Period, Timgad, Algeria, Gerard Degeorge. *The Bridgeman Art Library International. Reproduced by permission.*

columns.[30] Roman texts also provided advice on how to administer a colony in North Africa, including how to proceed with agricultural development and how to better deal with the "natives."[31] One of the primary rationales for sedentarizing the nomads, for example, was the claim that the Romans had successfully done so and that it had created conditions of security and prosperity that France should emulate.[32] The many Roman ruins that dotted the landscape were not only a testimonial to the successful Roman past and French future in North Africa, but also, in many cases, provided very real material benefits for the French in the form of functioning cisterns, roads, and aqueducts.[33]

Historians have explained that invoking the story that the French were the true heirs of Rome in North Africa also served an important ideological function that further solidified French hegemony. Patricia Lorcin argues that "the substitution of a remote Western [Roman] past for a recent Islamic one and the institutionalization of Algeria as spatially French were important steps in marginalizing the presence and culture of the Arabs and Berbers."[34] Moreover, in the words of Yves Lacoste, "turning the Arabs into invaders was one way of legitimizing the 'French presence,'" and it "provided a historical basis for turning Arabs and Berbers against each other."[35]

Since the French colonial environmental narrative blamed the indigenous Algerians, and especially the nomads, for ruining the North African environment, the local populations were thus condemned on two levels: for being illegitimate invaders of what was portrayed as long-standing French (Roman) territory and for destroying what had been a lush and fertile environment. This narrative construction provided powerful ammunition for the French in Algeria to morally and legally dispossess the Algerians (and later the Tunisians and Moroccans) of their property, to confiscate their forests, to undermine their livelihoods, and to govern and "civilize" them.

Although this story was well developed by the mid-nineteenth century and widely accepted in Algeria and within the pro-colonial lobby in France, it did not gain wider French support until later in the century. The French deputy, Amédée Desjobert, summed up the sentiment of many anticolonialists in France when he stated in 1846 that "we have established that we cannot colonize [in Algeria] as did the Greeks and Romans."[36] Support for colonialism in general had been low in France during the first half of the nineteenth century. It may have reached a nadir in the early 1880s when an anticolonial backlash in France to Prime Minister Jules Ferry's procolonial actions brought down his government.[37]

An important turning point in popular sentiment toward colonialism occurred three years later, however, with the 1889 colonial exposition in Paris, which generated much interest in French overseas adventures. Will Swearingen explains that after the 1889 exposition, "French pride and patriotism, smarting since the 1870–1871 [Franco-Prussian] war, sensed a healthy outlet in colonialism."[38] Within just a few years, many organizations supporting colonization had been formed, including the Committee for French Africa (1890), the "colonial group" in both the French Chamber of Deputies and the French Senate (1892), the French Colonial Union (1893) composed of more than four hundred French companies with colonial interests, and the Colonial League (1907).[39] Many others followed over the next several years. It was not until the interwar years, however, that a slim majority of average French citizens could be said to support French colonialism and to take pride in a "greater France."[40]

Another change has been identified that bears directly on the reception of this colonial narrative in France around the turn of the century. The geographer Vidal de la Blache put forth the idea that a key component of national identity in France derived from the diversity of people being able to "master the environments where they settled."[41] Mastering the French environment and having hard-working people who were members not only of their different provincial towns and regions but also and

equally members of the French nation gave France her national identity. This interpretation "seduced public opinion in the late nineteenth and early twentieth centuries" in France and was widely influential.[42]

All these ideas—that France was the heir of imperial Rome, that the North African environment had been deforested and degraded since the end of the Roman empire, that colonial expansion was necessary and "good," and that mastering the environment was an imperative of being French—combined in French North Africa to create a kind of French imperial identity that hinged in part on restoring the environment to its former Roman lushness and fertility through reforestation and agricultural improvements. As Algeria, Tunisia, and Morocco were arguably viewed into the 1950s as France's most successful colonial ventures, many invested a great deal in this vision.[43] It helped feed both French colonial identity in the Maghreb territories and certain notions of imperial and national identity in France.

The height of these sentiments was reached in the 1930s and was expressed in the 1930 celebrations of the centenary of the conquest of Algeria as well as at the 1931 colonial exposition in Paris. Although the French government organized and directed the huge propaganda effort in the 1930 celebrations to garner popular support for Algeria, it was, in part, successful.[44] There were myriad iterations of proud French claims to Roman heritage in North Africa in centenary publications and in the popular press. Various newspapers and magazines proclaimed that, in the Maghreb, "France is the heir of Rome and is superior to her [Rome]."[45]

The six-volume *History of French Colonies and the Expansion of France in the World* began to be published in Paris for a French audience in 1929 with the second volume, on Algeria, appearing in 1930. It shared many similarities with the propaganda of the 1930 Algerian centenary. The author of the volume on Algeria, Augustin Bernard, a widely published expert on North Africa, included many passages describing Algeria as the former granary of Rome whose environment had been ruined by the "natives." He explained, however, that "France had recovered the work of Rome in the same spirit as its predecessor."[46] Moreover, he proudly proclaimed that "France had, more than the Romans themselves, made immense progress with Algerian agriculture, extended the cultivated area, incorporated the best of the existing agricultural plants and introduced new ones."[47] He concluded that "thanks to the diffusion of the French language, vehicle of our ideas, the Algerian people that are being formed are truly ours, they are the young shoot from the old Gallo-Roman trunk."[48] This was vital since, in the words of this respected professor, "our final goal, conforming to our ideal of yesterday and today, to the ideal of Richelieu and of Louis XIV as well

as of the French Revolution, is the foundation of a France overseas, where our language and our civilization will be revived."[49] Bernard believed that France had succeeded in attaining these goals in Algeria. He concluded with pride in his 1937 volume on Northwest Africa for Vidal de la Blache's fifteen-part *Universal Geography,* that, indeed, France had succeeded in all three of its North African territories just "as did the Romans."[50]

Restoring Roman Nature: Fulfilling the Vision

This French environmental imaginary of North Africa was not just rhetoric or polemic—it had very real effects on both the physical environment of the territories and on a variety of laws, policies, and development plans across the region. Its acceptance and utilization are visible in many of these laws and policies, and especially in the multiple changes enacted on the North African landscape in the realms of agriculture and forestry.

Prior to the 1880s, the French colonial environmental narrative was used nearly exclusively within colonial Algeria to effect changes sought either by the colonists or the Algerian government. This narrative informed important legal changes, made in the name of environmental protection, during the period, including the land use laws of 1838, 1846, 1863, and 1873, and the forestry law of 1874. All of these laws favored French and European colonists and the colonial state over indigenous Algerians and resulted in the loss of property and use-rights to a wide array of landscapes from forests to fields to pastures previously used for subsistence by rural Algerians.[51] This trend would continue throughout the period of French rule in the Maghreb, and similar results were obtained in Tunisia and Morocco.

