

A Flat Past? History, Environment, Topography, and Medicine

Abstract

This article uses topography to explore connections between environmental and medical perspectives in France between the eighteenth and twentieth centuries. Drawing on examples from rural public hygiene, it addresses how physical and human geography in rural environments affected health and medicine, raising questions about how the topography of a landscape influenced medical responses to the environment. Rather than returning to the idea of the environment as a constraint on possible paths in History, it re-examines the health connotations of the French countryside before turning to the lesser-known terrain of how a locale's topography informed efforts to regulate the relationship between medicine, society, and nature. The article argues that greater sensitivity to how people were influenced by the nature of local topographies helps historians think in different ways about embodied local geographies and their role in medicine.

[Cet article se sert de la topographie pour révéler les liens parmi les perspectives environnementales et médicales en France du XVIIIe siècle au XXe siècle. En analysant quelques études de cas tirées du milieu de l'hygiène publique dans les zones rurales, nous explorons comment la géographie physique ainsi qu'humaine des milieux ruraux a soulevé une considération de comment la topographie d'un paysage peut influencer des réponses médicales à l'environnement. Au lieu de suggérer un retour à l'idée que l'environnement entrave l'évolution historique d'une communauté, nous cherchons à reconsidérer les connotations médicales associées au paysage français avant d'explorer un champ de recherche moins connu, en considérant comment la topographie d'une localité donnée peut guider les efforts pour réglementer la relation entre la santé, la société et la nature. Cet article soutient qu'une étude approfondie de comment les gens ont été influencés par leur milieu

topographique peut stimuler une nouvelle approche à l'expérience incorporée d'une géographie locale et son influence sur la médecine.]

Writing in the *American Historical Review* in 2002, Ted Steinberg noted how 'for the vast majority of the [history] profession, nature is little more than a pretty scene or, at most, a preface to the more important social and political story that is about to unfold' (799). Stephen Mosley echoed these concerns four years later in the *Journal of Social History*: 'very few social historians have made the effort to... [recognize] the environment as "a critical factor affecting human agency"' (2006, 924). At the time when Steinberg and Mosley were writing only a small number of European scholars were working explicitly on environmental history. A decade later the visibility of the field in Europe has grown considerably. As environmental issues and the implications of the Anthropocene moved up the political agenda, a range of historians became more and more attuned to the need for an environmentally or ecologically minded approach. The result has been a fuller sense of the environmental and social costs of humans' witting (and unwitting) interactions with the biosphere and ecosystems over the last four hundred years.

Yet, notwithstanding calls from the mid-1990s for more attention to be paid to the human body within environmental history, assumptions that human health in the past was somehow less ecological than issues facing the nonhuman world still need to be challenged (Sellers 2018; Lord Smail et al 2014). As Mitman, Murphy, and Sellers observe in their introduction to a special issue of *Osiris* in 2004, historians have a 'long tradition of chopping "health" and "environment" into distinct and separate realms of knowledge and practice' (2), despite a wide range of writing dating back to Hippocrates that connects disease to environmental conditions. Even taking into account growing scholarly interest in environmental hazards and in environmental justice, this lacuna remains remarkable given

that, in Christopher Sellers's words, 'more environmentally minded inquiry can reshape our understanding' in imaginative ways to reveal the historical entanglements between health, corporality, and the nonhuman world (6). Thinking about the environmental and the medical as interlinked not only reflects an important strand of European medical thought that re-emerged in the late-seventeenth century to connect disease and environment, but also allows us to connect the three main themes that John McNeill sees as the key features of environmental history—material and human interactions with nature, political and policy-related efforts to regulate the relationship between society and nature, and how humans represent relationships between society and nature (2010, 347–48).

This article speaks to the lacuna in environmental and medical histories. It is not the intention here to re-examine the emergence of medical geography as a discipline. Neither does it re-explore the familiar terrain of medical paradigms grounded in Hippocratic theories of bad air, water and places in a French context. Nor is the aim to offer empirical findings. Instead, in this positioning article, I examine the value of topography as an analytical tool to explore the inter-connections between environmental and medical perspectives. As an analytical tool, topography encompasses more than landscape: it draws attention to the particularism of a locale or region and those geomorphological features often overlooked by employing terms such as 'environment' or 'landscape' to get at the types of bioregional histories Dan Flores called for (1994). Drawn from geoscience and mapping, and first employed in Europe in the late-eighteenth century, topography is an expansive term that relates to the shape and features of the land. It covers the local detail of an area, including relief but also natural (geomorphological) and artificial features, as well as local history, customs, identities, and political boundaries. Topography allow us to think about how perspectives on health and the environment were never 'placeless' but bounded by the shape and features of the land.

