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Jacob Darwin Hamblin

Alan Mikhail, *Nature and Empire in Ottoman Egypt: An Environmental History*
(New York: Cambridge University Press, 2011) ISBN 978-1107008762.

Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire* (New York: Cambridge University Press, 2011) ISBN 978-1107008311

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Introduction by Jacob Darwin Hamblin, Oregon State University

Surely there are too few environmental histories of the Middle East. With its distinctive landscapes and impressive features—the intimidating mountains of Iran, the nourishing rivers of Mesopotamia, the dangerous yet life-giving floods of the Nile, and the harsh deserts of North Africa and the Arabian Peninsula, to name just a few—it is perhaps surprising that only a few scholars have provided explicitly environmental interpretations of the region’s past events. So when Cambridge University Press published two environmental histories of the Ottoman Empire, one by **Same White** and the other by **Alan Mikhail**, as part of its “Studies in Environment and History” series, I was excited about the opportunity to invite one of the authors to participate in a roundtable. In the end, rather than choose between the two books, I invited both authors to contribute and they graciously agreed. I asked the kind roundtable participants to comment not on a single book, but on both of them together. The result is a stimulating discussion about the environmental dimensions of the Ottoman Empire and a provocative discussion of the future of scholarship on the Middle East’s environmental history.

Sam White’s *The Climate of Rebellion in the Early Modern Ottoman Empire* proposes that a climate event, the so-called “Little Ice Age,” nearly led to the collapse of the Ottoman empire. The cold temperatures in the final decade of the sixteenth century led to famine and widespread death, during a time when the imperial government already was pressing its subjects for supplies and men for its ongoing wars. White’s exploration of the ensuing revolt, the Celali Rebellion, is rooted in a climate crisis, and his analysis draws in subsequent climate challenges that frustrated the Ottomans’ attempts to recover over the next century. White’s book provides a new narrative that brings climate into human history, revealing an empire that arose under “precarious ecological circumstances” and suffered the trauma of a climate catastrophe (14).

In *Nature and Empire in Ottoman Egypt*, Alan Mikhail tells the story of Egypt’s history (from 1675 to 1820) through the management of water use and food production, and from the point of view of Egyptian peasants. He draws attention to some of the hidden dimensions of the slow shift from imperial Ottoman management of water resources to a more autonomous, centralized bureaucracy in Egypt. Although nationalist histories might argue that this move toward autonomy was a sign of greater Egyptian independence, Mikhail shows how this was not necessarily good for peasants, because it meant less access to commodities previously available under the empire. Without empire, Egyptians had to work the soil harder and give up more themselves. They had little room to maneuver and, Mikhail tells us, “a despotic form of bureaucratic government” in Egypt took over not only water, but also peasants’ lives (4).

I invited **Yaron Ayalon** to contribute to the roundtable because of his expertise on the Ottoman era, and because he is writing a book (also to be published with

Cambridge) on natural disasters in the empire. Ayalon is an assistant professor of history at Ball State University. In his work, he has argued that responses to disasters can reveal important features in the relationship between state and society, such as acceptable norms of privacy. He also has written about the different kinds of sources scholars can use, such as visitors' observations, to understand the social impacts of disasters.¹

Another commentator, **Richard W. Bulliet**, has written prodigiously on Middle East history, world history, and the history of animals. His work has been attentive to the lives of farmers and camel herders, and his early work explored the reasons for the widespread domestication of camels (including their superiority over the wheel as a mode of transport). He also has taken up the role of climate change in world history. For example, a recent book shows how an eleventh-century cooling climate led to the decline of cotton agriculture in Iran and the migration of large numbers of camel-breeding Turkish nomads to Iran, where they would play a dominant role in society for many years to come.²

Arash Khazeni is currently writing an environmental history of the turquoise trade. His past work focused on people at "on the margins" of empire. In his study of the Bakhtiyari tribe in nineteenth-century Iran, he draws heavily on the importance of physical geography to explain the ways in which state and imperial projects transformed tribal life. Khazeni notes that the Bakhtiyari participated in imperial projects but also resisted some changes to their own autonomy, as the Qajar state and British empire tried to control the environment through dams and river diversion, and to extract resources through mining and oil prospecting.³

Before turning to the first set of comments, I would like to pause here and thank all the roundtable participants for taking part. In addition, I would like to remind readers that as an open-access forum, *H-Environment Roundtable Reviews* is available to scholars and non-scholars alike, around the world, free of charge. Please circulate.

¹ Yaron Ayalon, "Famines, Earthquakes, Plagues: Natural Disasters in Ottoman Syria in the Writings of Visitors," *Journal of Ottoman Studies* 32 (2008), 223-247; Yaron Ayalon, "Ottoman Urban Privacy in Light of Disaster Recovery," *International Journal of Middle East Studies* 43 (2011), 513-528.

² Richard W. Bulliet, *The Camel and the Wheel* (Cambridge: Harvard University Press, 1975); Richard W. Bulliet, *Cotton, Climate, and Camels in Early Islamic Iran: A Moment in World History* (New York: Columbia University Press, 2011).

³ Arash Khazeni, *Tribes and Empire on the Margins of Nineteenth-century Iran* (Seattle: University of Washington Press, 2010).

Comments by Yaron Ayalon, Ball State University

Alan Mikhail's *Nature and Empire in Ottoman Egypt* and Sam White's *The Climate of Rebellion in the Early Modern Ottoman Empire* are two groundbreaking studies of the Ottoman Empire, exploring the history of the eastern Mediterranean from an environmental perspective. While environmental history has been a flourishing field of historical inquiry among European and American historians for quite some time, little work has hitherto been done in a Middle Eastern context. The two books seek to fill that void by taking up themes such as energy, wood, wind, water, labor, domestic and farm animals, agricultural production, weather, and disease to demonstrate how ecology, politics, and society were interdependent. Mikhail's book does that for eighteenth- and early nineteenth-century Egypt, while White's focuses on the sixteenth and seventeenth. Taken together, they provide a fresh narrative for over three centuries of the Empire's history.

The books offer creative, compelling arguments based on an impressive wealth and variety of sources. As such, they remind one of another legendary work of Ottoman history: Abraham Marcus's *The Middle East on the Eve of Modernity*.⁴ Published over two decades ago, Marcus's book appeared at a time when Ottoman social history was still at a nascent stage and the period between the late sixteenth and late eighteenth centuries still mostly uncovered by historians. Marcus' study sought to address a question that had bothered many historians then: did the modern period in the Middle East really begin in the nineteenth century with European intervention in the region, or was there another, internal modernity that developed before then.⁵ Marcus addressed that question in his work quite effectively, but that was not the book's greatest long-term contribution to the field of Ottoman history. Instead, Marcus's dealing with various aspects of Ottoman-urban (Aleppo, in his case) society inspired many historians to work on a broad array of topics hitherto unstudied, such as women, food, material culture, and poverty and charity. It is still an oft-quoted work in Ottoman social history.⁶ The same, one can predict, may happen with the books of Mikhail and White. While dealing with important questions that would clearly be most relevant to other environmental historians, most scholars of the Ottoman Empire will likely find the books to offer a trove of original ideas, questions, and approaches that would help them develop their own theses, without necessarily adopting an environmental approach. I believe this, in

⁴ Abraham Marcus, *The Middle East on the Eve of Modernity: Aleppo in the Eighteenth Century* (New York: Columbia University Press, 1989).