During the 1880s, after pro-colonial rule had been firmly established in Algeria, the colonial environmental narrative of North Africa began to become more apparent in France itself. It was at its most obvious, perhaps, in the many fearful discussions and debates of deforestation and the need for reforestation in Algeria. Heavily influenced by the ubiquitous story of the deforestation of the North African environment by the "natives," and the need to restore it to its Roman fertility, fruitfulness, and forestedness, concerned French colonists took their cause to Paris. Influential groups such as the Ligue du Reboisement de l'Algérie (Algerian reforestation league) used the narrative to lobby continuously and persuasively for reforestation in Algeria, an activity that required both money and political willpower. Powerful political figures like parliamentarian (and later minister) Eugène Étienne were sympathetic to their cause.

By 1883, signs that the colonial environmental vision was being taken seriously in France were becoming increasingly apparent. That year, the

minister of agriculture in Paris, persuaded in part by the reforestation arguments of Dr. Trolard, president of the Ligue du Reboisement, decreed a new policy that provided tree seedlings to Algerian colonists at no charge.[52] In 1886, the concerns about deforestation and debates over forestry in Algeria captured enough concern in France that an Algerian forestry group was formed in the French senate.[53] Throughout the 1870s, 1880s, and into the early 1890s, the budget for the Algerian forest service was increased as were personnel. The number of fines for forest infractions multiplied precipitously. The power of the forest service grew so great that, in the words of one historian, it became "a veritable state within a state" and ran roughshod over the local Algerians.[54]

The most far-reaching change enacted by the French government in Paris to be based on the French colonial environmental imaginary was the 1903 Algerian Forest Code.[55] Building on decades of vocal concern by foresters and others in Algeria that massive deforestation had occurred since Roman times, this punitive and restrictive new law placed a special emphasis on reforestation. The chief forest inspector, Henri Lefebvre, had lamented only three years before this, in 1900, the destruction of the thick forests of antiquity and proposed that a close examination of geologic maps could provide the vision for "the reconstitution of the forests of Algeria from the Roman period."[56] Two decades before this, forest inspector Reynard had voiced similar concerns, including even the arid south of Alger province. He claimed that this region "was at an earlier time highly populated: many Roman ruins cover the country. . . . The rivers there have gradually diminished with general deforestation. This idea is corroborated by the numerous traces of ancient forests."[57] Like the vast majority of foresters working in or visiting Algeria from France, Reynard believed that the forests must be restored because, since the Roman period, the local Algerians, especially the nomads, had burned and overgrazed and thus had "created the sand dunes where all vegetation has disappeared."[58] The director of forestry in France, Louis Tassy, had expressed similar concerns in his 1872 report on Algerian forests.[59]

In addition to codifying several disparate decrees promulgated earlier in the colonial period dealing with conserving existing forests by criminalizing forest fires, grazing, growing, and gathering on forest land, the 1903 forest law reflected ubiquitous concerns about deforestation and desiccation. It facilitated the expropriation of land nearly anywhere, even sand dunes, for reforestation perimeters in the name of environmental protection for the public good.[60] This was because written into the law was the incorrect belief, drawn from the colonial environmental narrative, that

deforestation necessarily caused climatic deterioration and desiccation, and that planting trees would "bring back the rains."

A series of six bylaws were added to the 1903 law in June 1904 that spelled out how the 1903 forest law would be applied. One of the conclusions of the report commissioned to formulate the bylaws was that Algeria should be at least 30 percent forested whereas it was only 10 percent forested and therefore approximately five million hectares urgently needed to be reforested.[61] Within a year of the passing of the Algerian forest law, reforestation perimeters began to be declared. To organize this important work, a special reforestation service was created in 1908.[62] By the 1930s, 408,000 hectares had been placed under nineteen different reforestation perimeters.[63] This was in addition to the nearly 2.5 million hectares of Algerian forest, roughly 75 percent of total forest, owned by the state at this time.[64] By the early 1950s, 7.5 million hectares had been identified as potential reforestation perimeters and more than two million hectares actually had been demarcated reforestation perimeters.[65]

The 1903 forest law and the less comprehensive laws that preceded it, along with the powerful land laws of 1846, 1863 and 1873, significantly transformed the landscape of Algeria. What had been a landscape dominated by indigenous forest use, subsistence agriculture, and vast expanses of pasture land held in common by the Algerian tribes, became a highly regulated, privately and state-owned landscape dominated by European agribusiness. Whereas the colonial state dominated the protection and production of the vast majority of Algeria's forestland, private ventures led the transformation of Algeria's agricultural landscape. Driven by the belief that during the Roman period, large amounts of wheat, vines, and olives had thrived and supported large populations, colonists did their best to emulate the ancient example. Until the 1880s, wheat dominated European agricultural production, in large part because it was not capital intensive. With the phylloxera crisis in France and the drop in international prices of wheat, the 1880s saw a phenomenal growth in viticulture in Algeria and Tunisia. In Algeria, 15,000 hectares of vines in 1878 had increased to 110,000 hectares by 1890.[66]

This spectacular growth was fueled in many cases by the French colonial environmental imaginary. A striking example comes from the young protectorate of Tunisia, annexed by France in 1881. The director of agriculture, Paul Bourde, deeply influenced by the colonial environmental narrative, believed that under Roman administration this region "had long ago a great reputation of fertility," and he blamed the "Arab invasion" for its "sterilization."[67] He wrote in the report justifying a new decree that the

Romans had initiated olive cultivation in Tunisia, creating a huge forest in the region of Sfax, in the first century and "they became very rich."[68] Armed with this imaginary, in 1893 he enacted policies that favored and encouraged the planting of olive and fruit trees on a massive scale by European colonists and capitalists. Over the next half century, thanks to these policies, the landscape, especially around Sfax, was completely transformed by the planting of more than 6 million olive trees and 2.3 million fruit trees.[69]