Whereas an urban focus often conceals the varied topographies that acted upon environmental and medical knowledge and practices, with this topographical focus, I use evidence from the rural environment to explore how physical and human geography affected health and medicine within a landscape-level approach familiar to recent work on ecosystems (Moore et al. 2009, 22). In doing so, I raise conceptual questions about how the topography of a landscape influenced and constrained medical responses to the environmental problems facing communities. After all, as Linda Nash explains in *Inescapable Ecologies*, the local landscape was ‘always active, contingent, and relevant to the bodies that resided there’ (48). Rather than suggesting a return to the idea that the environment was a constraint on possible paths in History—*l’histoire immobile*—in the first part of the article I review the key historiographical trends in environmental history and the opportunities that it offers, given that European and Francophone scholars have come later to the subfield. In the second part of the article, I engage with the strand in environmental history that focuses on representation to re-examine the health connotations associated with the French countryside as a necessary step to understanding the lesser-known terrain of how a locale’s topography informed efforts to regulate the relationship between medicine, society, and nature. In the final part of the article, I draw my examples from rural public hygiene between the late-eighteenth and mid-twentieth century to explore the two further strands in environmental history—regulation and materiality—from a different perspective. I argue that more critical sensitivity to how contemporaries considered and were influenced by the nature of local topographies helps us think in different ways about embodied local geographies and their role in medicine. Ultimately, the topography of an area needs to be viewed as more than a static backdrop for the connections between the environmental and the medical, and the decisions that communities made.

Writing Environmental History

Environmental history is no longer new. Grounded in moral concerns and ecological activism, it emerged as a defined area of scholarship in the United States in the 1970s (White 1990; Cronon 1992; McNeill 2003). For Donald Worster (1988), one of the subfield's leading early proponents, environmental history blurred disciplinary boundaries: its focus on the role and place of nature in human life offered a way to examine how environmental change and human action were interlinked. Early work connected history to environmentalism, explored the idea of the wilderness, and examined the degradation of nature through human action. By the 1990s, environmental history had become a convenient umbrella for a diverse range of work, much of which embraced interdisciplinary approaches. The 2000s saw an expansion into non-U.S. areas, transnational and comparative studies, and an explosion in the diversity of the subfield. New terms entered the field, such as 'resilience' and 'tipping point', while the natural world acquired more agency as scholars engaged with Actor-Network Theory. Greater attention turned to the relationship between the environment and human health to highlight the troubled relationships humans formulated with nature in the face of shifting disease theories (Mitman 2005; Sellers 2018). As environmental historians struggled to define the field, surveys increasingly made connections to the 'copiously geographically aware work' of the Annales school to chart a heritage that dated back to the 1950s (McNeill 2010, 348). In tracing the origins of environmental history, North American scholars point to the significance of Fernand Braudel's study of the Mediterranean world as an inspiration for later scholars (Cronon 1992; McNeill 2003, 14; McNeill 2010, 348–49).

In some sense, this heritage was misjudged. The Annales school pioneered new geographical approaches and temporal scales, and emphasized the relationship between landscape and human society, but Braudel failed to show the environment in motion (Plack 2010, 290; McNeill 2003). Braudel's interest in the environment was a preface to social and

political forces that provided the drama, while Lucien Febvre critiqued those who placed too much weight on climate or soil in shaping culture. Notwithstanding Febvre and Le Roy Ladurie's emphasis on geography and climate as an element of history, others in the Annales school had 'little interest in human-induced changes to the natural world' (McNeill 2010, 349). Rather than a rich pedigree linked to the Annales, interest in environmental history was more muted in French studies. When French historians and historical geographers examined nature and the environment, they focused on a populated or cultivated landscape. They were influenced by other national and scholarly traditions, the 'possibilism' that characterized French academic geography in the early to mid-twentieth century, and different 'epistemological concerns' that were less focused on ethical or moral imperatives (Ford 2007). This is not to deny an important strand of scholarship on forest history where the Annales school's influence remained important. Nor to overlook studies on rural ways of life or the ecologically minded work encouraged by Georges Bertrand. In large part, however, until the 1990s, Francophone scholars perceived the history of the environment to be about climate, epidemics, natural disasters, land use, and pollution (Corvol 1987; Sahlins 1994; McPhee 1999; Winiwarter et al. 2004).