⁵ Ibid., 1-2.

⁶ See, for example: Suraiya Faruqi, *Subjects of the Sultan: Culture and Daily Life in the Ottoman Empire* (London: I.B. Tauris, 2000); Bruce Masters, *Christians and Jews in the Ottoman Arab World: the Roots of Sectarianism* (New York: Cambridge University Press, 2001); James Grehan, *Everyday Life & Consumer Culture in 18th-Century Damascus* (Seattle: University of Washington Press, 2007); Elyse Semerdjian, *"Off the Straight Path": Illicit Sex, Law, and Community in Ottoman Aleppo* (Syracuse: Syracuse University Press, 2008); Amy Singer, *Charity in Islamic Societies* (Cambridge: Cambridge University Press, 2008).

addition to pioneering environmental history in a Middle Eastern context, would prove to be the books' greatest contribution.

A few examples will show how the books' arguments could be taken even further. Both Mikhail and White emphasize the key role disease and subsistence crises played in the environmental cycle of the Empire, and hence in its political and economic history. At the frequency such crises occurred, the two studies tell us, they became almost a regular occurrence that people expected and knew how to respond to. Disasters often caused mass mortalities and displacement of populations through flight. Both authors show how large-scale migrations caused many problems for the state, from a disruption in the collection of taxes through abandoned farmland and, in the case of Egypt, water canals, that led to a decrease in agricultural production, to general social unrest.⁷ White has somewhat expanded the discussion about flight and in his book, and more so in an article that predated the book by several months, has deconstructed the historical paradigm that ties responses to plagues and other disasters to religious identity.⁸ The arguments of such authors as Dols and Panzac, who had previously written about plague in the Middle East, that Muslims were predisposed to avoid flight from plague due to religious interdictions, seem to make little sense in light of the evidence White presents.⁹ Flight from disaster areas occurred, and when it did not, there were other explanations for people's decisions to stay, such as Ottoman laws that required the full payment of taxes prior to leaving an area, and the inability of people to subsist for long without the income their lands provided.¹⁰

The understanding that there was little connection between religious identity and responses to epidemics and famines raises other important questions. These fall outside the scope of Mikhail and White's books, yet show the connection between the environmental and social that the books so well illustrate. First, were there other factors we need to consider in individual responses to natural disasters beyond obeying the law and economic factors? Recent research in the interdisciplinary field of disaster studies points to psychological effects, namely attachments, that appear to be more powerful than any economic considerations people might have had.¹¹ Human psychology is clearly an intricate question for historical societies, let alone the Ottoman one for which evidence of this sort is scant. The question, however, is pertinent here, and with fragments of evidence by local

⁷ Mikhail, 201, 214, 221-30; White, 89-91, 152-3, 189.

⁸ Sam White, "Rethinking Disease in Ottoman History," *IJMES* 42 (2010), 4:549-67.

⁹ Michael Dols, *The Black Death in the Middle East* (Princeton: Princeton University Press, 1977), 298-9; Daniel Panzac, *La peste dans l'Empire Ottoman: 1700-1850* (Leuven, Belgium: Peeters, 1985), 283-6, 300-1.

¹⁰ White, 89.

¹¹ "Attachment Theory" was developed in the 1950s and 1960s by John Bowlby to explain the effect of connections formed during childhood on one's adult life. Attachment is the leading theory nowadays in explaining responses to disasters and functioning under life-threatening conditions. See Anthony Mawson, *Mass Panic and Social Attachment: the Dynamics of Human Behavior* (Aldershot, UK: Ashgate, 2007), 236-8.

and foreign observers, it can be addressed to some degree. Furthermore, did the state's response to calamities reflect only a desire to keep its house in order, by ensuring people were not starving and rebellions were crushed or prevented altogether? These seem to have been good enough causes to act, and they fit the conclusions of some historians regarding the principle of "moral economy."¹² But there might have been other causes. Some natural occurrences, like floods, fires, and earthquakes, created an opportunity to redesign a city's landscape. In Europe from the seventeenth century, governments saw such destructive events as an opportunity to assert a new order.¹³ This happened at times in the Ottoman Empire too, for instance after the Great Fire of Istanbul of 1660. There, the Ottomans evacuated parts of the city of its Christian and Jewish residents to build an imperial mosque. Islamization for the sake of asserting authority was thus one factor guiding the state in its reactions to calamities; emphasizing the sultans' patronage was another.¹⁴

Another issue the discussion in the two books raises is the connection between behavioral patterns seen during crises, such as harsh winter, drought, famine, or an epidemic, and those one would observe normally. In other words, can we assume our conclusions for disaster situations are applicable for times of calm as well, so much so that we can extrapolate from them to Ottoman society at large? If studies about disasters in the twentieth and twenty first century are any indication, we certainly can. In the last ten years or so, sociologists and psychologists studying disasters have realized such events serve as a magnifying glass of our society's various attributes.¹⁵ If we accept that this conclusion is valid for Ottoman society too, we may also wonder whether historians have overemphasized the role of religious boundaries in Ottoman society. This is not to suggest that religious identity was not a key feature of Ottoman life. Yet if it mattered less when responding to a life-threatening situation, religion and communal affiliation might not have dictated all or even most of people's actions in ordinary times as well. Thus seeing Ottoman society solely through the prism of religious divisions and identities might cause one

¹² See, for example, Boaz Shoshan, *Popular Culture in Medieval Cairo* (New York: Cambridge University Press, 1993), 65-6.

¹³ The most notable examples for massive city replanning are the Great Fire of London of 1666 and the Lisbon earthquake of 1755. See Leo Hollis, *The Phoenix: St. Paul's Cathedral and the Men who Made Modern London* (London: Weidenfeld & Nicolson, 2008), 135-56; Jean Paul Poirier, *Le tremblement de terre de Lisbonne: 1755* (Paris: O. Jacob, 2005), 93-112.

¹⁴ Marc Baer, "The Great Fire of 1660 and the Islamization of Christian and Jewish space in Istanbul," *International Journal of Middle East Studies* 36 (2004), 2:159-81.

¹⁵ For example: *There Is No Such Thing as a Natural Disaster: Race, Class, and Hurricane Katrina* Chester Hartman and Gregory Squires eds. (New York: Routledge, 2006); *The Sociology of Katrina: Perspectives on a Modern Catastrophe* David Brunnsma et al. eds. (Lanham: Rowman & Littlefield, 2007); *Communicable Crises: Prevention, Response, and Recovery in the Global Arena* Deborah Gibbons ed. (Charlotte, NC: Information Age, 2007); Shireen Hyrapiet, *Responding to a Tsunami: a Case Study from India* (Saarbrücken, Germany: VDM Verlag, 2007); *Racing the Storm: Racial Implications and Lessons Learned from Hurricane Katrina* Hillary Potter ed. (Lanham: Lexington Books, 2007).

to miss a significant part of the picture.¹⁶ A recent study for an earlier period has shown that Muslim society was made up of various competing identities and social and commercial networks, with the religious community being only one of them, not necessarily the main one.¹⁷ Future social and environmental studies would hopefully shed more light on this question for Ottoman society.