In Algeria, one of the biggest transformations of the landscape, and probably one of the largest efforts at reforestation, was produced with the planting of eucalyptus trees. An Australian native plant, eucalyptus was introduced to North Africa by Prosper Ramel, and its propagation and spread were avidly encouraged by one settler in particular, François Trottier. Known as the apostle of eucalyptus, he was deeply inspired by the colonial environmental imaginary. Trottier not only planted thousands of the trees himself, he also wrote multiple influential and widely read tracts during the late 1860s and 1870s extolling the virtues of eucalyptus for Algeria. Echoing common sentiments in Algeria at this time, Trottier proclaimed that reforesting with eucalyptus would supply wood for Algeria and France, that it would regularize the rains, improve the climate, purify the country, and thus favor civilization. Such changes he believed were necessary to prevent the moral deterioration commonly encountered when living in Africa.[70] By the late 1870s, approximately four million eucalyptus trees had been planted.[71] Hundreds of thousands more were planted later by various parties, including municipal governments around Algeria, railway and mining companies, and many settlers. By the mid-1870s, so many eucalyptus trees had been planted that one French journalist remarked that "a stranger who was not instructed of its exotic origin would take it for one of the indigenous trees of the region."[72] By the 1890s, eucalyptus trees had been planted in most villages and towns of Algeria. For his successful efforts at reforesting Algeria, Trottier was awarded the prestigious Cross of the Legion of Honor in 1878.[73]

In Morocco, the last territory to be conquered by the French in North Africa, the French colonial environmental imaginary was invoked from the very beginning of French control. The first and most influential of the governors-general of Morocco, Louis H.-G. Lyautey, believed that Morocco had been one of the granaries of Rome, and he acted on that belief.[74] For much of the colonial period in Morocco, agricultural development was driven by the legend of the granary of Rome, especially in the cereals sector. Known as the "wheat policy," the development and expansion of wheat cultivation in Morocco into the early 1930s reshaped significant portions of the protectorate's agricultural land.[75]

In the realm of forestry, a single man, the director of forestry Paul Boudy, developed the 1917 Moroccan forest code (based on Algeria's) and its attendant policies, fundamentally reshaping lands categorized as forest as well as curtailing forest resource use and access. An article he published at the end of his career in 1954, titled "The Resurrection of the Moroccan Forest," provided a triumphant overview of the forest service's work and also summed up many of Boudy's beliefs about forests in Morocco. He estimated that about two-thirds of Morocco's original forests had been destroyed since the "Arab invasions."[76] Like Trolard before him, Boudy believed that North Africa should have a rate of woodedness of 30 percent, and that it did have earlier, during the thriving and productive Roman period.

In the first tome of his four-volume masterpiece, the *North African Forest Economy,* Boudy eloquently articulated the still dominant colonial environmental narrative.[77] He added to his arsenal of documentation the new "natural vegetation" maps drawn up by the ecologist Louis Emberger in the 1930s, which "scientifically proved" the massive deforestation that had until then been deduced primarily from literary sources and questionable botanical theories.[78] These maps, though, were created by using the French colonial environmental narrative and simply put in authoritative map form the story that had been told of deforestation since the early years of the Algerian occupation.

The impact of Emberger's natural (potential) vegetation maps, as well as Boudy's inflated deforestation statistics derived from these maps, on the North African environment has been profound. During the late colonial period the maps and statistics informed countless projects to try to reforest the region, control erosion, and prevent further deforestation. Still considered some of the most authoritative sources on North African ecology and forestry today, Emberger's maps and Boudy's *North African Forest Economy* continue to be cited in support of a variety of local, regional, and international environment and development projects. Many of these projects fail since they are based on spurious ecological information, and, moreover, they are often socially disruptive.[79] Millions of hectares of land and millions of people in North Africa have been touched in some way by this long-lasting French colonial environmental history.

THE LEGACY of the French colonial environmental imaginary, then, is still with us today in the form of a commonly accepted environmental history of North Africa that continues to drive a significant amount of environmental and agricultural policy formulation at national and international scales.[80] Embedded in many of these reports and plans is the idea that indigenous

North Africans don't respect vegetation, especially trees, whereas those in the "civilized world" of Europe and North America revere trees and understand the ecological importance of vegetative cover. This, too, is largely a legacy of the French colonial environmental history of the Maghreb. It was repeated with great frequency during the colonial period that "the natives manifest a veritable hatred for trees."[81] Such claims were usually contrasted with the love the French had of trees and the care with which they protected their forests and other important plants. This was a common sentiment among most Europeans at the time as it was in North America.

The dichotomy of tree lovers versus tree haters played well into the sense of identity that the French developed in colonial North Africa. Building on long-established traditions of seeing themselves as the heirs of Rome in France, as well as in Rome's former imperial territories, the French quickly adopted this trope in the Maghreb. The tree-loving French envisioned themselves bringing civilization to the desert by planting trees and saving the forest from abuse by the local inhabitants, thus re-creating the supposedly thick forests of the Roman era. Looking to Roman examples and claiming Roman heritage also helped guide them in the war of conquest, develop agricultural improvement plans, sedentarize the troublesome nomads, and construct a distinct colonial identity as "Latin Africans."[82]

This chapter has explored the role of the French colonial environmental history of North Africa as a key component of colonial identity among the settlers living in the Maghreb and also how it informed certain notions of French imperial and thus national identity in France. Restoring the allegedly ruined environment to its imperial Roman glory with reforestation and agricultural improvements was something nearly all the French could point to with pride. Especially during the 1930s and 1940s, a sense of "imperial identity" grew stronger in France as a result of multiple factors, including the strong promotion of colonization by the government as well as historical impetuses such as the psychological toll of the Franco-Prussian war.[83]

As many of their other colonial possessions were beginning to fall apart, the Maghreb territories, especially Algeria, became even more important to the French. Held up as models of colonial success, they were in many ways crucial to notions of French imperial identity in large part because the "affirmation of French greatness was central to all definitions of French identity."[84] And as Krishan Kumar has recently argued, "The making of French national identity, just like the making of English national identity, has to be seen at least in part as a product of imperial ambitions and imperial rule."[85] In reality, though, ideas of imperial identity likely remained more an official and elite discourse than a focus of attention for the lay public.[86]

The French colonial environmental imaginary of North Africa thus may be seen as an important component of French settler identity in North Africa and also as an overlooked component of imperial and national identity in France, especially in official circles. As the heirs of Rome in North Africa, many French felt it was their duty and also a matter of honor to restore "their environment" to its ancient productive glory. Since the North African landscape was perceived as a landscape of "Gallo-Roman" self, rather than a foreign, exotic, and threatening landscape, restoring it was seen as a relatively simple affair. Reforestation, agricultural improvements, and outlawing many indigenous uses of the land were deemed to be sufficient to create a "new France" in North Africa.