Although first used by French geographers in 1942, the term 'environnement' did not come into common usage in France until the 1980s—it was only in the 1990s that Francophone scholars explicitly began to examine the history of the environment as part of a wider European trend (Ford 2007, 129). This shift was evident in regional and rural history, where studies began to pay more conspicuous attention to rivers and water systems. As Geneviève Massard-Guilbaud has noted, it was equally visible in research on natural catastrophes, climate history, and historical ecology associated with the Programme Interdisciplinaire de Recherches sur l'Environnement (Winiwarter et al. 2004, 513–14; Beck and Delort 1993). New directions in environmental history and in science and technology

studies presented scholars working on the Francophone world with rich opportunities, such as the impact of pests and biological invasions, along with notions of resilience and adaptation as ways of understanding responses to ecological collapse or climate change (McNeill 2003/2010; Mosley 2006). In the wake of important work on colonial natural resource extraction by Richard Grove (1995), French colonial empires presented fertile ground for investigation, as apparent in Diana Davis's work on nature and Algerian colonization (2007). With urban environmental history attracting greater attention, studies examined industrial pollution and social conflict, as well as efforts to eliminate waste from cities (Schott, Luckin and Massard-Guilbaud 2005; Locher and Quenet 2009; Massard-Guilbaud and Mosley 2011). If Caroline Ford's work rethought the chronology of the rise of environmentalism in France to locate it in the nineteenth and early-twentieth century, attention focused on the post-war period as seen in important studies on environmentalism and on French rivers which revealed the connections between the material and rhetorical links between ecological and technological systems (Ford 2016; Bess 2003; Pritchard 2011). A further important strand of research looked at environmental inequalities to trace industrial modernity and exposure to pollutants (Fressoz 2012).

The expansion of interest in the environment among Francophone scholars since the 2000s has resulted in a more buoyant field of inquiry, with such scholarship drawing attention to the materiality of the environment and its influence social behaviour. As Isabelle Backouche shows in *La trace du fleuve* (2000), the Seine was a water supply, a waste disposal site, a locale for civic projects, a crowded commercial space, and a place to live. Yet, aside from this attention to materiality and social practice, what is often neglected is the shape and features of the land and how they influence medical attitudes to, and interactions with, the environment. Nor has work always considered how local customs and practices in the past derive from understanding and everyday experiences of a locale's natural features.

Environment and History: Landscape, Meaning and Health

Though ‘geography [has] mattered’ since the Age of Reason, the physical and artificial features or topography of a region or locale cannot be separated from perception (Withers 2007, 6). How writers, painters, cartographers, and a wide range of commentators imagined European landscapes has, unsurprisingly, shaped historical geographers and cultural historians’ interest in place. Influenced by New Cultural History and ‘the spatial turn,’ they became fascinated with how environments were viewed, with the myths and memories invested in landscapes, and with their symbolic power. How humans shaped their environments, and vice versa, played a significant role in the construction of European national and cultural identities, especially in the period after the French Revolution. As the French geographer Paul Vidal de la Blache recognized in his *Tableau de la Géographie de la France*, ‘il est fort difficile de démêler l’histoire d’un peuple du territoire qu’il habite’ ([1903] 1979, 8). Although distinctive regional identities were fashioned, such as in Brittany or the Languedoc, the framing of France’s forests, rivers, mountains, and coastlines through a national cultural identity reveals the connections made between land and tradition, place and identity, scenery and belonging (Nora and Kritzman 1996–1998). Such framing offered a means through which individuals and groups experienced the environment intellectually, aesthetically, and emotionally (Corbin 1998). Embedded within these aesthetic and emotional representations were ideas of health, rejuvenation, and degeneration as conceptions of disease were deeply intertwined with how landscapes were understood.