A lesson one learns from the two books is the relevance of environmental factors to political processes, or, in other words, how lacking our understanding of political history is without thinking of human ecology. White devotes much attention to the Jelali (or Celali) rebellions in eastern Anatolia in the sixteenth and seventeenth centuries. As we learn from White's discussion, the rebellions weren't merely a series of ordinary uprisings against oppressive rulers, but rather a response to harsh climate, rising prices of food, and starvation.¹⁸ Ottoman policies in the early seventeenth century were influenced quite a bit by the need to sustain food supply to the capital and the military at the expense of the provinces on the one hand, and to crush the rebellions on the other.

Mikhail offers a fresh assessment of the 1798 French occupation of Egypt and Muhammad's (r. 1805-48) ascending to the governorship. The French imposition of quarantine, so he explains, disrupted centuries-long traditions of attending the sick and living with the dead. As plague was part of Egypt's ecosystem, which also included animals, food, humans, plants, and water, enforcing new methods of treatment that placed the sick and their homes in isolation and therefore outside that ecosystem also influenced how Egyptians interacted with other elements of the environment.¹⁹ When Muhammad 'Ali came to power several years later, he continued the exploitative policies of the French by furthering quarantine regulations and enlisting hundreds of thousands of peasants for public works far away from home, where many died. This, according to Mikhail, made Muhammad 'Ali not a reformer but rather an imperialist ruler no different from the French who preceded him.²⁰ It is through looking at peasant life, labor, water, and disease that we therefore achieve this new understanding of Muhammad 'Ali's rule. And it is through the economic importance of wood that we understand another motive – perhaps the most important one – for Muhammad 'Ali's conquest of Syria and parts of eastern Anatolia in the 1830s. Wood was a rare commodity in Egypt, but it was needed to build ships that transported merchandise in the Mediterranean. Failing to grow trees in substantial numbers in Egypt, controlling forests in Anatolia became a major incentive for the Egyptian ruler's campaign against the Ottomans.²¹

¹⁶ Boyar and Fleet have suggested just that in their recent book on Istanbul. See: Ebru Boyar and Kate Fleet, *A Social History of Ottoman Istanbul* (Cambridge: Cambridge University Press, 2010), 136.

¹⁷ Uriel Simonsohn, *A Common Justice: the Legal Allegiances of Christians and Jews under Early Islam* (Philadelphia: University of Pennsylvania Press, 2011), 5-10.

¹⁸ White, 163-225.

¹⁹ Mikhail, 210-4.

²⁰ *Ibid.*, 232-9.

²¹ *Ibid.*, 164-7.

These examples raise the question whether we could use environmental history to rewrite the biographies of other Ottoman rulers or political movements. Would new evidence about famine, disease, and food supply change our assessment of the 46 years of Süleyman the Magnificent's rule (r. 1520-66)? Or perhaps such analysis could provide better reasoning for Süleyman's father, Sultan Selim I's (r. 1512-20) decision to launch war against the Mamluks that would end with the conquest of most of the Arab world? Or maybe further environmental evidence could help us understand the rise of the Kadizadeli movement and its many adherents within the palace in the seventeenth century (an issue White refers to briefly in his book)? It seems the possibilities for such studies are endless.

I learned a lot from Mikhail and White's books. They approach the Empire's story from new perspectives: periphery as opposed to the capital, rural areas more than cities, and economic, political, and social questions as seen through the different elements that made up the environment. The books have inspired me to approach social history in new and exciting ways; and they helped me conceptualize some aspects of my forthcoming study on natural disasters in the Ottoman Empire. They are likely to be as useful for other social, political, and of course, environmental historians in the future.

Comments by Richard W. Bulliet, Columbia University

The first three decades following World War II saw American academic historians moving steadily away from themes of politics, diplomacy, and biography and toward themes of class, race, and gender. This triad of concerns produced an avalanche of innovative scholarship and forever changed the discipline of history. However, times change; and no focus of interest—except, possibly, the “Founding Fathers”—retains its power to fascinate indefinitely. The first monograph on, say, the gay sexual environment of an American city in the 1950s, or racial discrimination in an urban neighborhood in the 1960s, might have been an eye-opener. The second, interesting. But thesis advisors tend to steer their students away from well-worn themes after the tenth iteration. And as empirical studies on a particular theme accumulate and converge, the role of theorists increases, culminating the developmental curve of interest in that theme.

I believe that class, race, and gender, for all of their centrality in the historiographical thinking of so many of today’s senior historians, are now at their culmination stage. The most interesting new work being done in history these days is quite differently centered: less social and more material, less concerned with conflict and more with developmental arcs, less national and more global, less period defined and more broadly diachronic. The new emphasis is upon materiality: environment, climate, science, technology, disease and public health, cuisine and food production, animals in society and culture, with an eye in many of these areas for the *longue durée*. Typical of topics in the early stages of their development, most of these material themes are being expressed in empirical studies with as yet comparatively little focus on underlying or generalizing theories.

A growing interest in world history, both at the teaching and the research levels, is playing a role in this disciplinary change. Multiple archives, material and visual evidence, interregional and diachronic comparisons, and a distinct aversion to the grand narrative of a Western Civilization that grows to self-proclaimed and over-hyped greatness and then becomes toxic as it metastasizes into imperialism, stimulate work on topics that might have seemed foolish a generation ago. Personally, I remember in 1969 being called into the office of the Associate Director of Harvard’s Center for Middle East Studies and admonished in the strongest of terms not to write a book on camels because it would ruin my career.

Recent books by Alan Mikhail, *Nature and Empire in Ottoman Egypt: An Environmental History*,²² and Sam White, *The Climate of Rebellion in the Early Modern Ottoman Empire*,²³ both winners of significant prizes, not only highlight the field of environmental history in the Middle East region, but also mark their authors as pioneers. Mikhail and White are both active as presenters and panel organizers

²² Cambridge: Cambridge University Press, 2011.