The belief that the North African environment was a landscape of "self," degraded but relatively easily restored to productivity, sets the French experience with nature there apart from the vast majority of European imperial experiences with nature around the globe. Rather than forging an identity out of the need to "tame" or "control" an exotic, wild, and dangerous landscape as occurred in so many other European colonial encounters, the French in North Africa identified themselves as heroes who had restored the ruined environment and proved themselves the true heirs of Rome.

Notes

I thank Paul Claval for his thoughtful comments on an early draft of this chapter. I am also grateful to Michael Greenhalgh for providing me with a copy of his article cited below.

1. Derek Gregory, "(Post)Colonialism and the Production of Nature," in *Social Nature: Theory, Practice, and Politics,* ed. Noel Castree and Bruce Braun (Malden, Mass.: Blackwell, 2001), 98 cited. Gregory is drawing on Edward Said's influential book *Orientalism* and quoting Nancy Stepan, "Tropical Nature as a Way of Writing," in *Mundializacion de la ciencia y cultural national,* ed. A. Lafluente, A. Elena, and M. L. Ortega (Madrid: Doce Calles, 1991), 495–504. See also Nancy Leys Stepan, *Picturing Tropical Nature* (Ithaca, N.Y.: Cornell University Press, 2001), 17–18.

2. See Richard Drayton, *Nature's Government: Science, Imperial Britain, and the "Improvement" of the World* (New Haven: Yale University Press, 2000), for a good discussion of imperial notions of improvement.

3. Richard H. Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600–1860* (Cambridge: Cambridge University Press, 1995).

4. Stephen Daniels, *Fields of Vision: Landscape Imagery and National Identity in England and the United States* (Cambridge: Polity Press, 1993), 5.

5. See Stepan, *Picturing.*

6. David Arnold, *The Problem of Nature: Environment, Culture and European Expansion* (Oxford: Blackwell, 1996), see esp. 141–68. Arnold traces this change favoring more negative representations of tropical nature to approximately the mid-eighteenth century (see 150–53). See also Suzana Sawyer and Arun Agrawal, "Environmental Orientalisms," *Cultural Critique* 45, no. 1 (2000): 71–108.

7. See discussion in Stepan, *Picturing,* 17–18 and Arnold, *Problem,* esp. chap. 8, of various definitions of tropics and tropicality.

8. See Arnold, *Problem,* 169–87. See also David Gilmartin, "Models of the Hydraulic Environment: Colonial Irrigation, State Power and Community in the Indus Basin," in *Nature, Culture, Imperialism: Essays on the Environmental History of South Asia,* ed. David Arnold and Ramachandra Guha (Delhi: Oxford University Press, 1998), 210–36.

9. See Richard H. Grove, *Ecology, Climate and Empire: Colonialism and Global Environmental History, 1400–1940* (Cambridge: White Horse Press, 1997), 86–123.

10. See Kate B. Showers, *Imperial Gullies: Soil Erosion and Conservation in Lesotho* (Athens: Ohio University Press, 2005).

11. What the evidence demonstrates, in contrast to the colonial story, is that Roman overcultivation began to produce land degradation that was "followed [by] a phase of relative soil conservation and vegetative regeneration with the more nomadic land-use system of the Arabs." Bruno Messerli and Matthias Winiger, "Climate, Environmental Change, and Resources of the African Mountains from the Mediterranean to the Equator," *Mountain Research and Development* 12, no. 4 (1992): 332. For details explaining the evidence showing that North Africa has not suffered significant deforestation or environmental degradation over the last two thousand years, see Diana K. Davis, *Resurrecting the Granary of Rome: Environmental History and French Colonial Expansion in North Africa* (Athens: Ohio University Press, 2007), chap. 1.

12. For a full articulation of this French colonial environmental narrative and its consequences, see Davis, *Resurrecting.*

13. J.-A.-N. Périer, *Exploration scientifique de l'Algérie: Sciences médicales: De l'hygiène en Algérie,* 2 vols. (Paris: Imprimerie Royale, 1847), 1:29.

14. Ibid., 30.

15. See Charles-Robert Ageron, *Les Algériens musulmans et la France (1871–1919)* (Paris: Presses Universitaires de France, 1968); M'hammed Boukhobza, *Monde rural: Contraintes et mutations* (Alger: Office des Publications Universitaires, 1992); Jean Brignon, Abdelaziz Amine, Brahim Boutaleb, et al., *Histoire du Maroc* (Paris: Hatier, 1967); Jean Poncet and André Raymond, *La Tunisie* (Paris: Presses Universitaires de France, 1971); and Djilali Sari, *La Dépossession des fellahs* (Alger: Société Nationale d'Édition et de Diffusion, 1978).

16. Jean Colin, *L'Occupation romaine du Maroc, cours préparatoire* (Rabat: Service des Affaires Indigènes, 1925), 3.

17. Ibid., 13.

18. See Will D. Swearingen, *Moroccan Mirages: Agrarian Dreams and Deceptions, 1912–1986* (Princeton: Princeton University Press, 1987) for an excellent discussion of the development of agricultural policies and practices in Morocco.

19. M. de Mont Rond, *Histoire de la conquête de l'Algérie de 1830–1847* (Paris: Imprimerie de E. Marc-Aurel, Éditeur, 1847), 6. He clarified that Algeria, at the northern, European, end of the African continent, does not share anything with the continent of which it is a part. Rather, "the air there is generally healthy and temperate, the plants and the trees more European than tropical, wheat . . . appears to be there in its native soil . . . and its production is the most abundant and the easiest." Ibid., 7.

20. *Bulletin de la Ligue du Reboisement de l'Algérie,* no. 1, 1882, 2, 6.

21. Ligue du Reboisement, *La Forêt: Conseils aux indigènes* (Alger: Imprimerie de l'Association Ouvrière P. Fontana, 1883), 2. Trolard believed that the Sahara had been created by the nomads' overgrazing and deforesting the environment. Another influential colonist, August Warnier, went so far as to proclaim that "France itself, so prosperous, would soon become a desert if it were in the hands of the Arabs." Auguste Warnier, *L'Algérie devant l'empereur, pour faire suite à L'Algérie devant le sénat, et à L'Algérie devant l'opinion publique* (Paris: Challamel Ainé, 1865), 28.

22. Paul Claval, "From Michelet to Braudel: Personality, Identity and Organization of France," in *Geography and National Identity,* ed. David Hooson (Oxford: Blackwell, 1994), 40.

23. Chandra Mukerji, "The New Rome: Infrastructure and National Identity on the Canal du Midi," *Osiris* 24, no. 1 (2009): 15.

24. See Harold Parker, *The Cult of Antiquity and the French Revolutionaries* (Chicago: University of Chicago Press, 1937).