²³ Cambridge: Cambridge University Press, 2011.

at meetings of the American Society of Environmental History. But they are almost alone. A perusal of the program of the society's 2013 conference held in Toronto reveals a near absence of panels dealing with the Middle East since the rise of Islam. Indeed, among world areas, the Islamic Middle East seems to be the least studied. This despite dramatic historical events relating to desertification, urbanization, fresh water scarcity, deforestation, climate change, etc.²⁴

This lack of activity underscores the boldness of the books by Mikhail and White, but it also raises a question. Since the study of the ancient Near East has produced, and continues to produce, scores of studies about environmental issues, why is there so little being written about the region since the Arab conquests? A look at the way Mikhail and White frame their studies suggests an answer. *Nature and Empire in Ottoman Egypt* deals with Egypt in the eighteenth century and draws the reader's attention to the changing political context of Nile irrigation in that period. Mikhail concludes:

The Egyptian experience is therefore instructive of how the transition from early modern political rule to nineteenth-century state bureaucracy affected the management of natural resources, irrigation, rural labor, disease, and public works. Much . . . was lost in this transition. Perhaps the most significant of these losses was the knowledge of the historical reality of how the environment functioned and of how it was managed for millennia.²⁵

As for White's *The Climate of Rebellion*, the dust-jacket blurb succinctly states the thesis:

This study demonstrates how imperial systems of provisioning and settlement that defined Ottoman power in the 1500s came unraveled in the face of ecological pressures and extreme cold and drought, leading to the outbreak of the destructive Celali Rebellion (1595-1610).²⁶

Both authors adroitly tied their archival findings dealing with the environment to major events in Ottoman history, the decentralization of power in the eighteenth century and the Celali rebellions at the turn of the seventeenth century. But what if those findings had not illuminated major political issues? I recall a joint seminar I once taught with an eminent political scientist specializing on the Middle East. One student presented what became his MA thesis on the high incidence of frigid weather in medieval Baghdad. My colleague asked what the impact of the climate

²⁴ The best summary of the state of Middle Eastern environmental history, including up-to-date bibliography, is Sam White's 2011 contribution to a World History Connected Forum on the Environment in World History entitled "Middle East Environmental History: Ideas from an Emerging Field," worldhistoryconnected.press.illinois.edu/8.2/index.html [retrieved August 2013]

²⁵ Alan Mikhail, *Nature and Empire*, p. 296

²⁶ Sam White, *Climate of Rebellion*.

event was on politics and the economy. When the student answered that he didn't know if there was one, he was informed that he should drop what he was doing because it was not scholarship.

Historiographically, the study of the Islamic Middle East is a generation behind most other parts of the world. Politics, diplomacy, and biography, mostly tied into broader themes of nationalism and post-colonialism, dominate the field; and class, race, and gender are still gaining steam. The materiality that is so evident in other historical sub-fields has scarcely been touched, which would not necessarily be a problem were it not for the fact that absent empirical studies from the Middle East, the broad narratives that are evolving in an effort to set these new sub-fields in a global context mostly omit the Middle East.²⁷ Where for so long the Middle East stood as the counter-narrative to the history of Europe, now China dominates the comparative field with India in close pursuit, because there is so little to read about the Arabs, Turks, and Persians.

Sadly, this recapitulates a problem with the history of the Islamic Middle East that goes back to the field's origins. The founders of Middle Eastern historical writing were trained primarily as philologists, classicists, or religionists. Not as historians. In his recent memoir *Notes on a Century: Reflections of a Middle East Historian*, Bernard Lewis evinces great pride in being Britain's first genuine historian of the Arab world, with all of his predecessors, his mentor H.A.R. Gibb included, being trained as something else.²⁸ We have been playing catch-up ever since. And ever since 9/11, if not the Iranian Revolution of 1979, a focus of interest on the religion of Islam has soaked up most of the research energy that is not being expended on nationalism, modernization, and post-colonialism. Thus the Middle East seems destined to continue as a historiographical backwater, and consequently to play only a minor role in the rising debates about the material side of world history. Unless scholars like Sam White and Alan Mikhail find able followers. One can only hope.

²⁷ A case in point: Europeanists have long considered the so-called Medieval Warm Period to be an important factor in the demographic, commercial, and political burgeoning of Europe from the eleventh to the fourteenth century. In the absence of data from the Middle East, it was unknown that Europe's Medieval Warm Period coincided with a destructive chilling of the climate of the northern Middle East between in the tenth and the twelfth centuries that resulted in agricultural collapse and demographic decline. On this see Richard W. Bulliet, *Cotton, Climate, and Camels in Early Islamic Iran: A Moment in World History*, New York: Columbia University Press, 2009, and Ronnie Ellenblum, *The Collapse of the Eastern Mediterranean: Climate Change and the Decline of the East, 950-1072*, Cambridge: Cambridge University Press, 2012.

²⁸ London: Weidenfeld & Nicolson, 2012, chapter 2.

 Comments by Arash Khazeni, Pomona College

Imperial Ecologies

Alan Mikhail's *Nature and Empire in Ottoman Egypt: An Environmental History* and Sam White's *The Climate of Rebellion in the Ottoman Empire*, both published in 2011 by Cambridge University Press, stand as milestones in the field of Near Eastern environmental history. For despite a range of innovative studies, it may be said that Ottoman historiography, similar to that of the Near East at large, still veers towards political and cultural perspectives, while environment and ecology loom in the background. To be sure, there have been previous works that could be counted as Near Eastern environmental histories – ranging from Fernand Braudel's *The Mediterranean and the Mediterranean World in the Age of Phillip II*, originally published in 1949, to Richard Bulliet's *The Camel and the Wheel* (1975) and more recent *Cotton, Climate, and Camels in Early Islamic Iran: A Moment in World History* (2009). It was only relatively recently, however, with works by J.R. McNeill, Diana Davis, Terry Burke, and the authors reviewed here that studies framed as “environmental” histories of the Middle East, the Eastern Mediterranean, and North Africa began to appear. The new monographs by Alan Mikhail and Sam White are path-breaking contributions to this still blossoming strand of literature taking an environmental turn in Near Eastern historiography. The following pages consider the contributions of the books under review by following a thread running through them both – the interactions between empires and environments.

In *Nature and Empire*, Mikhail examines “Ottoman systems of natural resource management” by chronicling the control of natural resources in the imperial province of Egypt during the long eighteenth century, circa 1675-1820. At its core, *Nature and Empire* is a tale about water and, by extension, irrigation along the Nile River and its canals, deltas, and ditches. As Mikhail eloquently puts it, this is a book that “begins . . . in Egypt's mud” (*Nature and Empire*, 7). But the story goes further to connect the ecology of Egypt and the Nile – and the peasants who worked it – to the fabric of the Ottoman Empire and its networks for the management, production, and compartment of natural resources across the Eastern Mediterranean, the Hijaz, Anatolia, and North Africa. From the grains and crops exported from Egypt to feed the empire's subjects to the timber and wood imported into Egypt from Anatolian forests to build essential irrigation canals, *Nature and Empire* traces the ecological and economic webs that bound together the Ottoman Empire and its subjects.

Nature and Empire centers on the link between water and power – “the flow of power through history” as Donald Worster put it – and in the literature on environmental history it seems closest in spirit to such works as Worster's *Rivers of Empire: Water, Aridity, and the Growth of the American West* (1992) and Richard White's *The Organic Machine: The Remaking of the Columbia River* (1995). And this is the promise of such a work as *Nature and Empire*, one that closely engages with

literature in the field of environmental history while providing new, and empirically grounded, perspectives and interpretations on the history of the Ottoman Empire, Egypt, and the early modern Near East. Based on the reading of a strikingly deep array of archival materials from Cairo and Istanbul, Mikhail convincingly argues that the Ottoman Empire in early modern Egypt was “an empire by nature” (*Nature and Empire*, 36). But the nature of this alluvial empire along the Nile and its delta underwent marked transformations over the course of the long eighteenth century, as “the early modern system of Ottoman natural resource management,” rooted in negotiation and balance between local peasantry and the Ottoman Empire, gave way to a more centralized, oppressive, and bureaucratic regime of environmental control that in essence created “another Nile” and overburdened the peasantry during the first decades of the nineteenth century (*Nature and Empire*, 2-3, 34-36). The culmination of this new imperial system of resource management arrived with the reconstruction of the Mahmudiyya Canal between the Nile and Alexandria in the early nineteenth century, a project that required the forced labor of three hundred thousand peasants, a third of whom perished while working on the canal (*Nature and Empire*, 242-290).

Whereas Mikhail approaches the question of empires and environments through the prism of irrigation, Sam White does so through the analysis of climate. In *The Climate of Rebellion*, White details the “imperial ecology” of the Ottoman Empire through an examination of the impact of the Little Ice Age on the outbreak of the Celali Rebellion in Anatolia in 1595-1610 (*Climate of Rebellion*, 17). Simply put, this is “the story of how a climate event . . . nearly brought down the Ottoman Empire” (*Climate of Rebellion*, 1). White presents a bold and lucidly written argument: During the years of its expansion, the Ottoman Empire developed an imperial ecology based on “the provisioning of resources” between the city and countryside. In the last decades of the sixteenth century, however, war and natural disasters, exacerbated by the “fierce cold of the Little Ice Age” and the longest Mediterranean drought in six centuries, resulted in famine and hardship across Anatolia, spurring the outbreak of the Celali Rebellion and bringing “the empire into an intractable crisis” that lasted over the course of the seventeenth century (*Climate of Rebellion*, 1). White goes further to suggest that these changes in the early modern Ottoman environment were connected to broader world historical trends and that “Ottoman troubles formed part of a world crisis borne of widespread ecological pressures” (*Climate of Rebellion*, 4). Building on the structure of this argument, *The Climate of Rebellion* marks a major contribution to three different but entwined strands of literature: environmental histories of the Near East, studies of the seventeenth-century crisis, and histories of climate change.

The Climate of Rebellion is a beautifully written book, its three parts framed by a compelling series of *mise en scène* on such episodes as Sultan Selim II’s efforts to rebuild his fleet following the Battle of Lepanto and the freezing of the Bosphorus in 1621 (*Climate of Rebellion*, 15-19, 123-125). See for instance the excellent discussion of the fat-tailed Karaman sheep and their place in networks of Ottoman imperial provisioning (*Climate of Rebellion*, 116-118). These narrative elements

foreground a meticulous and well structured set of arguments and interpretations, including a venture into the recent historiographical debate on Ottoman decline. Without revamping outdated Orientalist notions of decaying empires of despotic sultans and intriguing harems, White provides evidence of climate disasters, rural insecurity, turbulence, and flight that may have deprived the Ottoman Empire of over half of its population in the early seventeenth century, thus putting recent, revisionist claims regarding the lasting imperial buoyancy, flexibility, and reform of the Ottoman Empire into perspective.

It remains to be said that these two books offer the richest array of archival materials, and thus the most solid empirical base, to have yet been marshaled together in Near Eastern environmental history. These materials become the basis of innovative methodologies advanced by the authors. Mikhail's *Nature and Empire* is something of an archival tour de force. Through a close and thoughtful reading of volumes of manuscripts and correspondences in Arabic, Ottoman Turkish, and European languages found in the Egyptian National Archives in Cairo and the Ottoman Archives in Istanbul, Mikhail uncovers both local and imperial perspectives on the environment of eighteenth-century Egypt and its ties to different corners of the empire. These include a wealth of materials from the records of Islamic courts in the Egyptian countryside to petitions and imperial decrees exchanged between the Ottoman Empire and local Egyptian subjects. Mikhail's skillful treatment of these sources reveals the networks and threads that bound Egypt to lands across the Ottoman Empire, and thus adds much complexity to existing views of centers and peripheries in Ottoman history as most often seen from the vantage of the imperial capital in Istanbul (*Climate of Rebellion*, 23-31). White's *The Climate of Rebellion* draws principally from a series of records known as *mühimme defter*, literally "registers" or "notebooks of important subjects" found in the Ottoman Archives in Istanbul. These notebooks contain imperial orders, correspondences, and reports, and along with Ottoman chronicles, they provide views of imperial perspectives on climate change and rebellion in early modern Anatolia. The writings of foreign travelers and physical data on climatic events complement the material from Istanbul in what White refers to as the effort to "triangulate" the evidence brought together in the project (*Climate of Rebellion*, xii-xiii). The result is a rare climate history grounded and textured in documentary and empirical sources, and one that never loses sight of the social and political context of climate change.

Nature and Empire in Ottoman Egypt and *The Climate of Rebellion in the Ottoman Empire* are groundbreaking contributions to the field of Near Eastern history by two young scholars that are poised to go even farther. Both monographs have received prestigious book prizes from the Middle East Studies Association and have influenced new scholars in the field to adopt environmental perspectives. But there is likely to be a reaction against this environmental turn by established scholars who have staked their claims in other ways of seeing the Middle East field – which remains, after all, one of the most entrenched and stubborn abodes of political and nationalist history. Lines of critique will inevitably center on the common and by now rather tired critique that there are no people and not enough human agency in

environmental history, although just a glance at the narrative directions and biographical approaches taken in the field by Donald Worster on John Wesley Powell and John Muir, and Aaron Sachs on Alexander von Humboldt, would be enough to undermine such reactionary claims.

There is very little your designated reader can offer up by way of critique of these important and highly original monographs, and I can only suggest some minor questions that come to mind. In regard to *Nature and Empire in Ottoman Egypt*, which sets the new gold standard for histories of the peasantry in the Near East through its careful reconstruction of the physical worlds of Egyptian peasants – tracing a century of changes in their labor, management of water resources, and practices of cultivation – one wonders to what degree the extant sources possibly also account for the mental worlds of the Egyptian peasantry. In the case of *The Climate of Rebellion*, the question involves the place of pastoral nomadism and “tribalism” within the Ottoman Empire, which White suggests had already begun to ebb and settle by the mid-sixteenth century (230-232), and the association of pastoral societies with disorder (233-243). Recent works by Mark Elliot, Peter Perdue, and Resat Kesaba suggest the lasting importance of pastoralism, “tribalism,” and mobility within the very structures, fabric, economies, and customs of Eurasian tributary empires into the eighteenth and nineteenth centuries.