25. Michael J. Heffernan, "An Imperial Utopia: French Surveys of North Africa in the Early Colonial Period," in *Maps and Africa,* ed. J. Stone (Aberdeen: Aberdeen University African Studies Group, 1994), 82.

26. Patricia M. Lorcin, "Rome and France in Africa: Recovering Colonial Algeria's Latin Past," *French Historical Studies* 25, no. 2 (2002): 295–329.

27. For discussions of national identity, see David Hooson, Introduction to *Geography and National Identity,* ed. David Hooson (Oxford: Blackwell, 1994), 1–12, and Benedict Anderson, *Imagined Communities: Reflections on the Origin and Spread of Nationalism* (London: Verso, 1991).

28. Jules Michelet, *The People,* trans. John P. McKay (Urbana: University of Illinois Press, 1973), 185. Michelet clarified a few pages later that France "is not a mixture of two principles. In her the Celtic element has combined with the Roman, and the two are really one. The Germanic element, which some people are always talking about, is really imperceptible. She proceeds directly from Rome, and she ought to teach Rome—its language, its history and its law"

(193). Michelet is considered one of the key actors who articulated broadly held notions of national identity in France at this time. See Claval, "Michelet to Braudel." As Claval points out, Michelet also saw diversity as one of the defining qualities of France's identity, a notion shared by Vidal de la Blache.

29. Edouard Lapène, *Vingt-six mois à Bougie ou collection de mémoires sur sa conquête, son occupation et son avenir* (Paris: Éditions Bouchene, 2002), 131.

30. For details, see Jacques Frémeaux, "Souvenirs de Rome et présence française au Maghreb: Essai d'investigation," in *Connaissances du Maghreb: Sciences sociales et colonisation,* ed. Jean-Claude Vatin (Paris: CNRS, 1984), 29–46; and Lorcin, "Rome and France."

31. As Heffernan explains, "In a conscious effort to replicate Roman imperial practice, [Governor-General] Clauzel began to experiment with agricultural projects on 'vacant' Algerian land," and by 1835, "the first recognisable settler village was established at Boufarick, south of Algiers." See Heffernan, "Imperial Utopia," 84.

32. See Augustin Bernard and Napoléon Lacroix, *L'Évolution du nomadisme en Algérie* (Alger: Adolphe Jourdan, 1906), 20–22.

33. See Michael Greenhalgh, "The New Centurions: French Reliance on the Roman Past during the Conquest of Algeria," *War and Society* 16, no. 1 (1998): 1–28.

34. Lorcin, "Rome and France," 308. See also Edmund Burke, "The Image of the Moroccan State in French Ethnological Literature: A New Look at the Origin of Lyautey's Berber Policy," in *Arabs and Berbers: From Tribe to Nation in North Africa,* ed. Ernest Gellner and Charles Micaud (Lexington, Mass.: Lexington Books, 1972), 175–99. In his early work the historian Charles-Robert Ageron was the first to explore these ideas. See Charles-Robert Ageron, *Politiques coloniales au Maghreb* (Paris: Presses Universitaires de France, 1972), and Ageron, *Algérians.*

35. Yves Lacoste, *Ibn Khaldun: The Birth of History and the Past of the Third World,* trans. David Macey (London: Verso Editions, 1984), 75–76, 78.

36. Amédée Desjobert, *L'Algérie en 1846* (Paris: Guillaumin, 1846), 5. Indeed, some in the anticolonial lobby portrayed North Africa as a "barren wasteland, filled with savage beasts and wild tribesmen." Heffernan, "Imperial Utopia," 83.

37. Robert Aldrich, *Greater France: A History of French Overseas Expansion* (London: Macmillan, 1996), 97.

38. Swearingen, *Moroccan Mirages,* 6.

39. For more details, see Aldrich, *Greater France,* 89–121.

40. Ibid.

41. Claval, "Michelet to Braudel," 50.

42. Ibid. Notions of French identity have been heavily debated over the years. For a couple of influential texts, see Fernand Braudel, *L'Identité de la France* (Paris: Flammarion, 1986), and Edmond Lipiansky, *L'Identité française: Représentations, mythes, idéologies* (La Garenne-Colombes: Éditions de l'espace européen, 1991).

43. France's North African territories, especially Algeria, were held up as "models of colonial installation" to be emulated in other parts of French Africa. See Auguste Chevalier, *L'Agronomie coloniale et le Muséum National d'Histoire Naturelle: Premieres conférences du cours sur les productions coloniales végétales & l'agronomie tropicale* (Paris: Laboratoire d'Agronomie Coloniale, 1930), 2.

44. See Charles-Robert Ageron, *Histoire de l'Algérie Contemporaine, Tome II: De l'insurrection de 1871 au déclenchement de la guerre de libération (1954)* (Paris: Presses Universitaires de France, 1979), 403–11.

45. Quote from the French newspaper *Le Temps,* quoted ibid., 406.

46. Augustin Bernard, *L'Algérie,* ed. Gabriel Hanotaux and Alfred Martineau, vol. 2 of *Histoire des colonies françaises et de l'expansion de la France dans le monde,* 6 vols. (Paris: Librairie Plon, 1930), 535.

47. Ibid., 523. Similar ideas were expressed in popular publications as well. The 1930 *Michelin Guide to North Africa,* for example, proudly proclaimed that "the tradition of Rome has been renewed, but more humanely, generously, and extensively" because France brought the "benefits of civilization." From the 1930 *Michelin Guide to Morocco, Algeria and Tunisia,* quoted in Ellen Furlough, "Une leçon des choses: Tourism, Empire and the Nation in Interwar France," *French Historical Studies* 25, no. 3 (2002): 455. This article contains an interesting discussion of imperial national identity in 1930s France and the role of tourism to North Africa.

48. Bernard, *L'Algérie,* 532.

49. Ibid., 534. Just a few years later, in the 1937 volume on Northwest Africa for Vidal de la Blache's fifteen-volume *Universal Geography,* Bernard repeated many of his earlier claims. In this volume, though, Bernard explained that Rome had actually had an easier time administering North Africa because "they had not found, as had the French, a country ruined by long centuries of anarchy." Nor had the Romans had to "clash" with Islam. See Augustin Bernard, *Afrique septentrionale et occidentale: Première partie: Généralités—Afrique du nord,* vol. 1 of *Géographie universelle,* ed. Paul Vidal de la Blache, 15 vols. (Paris: Librairie Armand Colin, 1937), 77.

50. Ibid., 276.

51. See Davis, *Resurrecting,* for a detailed overview of how the colonial environmental narrative strongly informed these legal changes and their results.