Nature and Empire in Ottoman Egypt and *The Climate of Rebellion in the Early Modern Ottoman Empire* both seem like the beginning of something new. As part of a burgeoning literature on world environmental history, they hold the promise of opening the field of environmental history to new geographies and directions of research – ones which hopefully will not simply follow the approaches set by classic works in American environmental history where the field had its origins. The path is set to explore different sorts of environmental histories, ones with stories that show how environments were viewed from the vantage of other world regions and cultures, and which may not conform to standard narratives of degradation and preservation on which the field has thus far been largely based: such subjects as environmental processes and conceptions of “nature” from different localities of the world; histories of flora and fauna; the production, trade, and consumption of natural objects and commodities; histories of natural and Earth sciences; and global environmental histories are just a few of the possibilities now that the ground has been broken.

Response by Alan Mikhail, Yale University

Sam White and I were very lucky to have our books come out at roughly the same time. We are now very lucky to have the attention and close reading of the three scholars in this roundtable. My sincerest thanks to all of them for their time and deep engagement with the two books and for their stimulating responses and questions. From the time Sam and I first met in the Ottoman archives in Istanbul in graduate school until our books were published in 2011, I think we knew they would come out together and also realized that this would help mark the emergence of a new kind of work in the field of Middle Eastern history. Two books on Middle East environmental history are clearly better than one.

Why did these books, and of course the work of other scholars, come out when they did? A quick foray into the historiography of the Middle East and Ottoman Empire will help to contextualize the books. When I entered graduate school in the early 2000s, the field of Middle East history had just let go of one of its major overarching conceptual themes—nationalism. Throughout the late 1980s and 1990s, understanding the formation of nation states; the way nationalism produced discourses of belonging, gender, citizenship, and so on; independence movements; education; and the like shaped much of the historiography of the Middle East and, of course, of other places as well. For historians of the early modern period, social history, as both Yaron Ayalon and Richard W. Bulliet note, dominated work on the Middle East. Mining court records and other similar sources to get at lived experiences, family structures, urban politics, and commercial relations represented much of this research. It should be said as well, again as Yaron Ayalon points out in his review, that much of this work was shadowed by the question of explaining the emergence of modernity or capitalism (though it is not always clear what these words mean in this work) in the Middle East.

A general turn toward transnational histories in the discipline of history as a whole and a more particular dissatisfaction with the violence of twentieth-century nation-states helped to push us toward other ways of thinking about the Middle East. At present, there is not a dominant consensus on how we should think about Middle Eastern history and that is, from my perspective at least, quite a good thing. There is, however, consensus that Middle East historians generally need to do a better job of making our work relevant to other fields. As Richard W. Bulliet says of new historiographic trends, “the broad narratives that are evolving in an effort to set these new sub-fields in a global context mostly omit the Middle East.” That Middle East historians should strive to make their work relevant to wider conversations in the discipline of history is of course a challenge faced by historians in various other historical fields. Nevertheless, given the political exigencies of the day and the current perceived “need” to understand the Middle East better, we historians of the Middle East do have a particularly hungry audience and should be aware of that

responsibility and opportunity. This is not exclusively or explicitly about policy making or the like. What I mean to describe is rather a more generalist intellectual interest in the history of the Middle East. We are thus in a moment in which we have scholars and others eager to learn about the Middle East and in which there is not one clear way of meeting that demand, as potentially there was a decade or so ago with nationalism or social history.

In this world in which much is up for grabs methodologically, empirically, and politically, environmental history presents one way for Middle Eastern historians to accept present (and no doubt future) challenges and expectations. Part of the general appeal of environmental history is obviously its transnational potential to move beyond political markers of space and time. And this of course speaks to the push beyond studies of the nation and appeals to our current globalizing sensibilities. The historiography of the Middle East is no different from that of other regions in reflecting these recent interests. Something that is specific, but clearly not exclusive, to the Middle East has been the role of religion in explaining complex phenomenon. Islam, we are often told, explains all. As Richard W. Bulliet nicely summarizes this state of affairs, "Ever since 9/11, if not the Iranian Revolution of 1979, a focus of interest on the religion of Islam has soaked up most of the research energy that is not being expended on nationalism, modernization, and post-colonialism." Islam—or nation—of course does not explain all.

Where does the Middle East environmental historian stand in this historiographical terrain? At the most basic level, Middle East environmental history presents itself as a different way of conceiving of the region's history beyond nation, empire, or religion. Difference is usually a necessary condition for improvement but is of course not sufficient. The most persuasive and appealing element for me in the burgeoning field of Middle East environmental history is both its move beyond dominant paradigms for understanding the history of the Middle East—not just nation or religion, but also oriental despotism or the Asian mode of production—and its deep recognition of a panoply of relationships that sustained the region for centuries, if not millennia. There is a whole past world of humans and nature (or should I just say nature?) waiting for the historian.

Still, one of the primary challenges we face is connecting our environmental interests to those other overarching themes in the historiography of the Middle East. How do we mark a move away from earlier trends, while at the same time both benefiting from their insights and making our work relevant to broader interests in the field and beyond? Works of departure often run the risk of departing too far too quickly, thereby rendering them irrelevant. They also often face resistance. As Arash Khazeni writes, "There is likely to be a reaction against this environmental turn by established scholars who have staked their claims in other ways of seeing the Middle East field – which remains, after all, one of the most entrenched and stubborn abodes of political and nationalist history." Thus, at this early stage, one of the pressing questions for Middle East environmental history is what is the relationship between environment and politics. To state the same question

historiographically, what is the relationship between environmental history and the more dominant themes of politics and religion?

First, a strategic answer. If we want historians interested in the Middle East (card-carrying members of the Middle East Studies Association and others) to pay attention to Middle East environmental history and to see its benefits for the field, we have to show them how it connects to the other more dominant ways in which the field has been understood. We have to show, in Yaron Ayalon's words "how lacking our understanding of political history is without thinking of human ecology." Connecting Middle East environmental history to other work in Middle East Studies is both a recognition of generations of incredibly outstanding scholarship and a way to make our work legible to other scholars of the Middle East. While I am fully open—and perhaps even partial—to a kind of Middle East environmental history that completely bypasses current historiographical concerns of nation and religion, I think that at this early stage of work we need to push away from these other concerns carefully, slowly, and deliberately. I think both Sam White and I were conscious of this in our books and hence, as Arash Khazeni nicely summarizes it, pitched our work within the rubric of "the interactions between empires and environments."

A second more important intellectual answer to the question of how environmental history relates to Middle East Studies is that environmental history has the potential to reconfigure political, and perhaps even religious, stories about the pasts of the Middle East. As Sam White's book shows, climate helps to explain political reform in the Ottoman Empire in the seventeenth and eighteenth centuries. I tried to show how the material realities of irrigation in the Egyptian countryside produced a certain kind of politics. Yaron Ayalon points to the role of religion in the history of disaster management and relief, a theme he expands upon in his own work. Thus, environmental history is obviously political and religious history too—though, again, I for one am fine with the possibility of it being quite removed from these concerns. At this point in the development of the field, however, making clear and concrete connections between environment and politics is important both strategically and intellectually.