52. See letter of 29 March 1883 from the Ministère de l'Agriculture, Direction des Forêts, Paris, to M. le Lievre, Senateur de Department d'Alger, reprinted in *Bulletin de la Ligue,* no. 18 (1883), 345–46.

53. *Bulletin de la Ligue,* no. 53 (1886), 1055.

54. Ageron, *Histoire,* 208. The 1892 "Ferry Report" exposed many of the excesses and problems in the Algerian forestry department but little was done to correct them.

55. For the first seventy years of French occupation of Algeria, the French Forest Code had been applied to Algeria with several associated decrees that had been created to deal with forests in Algeria. The 1903 Algerian Forest Code

was also based on the metropolitan French Forest Code, and it likewise privileged industrial production such as timber and cork over subsistence uses such as grazing, which it outlawed.

56. Henri Lefebvre, *Les Forêts de l'Algérie* (Alger-Mustapha: Giralt, 1900), 100.

57. J. Reynard, *Restauration des forêts et des pâturages du sud de l'Algérie (province d'Alger)* (Alger: Typographie Adolphe Jourdan, 1880), 6.

58. Ibid., 15–16. As early as 1851, these ideas were being refuted by specialists such as agronomist Auguste Hardy, who wrote that "the deforestation of Algeria is a natural consequence of its climate: it is caused more by the pernicious influence of the harmful winds and the poor seasonality of the rains than by the pasturing of animals and the fires set by herders, where the cause is so constantly sought." Auguste Hardy, "Note climatologique sur l'Algérie au point de vue agricole," in *Recueil de traités d'agriculture de d'hygiène à l'usage des colons de l'Algérie,* ed. Ministre de la Guerre (Alger: Imprimerie du Gouvernement, 1851), 48. Another scholar who refuted part of the conventional deforestation narrative was the geographer Élisée Reclus, author of the twelve-volume *New Universal Geography* describing the earth and its peoples. Although Reclus believed that the forests in the Maghreb were indeed thicker and more extensive long ago, he apportioned part of the blame for deforestation to the Romans themselves. He is also one of the only writers on North African forests to note the robust regrowth of many forest trees that was and is common in the region. See Élisée Reclus, *L'Afrique septentrionale*, vol. 11 of *Nouvelle géographie universelle: La terre et les hommes,* 12 vols. (1886), 365.

59. Louis-François Victor Tassy, *Service forestier de l'Algérie, rapport adressé à m. le gouverneur de l'Algérie* (Paris: Typographie A. Hennuyer, 1872).

60. See Angel-Paul Carayol, *La Législation forestière de l'Algérie* (Paris: Arthur Rousseau, Éditeur, 1906), 169–71.

61. Gouvernement Général de l'Algérie (GGA), *Commission d'études forestières* (Alger: Imprimerie Typographique et Papeterie J. Torrent, 1904), 101.

62. Paul Boudy, *Économie forestière nord-africaine: Milieu physique et milieu humain* (Paris: Éditions Larose, 1948), 1:479.

63. Ibid.

64. For figures, see ibid., 369 and John Ruedy, *Modern Algeria: The Origins and Development of a Nation* (Bloomington: Indiana University Press, 1992), 95.

65. Boudy, *Économie forestière,* 1:380–82. Probably due to financial constraints, only about 3 percent of this large area declared reforestation perimeters was actually reforested (ibid.).

66. Charles-Robert Ageron, *Modern Algeria: A History from 1830 to the Present,* trans. Michael Brett (London: Hearst, 1991), 60.

67. Paul Bourde, *Rapport sur les cultures fruitières et en particulier sur la culture de l'olivier dans le centre de la Tunisie* (Tunis: Imprimerie Générale [Picard, 1899), 3.

68. Ibid., 25.

69. Jean Poncet, *Paysages et problèmes ruraux en Tunisie* (Paris: Presses Universitaires de France, 1962), 257–58.

70. François Trottier, *Notes sur l'eucalyptus et subsidiairement sur la nécessité du reboisement de l'Algérie* (Alger: Typographie et Lithographie de F. Paysant, 1867), 5–6. The fear of moral and physical deterioration in North Africa was common among settlers in Algeria. Many believed that deforestation had led to an unhealthy desiccation and a torrid climate that threatened European civilization in the Maghreb. This underlying fear motivated many settlers to advocate for reforestation. For more details, see Davis, *Resurrecting,* 72, 102–6, 109–22, and 149–50. See also Caroline Ford, "Reforestation, Landscape Conservation, and the Anxieties of Empire in French Colonial Algeria," *American Historical Review* 113, no. 2 (2008): 341–62. Although it is true, as Ford points out, that these anxieties motivated a great deal of attention to issues of deforestation and reforestation in Algeria, similar anxieties that connected deforestation and other environmental degradation with questions of climate change, race, hygiene, and the (im)possibilities of European colonization were quite common throughout the global south and not unique to Algeria. See Gregory, "(Post)Colonialism"; Grove, *Green Imperialism;* Stepan, *Picturing;* and Arnold, *Problem,* among many other examples.

71. Achilles Filias, *Notice sur les forêts de l'Algérie: Leur étendue; leurs essences; leurs produits* (Alger: Imprimerie Administrative Gojosso, 1878), 20.

72. J. E. Planchon, "L'Eucalyptus globulus au point de vue Botanique, économique et médical," *Revue des Deux Mondes* 7, no. 1 January (1875): 163.

73. Narcisse Faucon, *Le Livre d'or de l'Algérie: Histoire politique, militaire, administrative, événements et faits principaux, biographie des hommes ayant marquée dans l'armée, les sciences, les lettres, etc.* (Paris: Challamel, 1889), 516. A street in Algiers was named Trottier in the 1880s.

74. Louis Lyautey, *Paroles d'action* (Paris: Imprimerie Nationale Éditions, 1995), 444–45.

75. See Swearingen, *Moroccan Mirages,* for details.

76. Paul Boudy, "L'Oeuvre forestière française au Maroc," *Bulletin de la Société Forestière de Franche-Comté et des Provinces de l'Est* 27, no. 1 (1954): 3.

77. Boudy, *Économie forestière,* 223–29.

78. For details, see Davis, *Resurrecting,* 149–57.

79. See ibid., 169–75, for examples.

80. See, for example, Diana K. Davis, "Neoliberalism, Environmentalism and Agricultural Restructuring in Morocco," *Geographical Journal* 172, no. 2 (2006): 88–105.

81. Bernard and Lacroix, *L'Évolution,* 44. See also Paul Boudy, *L'Arbre et les forêts au Maroc: Cours préparatoire au service des affaires indigènes* (Rabat: Résidence Générale de France au Maroc, Direction Générale des Affaires Indigènes, 1927), and Auguste Terrier, *Le Maroc* (Paris: Librairie Larousse, 1931), 187, who claimed that "as everywhere, the Arab has destroyed the tree."

82. See Lorcin, "Rome and France," for a full articulation of these ideas of Roman heritage for identity formation in colonial Algeria.

83. For a discussion of the 1931 colonial exhibition and "imperil identity" in France, see Charles-Robert Ageron, "L'Exposition coloniale de 1931: Mythe républican ou mythe impérial?," in *Les Lieux de mémoire: La République,* ed. Pierre Nora (Paris: Gallimard, 1984), 561–91. He concludes that a sense of imperial identity in France was likely stronger in the 1940s than in the 1950s.

84. Anne Sa'adah quoted in Krishan Kumar, "English and French National Identity: Comparisons and Contrasts," *Nations and Nationalisms* 12, no. 3 (2006): 428 n. 5.

85. Ibid., 417.

86. Paul Claval, personal communication via e-mail, February 2010.

Bibliography

Ageron, Charles-Robert. *Les Algériens musulmans et la France (1871–1919).* Paris: Presses Universitaires de France, 1968.

———. "L'Exposition coloniale de 1931: Mythe républican ou mythe impérial?" In *Les Lieux de Mémoire: La République,* ed. Pierre Nora, 561–91. Paris: Gallimard, 1984.

———. *Histoire de l'Algérie contemporaine, Tome II: De l'insurrection de 1871 au déclenchement de la guerre de libération (1954).* Paris: Presses Universitaires de France, 1979.

———. *Modern Algeria: A History from 1830 to the Present.* Translated by Michael Brett. London: Hearst 1991.

———. *Politiques coloniales au Maghreb.* Paris: Presses Universitaires de France, 1972.

Aldrich, Robert. *Greater France: A History of French Overseas Expansion.* London: Macmillan, 1996.

Anderson, Benedict. *Imagined Communities: Reflections on the Origin and Spread of Nationalism.* London: Verso, 1991.

Arnold, David. *The Problem of Nature: Environment, Culture and European Expansion.* Oxford: Blackwell, 1996.

Bernard, Augustin. *Afrique septentrionale et occidentale. Première partie: Généralités—Afrique du nord.* Vol. 1 of *Géographie universelle,* edited by Paul Vidal de la Blache. 15 vols. Paris: Librairie Armand Colin, 1937.

———. *L'Algérie.* Edited by Gabriel Hanotaux and Alfred Martineau. Vol. 2 of *Histoire des colonies françaises et de l'expansion de la France dans le monde.* 6 vols. Paris: Librairie Plon, 1930.

Bernard, Augustin, and Napoléon Lacroix. *L'Évolution du nomadisme en Algérie.* Alger: Adolphe Jourdan, 1906.

Boudy, Paul. *L'Arbre et les forêts au Maroc. Cours préparatoire au service des affaires indigènes.* Rabat: Résidence Générale de France au Maroc, Direction Générale des Affaires Indigènes, 1927.

———. *Économie forestière nord-africaine: Milieu physique et milieu humain.* Vol. 1. Paris: Éditions Larose, 1948.

———. "L'Oeuvre forestière française au Maroc." *Bulletin de la Société Forestière de Franche-Comté et des Provinces de l'Est* 27, no. 1 (1954): 1–10.

Boukhobza, M'hammed. *Monde rural: Contraintes et mutations.* Alger: Office des Publications Universitaires, 1992.

Bourde, Paul. *Rapport sur les cultures fruitières et en particulier sur la culture de l'olivier dans le centre de la Tunisie.* Tunis: Imprimerie Générale (Picard and Cie), 1899.

Braudel, Fernand. *L'Identité de la France.* Paris: Flammarion, 1986.

Brignon, Jean, Abdelaziz Amine, Brahim Boutaleb, Guy Martinet, and Bernard Rosenberger. *Histoire du Maroc.* Paris: Hatier, 1967.

Burke, Edmund. "The Image of the Moroccan State in French Ethnological Literature: A New Look at the Origin of Lyautey's Berber Policy." In *Arabs and Berbers: From Tribe to Nation in North Africa,* edited by Ernest Gellner and Charles Micaud, 175–99. Lexington, Mass.: Lexington Books, 1972.

Carayol, Angel-Paul. *La Législation forestière de l'Algérie.* Paris: Arthur Rousseau, Éditeur, 1906.

Chevalier, Auguste. *L'Agronomie coloniale et le Muséum National d'Histoire Naturelle: Premieres conférences du cours sur les productions coloniales végétales & l'agronomie tropicale.* Paris: Laboratoire d'Agronomie Coloniale, 1930.

Claval, Paul. "From Michelet to Braudel: Personality, Identity and Organization of France." In *Geography and National Identity*, edited by David Hooson, 39–57. Oxford: Blackwell, 1994.

Colin, Jean. *L'Occupation romaine du Maroc, cours préparatoire.* Rabat: Service des Affaires Indigènes, 1925.

Daniels, Stephen. *Fields of Vision: Landscape Imagery and National Identity in England and the United States.* Cambridge: Polity Press, 1993.

Davis, Diana K. "Neoliberalism, Environmentalism and Agricultural Restructuring in Morocco." *Geographical Journal* 172, no. 2 (2006): 88–105.

———. *Resurrecting the Granary of Rome: Environmental History and French Colonial Expansion in North Africa*. Athens: Ohio University Press, 2007.

de Mont Rond, M. *Histoire de la conquête de l'Algérie de 1830–1847.* Paris: Imprimerie de E. Marc-Aurel, Éditeur, 1847.

Desjobert, Amédée. *L'Algérie en 1846.* Paris: Guillaumin, 1846.

Drayton, Richard. *Nature's Government: Science, Imperial Britain, and the "Improvement" of the World.* New Haven: Yale University Press, 2000.

Faucon, Narcisse. *Le Livre d'or de l'Algérie: Histoire politique, militaire, administrative, événements et faits principaux, biographie des hommes ayant marquée dans l'armée, les sciences, les lettres, etc.* Paris: Challamel, 1889.

Filias, Achilles. *Notice sur les forêts de l'Algérie: Leur étendue; leurs essences; leurs produits.* Alger: Imprimerie Administrative Gojosso, 1878.

Ford, Caroline. "Reforestation, Landscape Conservation, and the Anxieties of Empire in French Colonial Algeria." *American Historical Review* 113, no. 2 (2008): 341–62.