This, it should be said, is all rather obvious. Recognizing the significance and trying to understand the politics of irrigation in Egypt is hardly a novel idea. Herodotus made the basic point about 2,500 years ago. Topics of such manifest and consistent importance over time are, however, often taken for granted, thereby remaining seemingly invisible to historians. But precisely because of their central importance (and additionally because they have remained outside the purview of most historians), subjects of such basic concern—irrigation in Egypt—offer up a surfeit of untapped source materials. Indeed from the ancient period until today, we are able to track various aspects of water management in the Nile Valley. Grounding our analyses in these copious sources allows us to first make the straightforward point that there are copious sources for a reason—irrigation was hugely important—and

then to do the harder work of showing empirically the intricacies of various aspects of the historical processes involved in such phenomena.

The issue of sources is clearly important in thinking about the present and future of Middle East environmental history. To state it clearly against notions to the contrary—there are lots of sources on a diverse range of environmental topics. Sam White's work shows this, as does the research of all the contributors to this roundtable and that of scholars like Diana K. Davis, Jennifer L. Derr, George R. Trumbull IV, and numerous others. We have lots of specific empirical stories to tell. And we should tell them. Connecting our many particular environmental stories over the *longue durée* (longer than most other regions) to broader conceptual themes, geographies, and analytical frameworks allows us to understand phenomena such as natural resource management, climate change, disaster relief, technology, environmental labor, air pollution, and the degradation of certain environments, to name only the most obvious. The question of sources also brings us back to the present pressing need of Middle East history to demonstrate its relevance and significance by speaking to fields beyond. Environmental history is one of the most important, and dare I say obvious, ways of doing this.

How might this work continue to be done moving forward? The ground may now have been broken, as Arash Khazeni writes, but the field is large and waiting for its many farmers. As Khazeni also mentions in his review, and as his own work so deftly shows, pastoralism of various kinds is one of the fruitful arenas in which to think about Middle East environmental history. Central to the history of the region in various periods, pastoralism will thus clearly be an essential area for future work. As Khazeni also suggests, we have yet to explore "the mental worlds" of rural peoples and their opinions, fears, ideas, and feelings about the natural world. Thus, cultural and intellectual histories of ideas about nature largely remain to be written, and disaster studies, as Yaron Ayalon directs, is clearly one of the ways to do this. Massive public works projects abound in the history of the Middle East. These were mostly undertaken in the last two centuries, but there are many earlier examples as well. Because of the large amount of source material these enormous infrastructural manipulation projects produced, they are ripe for the picking. Oil has received some attention from an environmental perspective by scholars like Toby Craig Jones, Timothy Mitchell, and Arash Khazeni. For obvious reasons, more work will surely be done on this subject in the future as well. Plants and animals have their histories too, and these should be written. Within the realms of Islamic science and medicine, many topics with environmental implications remain underexplored: zoology, civil engineering, epidemiology, veterinary medicine, and hydrology, for example. Literary representations in a range of traditions of the Middle East also have much to say about nature. Environmentalisms of various kinds deserve attention too. The list could obviously go on.

The most important point to repeat is that we need particular stories to help us to make new synthetic generalizations and to develop new analytical frameworks within the field of Middle East Studies that can then work to connect the field to

other disciplines, geographies, and conceptual concerns. Encouragingly, many of these particular stories are now being written by graduate students and other young and established scholars. No doubt we will see much new work over the next few years and decades that engage Middle East environmental history in exciting and novel ways that push Middle East Studies, environmental history, the history of science and medicine, disaster studies, historical ecology, and myriad other fields in new directions. If Arash Khazeni is right that our books “seem like the beginning of something new,” hopefully they will soon seem rather old and dated. Many books are, after all, clearly better than two.

Response by Sam White, Ohio State University

I would like to thank the reviewers for their gracious and thought-provoking comments. Their reviews raise a number of important questions for both environmental history and the history of the Middle East, three of which I would like to consider more closely here: First, will environmental histories of the region have to be histories of change, particularly political change? Second, can histories of environmental change and disaster uncover more about the psychological reactions and experiences of ordinary people in the Middle East? And third, where might the nascent field of Middle East environmental history be headed in the coming years?

On the first topic, Richard Bulliet has asked quite rightly, would either of the works reviewed here would have captured the same attention without their treatment of political events? Could we write histories of environmental change without political change? I would venture that the answer to the first question is probably no. Publication bias in favor of positive results is not limited to environmental history, and historians likely have an easier time of it than researchers in the sciences. Bold new finds get headlines; rejected hypotheses rarely do. However, the situation for environmental history—particularly the history of climate change and natural disasters—has been changing in recent years. The answer to the second question may well now be yes.

Ironically, I first began research in Middle East environmental history expecting to find more continuity than change. The project started by trying to test long-held notions that the region had undergone some sort of long-term desiccation and degradation under the Turks. It was only the chance discovery of new Mediterranean climate research that led me to focus on the Little Ice Age. Even then, I might not have looked into the matter more closely had it not been for the glaring overlap between years of cold and drought and major upheavals in the empire. I assumed that there wouldn't be any written evidence about these events unless they were connected to political events. I also assumed that what made climate change interesting was its historical impacts.

Now I am not so sure about either of those assumptions. Contemporary Ottoman and European sources turned out to provide a surprising wealth of information about climate, even when it had little directly to do with political affairs. We tend to forget just how central weather was to preindustrial societies. There was little chance it would have been overlooked in any case.

Moreover, there is more to the equation of climate history (or any environmental history) than just natural changes causing human impacts. When I began *Climate of Rebellion*, I was concerned to prove first and foremost that the Little Ice Age was

real and that it mattered—that we couldn't really understand major events in Ottoman history without it. In a way this reflected the tone of climate change research at the time: to prove that global warming was real and would have serious consequences. Now both points have more or less been conceded. I no longer (or rarely) get the "climate determinist" accusations I used to. And global warming denialism is retreating to the extremist fringe. This has opened the way for those interested in climate change, past or present, to begin addressing some more interesting questions. We can shift our focus away from cautionary tales of environmental disaster and start talking more seriously about issues of adaptation and resilience. The world is going to warm considerably now, even in the most optimistic mitigation scenarios. There could be more to learn from past states or societies that managed through environmental change without any of the dramatic events that usually constitute history.

Yet whether or not environmental change creates political and social change, historians need to address the same questions: *why* and *how*. The trouble with archaeologists or their popularizers propounding scenarios of either collapse or adaptation in remote or ancient societies is not necessarily that their scenarios are wrong, but that they often tell us very little. We get mere correlation, not real understanding. The advantage of written history is that we can often learn much more about the ways that states and societies cope (or not) with change.

This discussion raises a related issue brought up by Arash Khazeni, whether *Climate of Rebellion* takes an overly negative view of the migration of pastoral tribes into Anatolia and Syria in the wake of the great drought and Celali Rebellion. Adopting the tribes' perspective, the inroads of pastoralism could be told as a story of adaptation as well. Admittedly, I have told it mainly as a story of disruption because my evidence came from the center. From the state's perspective the loss of agricultural village land to grazing represented a loss of resources, taxation, and "legible" subjects and territory. When I tried to turn this perspective inside out, as I did at the end of my chapter on tribes, I was first drawn to the perspective of the sheep instead, savoring their moment of triumph, as it were. But again, I have to confess the issue is largely one of evidence: The sources and studies that would give real insight into the experience of pastoralists—their own perspective on events—could be so scant that I often felt I had a better grasp on the lives of their companion quadrupeds. Besides, the quadrupeds were far more numerous and ecologically consequential.