Frémeaux, Jacques. "Souvenirs de Rome et présence française au Maghreb: Essai d'investigation." In *Connaissances du Maghreb: Sciences sociales et colonisation*, edited by Jean-Claude Vatin, 29–46. Paris: CNRS, 1984.

Furlough, Ellen. "Une leçon des choses: Tourism, Empire and the Nation in Interwar France." *French Historical Studies* 25, no. 3 (2002): 441–73.

Gilmartin, David. "Models of the Hydraulic Environment: Colonial Irrigation, State Power and Community in the Indus Basin." In *Nature, Culture, Imperialism: Essays on the Environmental History of South Asia,* edited by David Arnold and Ramachandra Guha, 210–36. Delhi: Oxford University Press, 1998.

Gouvernement Général de l'Algérie (GGA). *Commission d'études forestières.* Alger: Imprimerie Typographique et Papeterie J. Torrent, 1904.

Greenhalgh, Michael. "The New Centurions: French Reliance on the Roman Past during the Conquest of Algeria." *War and Society* 16, no. 1 (1998): 1–28.

Gregory, Derek. "(Post)Colonialism and the Production of Nature." In *Social Nature: Theory, Practice, and Politics,* edited by Noel Castree and Bruce Braun, 84–111. Malden, Mass.: Blackwell, 2001.

Grove, Richard H. *Ecology, Climate and Empire: Colonialism and Global Environmental History, 1400–1940.* Cambridge: White Horse Press, 1997.

———. *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600–1860.* Cambridge: Cambridge University Press, 1995.

Hardy, Auguste. "Note climatologique sur l'Algérie au point de vue agricole." In *Recueil de traités d'agriculture de d'hygiène à l'usage des colons de l'Algérie,* edited by Ministre de la Guerre, 37–62. Alger: Imprimerie du Gouvernement, 1851.

Heffernan, Michael J. "An Imperial Utopia: French Surveys of North Africa in the Early Colonial Period." In *Maps and Africa,* edited by J. Stone, 81–107. Aberdeen: Aberdeen University African Studies Group, 1994.

Hooson, David. Introduction to *Geography and National Identity,* edited by David Hooson, 1–12. Oxford: Blackwell, 1994.

Kumar, Krishan. "English and French National Identity: Comparisons and Contrasts." *Nations and Nationalisms* 12, no. 3 (2006): 413–32.

Lacoste, Yves. *Ibn Khaldun: The Birth of History and the Past of the Third World.* Translated by David Macey. London: Verso Editions, 1984.

Lapène, Edouard. *Vingt-six mois à Bougie ou collection de mémoires sur sa conquête, son occupation et son avenir.* Paris: Éditions Bouchene, 2002.

Lefebvre, Henri. *Les Forêts de l'Algérie.* Alger-Mustapha: Giralt, 1900.

Lipiansky, Edmond. *L'Identité française: Représentations, mythes, idéologies.* La Garenne-Colombes: Éditions de l'espace européen, 1991.

Lorcin, Patricia M. "Rome and France in Africa: Recovering Colonial Algeria's Latin Past." *French Historical Studies* 25, no. 2 (2002): 295–329.

Lyautey, Louis. *Paroles d'action.* Paris: Imprimerie Nationale Éditions, 1995.

Messerli, Bruno, and Matthias Winiger. "Climate, Environmental Change, and Resources of the African Mountains from the Mediterranean to the Equator." *Mountain Research and Development* 12, no. 4 (1992): 315–36.

Michelet, Jules. *The People.* Translated by John P. McKay. Urbana: University of Illinois Press, 1973.
Mukerji, Chandra. "The New Rome: Infrastructure and National Identity on the Canal du Midi." *Osiris* 24, no. 1 (2009): 15–32.
Parker, Harold. *The Cult of Antiquity and the French Revolutionaries.* Chicago: University of Chicago Press, 1937.
Périer, J.-A.-N. *Exploration scientifique de l'Algérie: Sciences médicales: De l'Hygiène en Algérie.* 2 vols. Paris: Imprimerie Royale, 1847.
Planchon, J. E. "L'Eucalyptus globulus au point de vue Botanique, économique et médical." *Revue des Deux Mondes* 7, no. 1 January (1875): 149–74.
Poncet, Jean. *Paysages et problèmes ruraux en Tunisie.* Paris: Presses Universitaires de France, 1962.
Poncet, Jean, and André Raymond. *La Tunisie.* Paris: Presses Universitaires de France, 1971.
Reboisement, Ligue du. *La Forêt: Conseils aux indigènes.* Alger: Imprimerie de l'Association Ouvrière P. Fontana, 1883.
Reclus, Élisée. *L'Afrique septentrionale.* Vol. 11 of *Nouvelle géographie universelle: La terre et les hommes,* edited by Élisée Reclus. 12 vols. 1886.
Reynard, J. *Restauration des forêts et des pâturages du sud de l'Algérie (province d'Alger).* Alger: Typographie Adolphe Jourdan, 1880.
Ruedy, John. *Modern Algeria: The Origins and Development of a Nation.* Bloomington: Indiana University Press, 1992.
Sari, Djilali. *La Dépossession des fellahs.* Alger: Société Nationale d'Édition et de Diffusion, 1978.
Sawyer, Suzana, and Arun Agrawal. "Environmental Orientalisms." *Cultural Critique* 45, no. 1 (2000): 71–108.
Showers, Kate B. *Imperial Gullies: Soil Erosion and Conservation in Lesotho.* Athens: Ohio University Press, 2005.
Stepan, Nancy. "Tropical Nature as a Way of Writing." In *Mundializacion de la ciencia y cultural national,* edited by A. Lafluente, A. Elena, and M. L. Ortega, 495–504. Madrid: Doce Calles, 1991.
Stepan, Nancy Leys. *Picturing Tropical Nature.* Ithaca, N.Y.: Cornell University Press, 2001.
Swearingen, Will D. *Moroccan Mirages: Agrarian Dreams and Deceptions, 1912–1986.* Princeton: Princeton University Press, 1987.
Tassy, Louis-François Victor. *Service forestier de l'Algérie, rapport adressé à m. le gouverneur de l'Algérie.* Paris: Typographie A. Hennuyer, 1872.
Terrier, Auguste. *Le Maroc.* Paris: Librairie Larousse, 1931.
Trottier, François. *Notes sur l'eucalyptus et subsidiairement sur la nécessité du reboisement de l'Algérie.* Alger: Typographie et Lithographie de F. Paysant, 1867.
Warnier, Auguste. *L'Algérie devant l'empereur, pour faire suite à L'Algérie devant le sénat, et à L'Algérie devant l'opinion publique.* Paris: Challamel Ainé, 1865.