A second set of questions, raised by Yaron Ayalon, relates to psychological reactions to and cultural experiences of the natural disasters related in my book and Alan's. Can we learn more about the mental world of ordinary Ottomans during these crises? Did they develop ways of coping with the uncertainty and stress? Can their actions in these cases tell us something more profound about Ottoman culture? These are excellent questions to pose, but not easy to answer.

The real obstacle remains the lack of good source material. Unlike the abundant

pamphlet literature on natural disasters from early modern Europe, Ottomans left few firsthand accounts of their experiences. Foreign travelers produced colorful accounts of some episodes, but theirs remains an outsider's perspective, often to be taken with a grain of salt. The picture gleaned from official records is often informative but rarely offers direct insights into culture or *mentalité*. Closer analysis of fiscal and legal records will probably clarify our picture over time. Certain tax records, for instance, may offer a better sense of peasant migration in response to disasters. Since the publication of *Climate of Rebellion*, a study of probate inventories found that economic inequality rose in years following droughts, and another has examined the policies of pious foundations (*wakıfs*) during the natural disasters of the 17th century.²⁹ Another possibility lies in interpreting personal experiences from political and religious reactions, as in Marc Baer's study of the great fire of 1660 in Istanbul, which Ayalon mentions. A more substantial breakthrough on the topic may have to await the discovery and investigation of some more revealing evidence (which I hope is what the reviewer has in mind for his next project). In other cases, we may have to work backwards from better documented episodes in the 19th century.

There is no doubt that both historical and contemporary disaster studies could shed more light on these questions as well. As Ayalon points out, I've argued against Islamic exceptionalism in understanding Ottoman experiences of disaster. Nevertheless, there should still be some hesitation before extrapolating from present disasters to the past, from modern to premodern, or European to Middle Eastern. Past authors overstated Muslim fatalism in the face of plague, for instance, but it remains an open question just how much religion did play a role in perceptions of and reactions to disease in the Ottoman Empire. The challenge here, as in so much of Ottoman history, apparently lies in striking the right balance between regional particularities and common experiences across the early modern world. A comparative approach could prove particularly helpful in this respect. At the least, the Middle East needs more prominence in global disaster studies, particularly earthquake, fire, and famine.

The third issue, posed in one form or another by all the reviewers, is the future of Middle East environmental history. It is always flattering to hear one's work described as "ground-breaking," but breaking ground is sometimes the easiest part. My own research had the inestimable advantages of being the first in a while to pose some big questions about a large region over a long period of time. I could frame the questions how I wanted; and to answer these big questions I could cream off the richest sources from the wealth of Ottoman archives and chronicles. Often the tedious work had already been done for me in patient detailed local studies of taxes,

²⁹ Metin Coşgel and Boğaç Ergene, "Inequality of Wealth in the Ottoman Empire: War, Weather, and Long-Term Trends in Eighteenth-Century Kastamonu," *Journal of Economic History* 72 (2012): 308–31; Kayhan Orbay, "Financial Development of the Waqfs in Konya and the Agricultural Economy in the Central Anatolia (Late Sixteenth-Early Seventeenth Centuries)," *Journal of the Economic and Social History of the Orient* 55 (2012): 74–116.

land use, and population. What had been lacking was a wider perspective, a sense of imagination, and some crucial data from the natural sciences to pull it all together. It is remarkable how quickly the pieces of my story fell into place once the project was underway. I am still stunned at my good fortune.

The next projects in Middle East environmental history will face new opportunities and challenges. Future work will likely become more localized or thematically specialized; and more, I suspect, will focus on the modern period. As the field specializes, researchers will have to work harder not to lose sight of the big picture—of wider comparisons and perspectives stretching across the region and beyond. Moreover, as the scientific literature expands, historians will struggle more to keep up with the latest work and to communicate it to a wider audience. For instance, new high-resolution lake sediment analysis and tree-ring isotope measurements already offer far better climate records than were available when I wrote *Climate of Rebellion*.³⁰ (Lucky for me, the results only confirm my thesis.) Interdisciplinarity will prove especially burdensome in a region that already presents such obstacles of languages and paleography. The solutions to these challenges could come from some combination of collaboration with scientists and better use of digital history.

I welcome Bulliet's judgment that history has taken a material turn. However, I also share his concern that Middle East studies could prove the exception. The political volatility of the region has been both a blessing and a curse for the field. It undeniably raises its profile, gets students into our classes, and attracts the welcome attention of publishers. But this attention comes at a cost. It drives a popular fixation on contemporary politics, and too often, a presentism and politicization of scholarship. It can take some effort to look past the fog of identity politics, sectarianism, and conflict and recall that the Middle East has a real history just like any other region. It can take even more effort to recall that most of that history consisted of humans and their animals dealing with basic questions of staying alive.

Yet there are solid practical and even ideological reasons I would expect new research to continue into the field. Above all, there is just too much good work to be done. Speaking only from the Ottoman archives, there are vast unexploited materials on topics ranging from forestry to irrigation projects to disease and public health to agriculture, all ranging from the sixteenth through nineteenth centuries (and perhaps some brave soul will even try to push these histories back into the 14th

³⁰ Neil Roberts et al., "Palaeolimnological Evidence for an East–West Climate See-Saw in the Mediterranean Since AD 900," *Global and Planetary Change* 84–85 (2012): 23–34; David Kaniewski, Elise Van Campo, and Harvey Weiss, "Drought Is a Recurring Challenge in the Middle East," *Proceedings of the National Academy of Sciences* 109 (2012): 3862–67; Piero Lionello, ed., *The Climate of the Mediterranean Region: From the Past to the Future* (London: Elsevier, 2012); Ingo Heinrich et al., "Winter-to-Spring Temperature Dynamics in Turkey Derived from Tree Rings Since AD 1125," *Climate Dynamics* 41 (2013): 1685–1701; Jessie Woodbridge and Neil Roberts, "Late Holocene Climate of the Eastern Mediterranean Inferred from Diatom Analysis of Annually-Laminated Lake Sediments," *Quaternary Science Reviews* 30 (2011): 3381–92.

and 15th centuries). I know of several dissertations already planned or underway on these topics, and I rate their chances of success far higher than another work on Middle East politics, gender, or identity. Moreover, after so much disillusioning discussion of partisan, national, and sectarian differences, there is something refreshing and important about an environmental perspective: one that can remind us that beneath all the divisions there is still a common human species dealing with the same region and its opportunities and challenges.

About the Contributors

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Arash Khazeni is Assistant Professor of History at Pomona College and author of *Sky Blue Stone: The Turquoise Trade in World History* (forthcoming from University of California Press), and *Tribes and Empire on the Margins of Nineteenth-Century Iran* (Washington, 2010).

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