Beyond the practical purpose of urban filth—keeping animals in cities fed families, while bodily waste provided agricultural fertilizer—filth, odour, infection, and pests from flies to pigs also had a metaphorical purpose. As we know from Alain Corbin’s influential *Le miasme et la jonquille* (1982) and David Barnes’ *The Great Stink of Paris* (2006), the perception of French cities as unhealthy allowed for reform. However, it was in the French

landscape and soil that aesthetic and sensory perceptions combined visibly with positive notions of health, from the Alps and Pyrenees to the river valleys of the Rhône and Loire. Since the time of the Greeks, the topography of a landscape and its climate, fauna or flora, sources of water, and ways of life have been woven into spatial narratives of health. The resulting connections created what the American historian of medicine Charles Rosenberg refers to as an ‘epidemiology of place’ (2012, 664). However, they also informed conceptions of a healthy French landscape, which were often generalized as notions of bodily health were tied up with environmental preconceptions. The emergence of a range of medical and scientific subfields after 1750 reinforced connections between health and the French landscape. The growth of a new science of medical meteorology, the rise of medical geography and natural history in the eighteenth century, and the environmental determinism of the mid-nineteenth-century public hygiene movement all contributed to a sense that some landscapes were healthy, whereas others could be rendered healthy through intervention, as medical practitioners and state officials endeavoured to assert intellectual and physical control over metropolitan and colonial territories (Grove 1995; Ford 2016; Spray 2000).

These multiple and overlapping areas of investigation combined with a growing fascination with a range of French landscapes at home and abroad. This fascination was aided by rising interest in ‘the local’ in response to empires of trade and colonial expansion, as well as by the growth of cartography, the work of amateur naturalists, the institutionalization of Geography, the collection of statistics by state bureaucracies, the growth of tourism, and by the formation of preservation and conservation associations, such as the Club alpin français (Valenčius 2000, 12). As post-Revolutionary commentators sought to define France geographically, they invested symbolic and perceptual meanings in the French countryside and soil, imbuing it with rejuvenating characteristics that were Romantic, but also physically and mentally healthy for the populace. Ideas about a harmonious and healthy countryside

found expression in a range of novels, popular writing, and campaigns to preserve the countryside. Writers imagined the French countryside as harmonious with Nature; ‘a medicine for the soul suffering from the effects of weariness, doubt, and the pressures of an increasingly urbanized society’ (James 1981, 153). As the city and the country became differentiated landscapes in the popular imagination, and as critiques of modern urban living gained force, increasing emphasis was placed on the importance of rurality in relation to physical, mental, and moral health. Such connections continued into the twentieth century: for instance, traditionalists associated with Vichy spoke about the redemptive, almost spiritual properties of French soil. As in other European states, French writers highlighted how bringing the French into contact with the land would lead to the country’s moral and physical renewal (Pearson 2006; Ford 2016).

Specific regions and their topography acquired particular rejuvenating properties. *Winter and Spring on the Shores of the Mediterranean* (1861), by the English doctor James Henry Bennet, framed the Riviera as beneficial for health and recuperation, stimulating health tourism. Spas from Guadeloupe to Tunisia were associated with healthy regions, and intimately connected wellbeing with the natural world (Lombard 1877-1880; Jennings 2006). Perceptions of seemingly unspoilt landscapes contained associations with ideas of health and rejuvenation: commentators in 1948 could represent the Camargue’s wetlands as a ‘restful wilderness,’ and writers in the 1960s framed the region in terms of its possibilities for ‘physical and moral regeneration, of which modern humanity has more and more need’ (quoted in Pearson 2009, 480, 481). More widely, forests became associated in French thinking with rejuvenation and the image of the Garden of Eden—a view that informed the state supervision of forests from the late seventeenth century (Ford 2016). We can see this in imaginative and political responses to Fontainebleau, not only in Gustave Flaubert’s

L'éducation sentimentale (1869), but also in writings that constructed Fontainebleau as a restorative haven from modern industrial life (Green 1990).

This construction of the French countryside as healthy and rejuvenating was not the whole story, however. As cultural geographer Doreen Massey suggests, there was a pluralism of locations within generalized conceptions of place (2005, 36–47). If all landscapes were conceived of as living organisms, not all topographies were viewed as healthy by medical practitioners or those living there. Industrial sites not only altered and scarred the landscape—as Émile Zola captured in terms of mining in *Germinal* (1885)—but also rendered them unhealthy. Swamps or damp regions were associated with dangerous miasmas and were the subject of localist drainage schemes to prevent disease. Treeless landscapes or landscapes that appeared to have suffered from deforestation were felt by the scientific community to exert a powerful negative influence on temperature, rainfall, air quality, and soil fertility, and became linked with deterioration and disease just as much as the built environment (Pincetl 1993, 82). Nor were such ideas limited to metropolitan France—they influenced French colonial attitudes in North Africa, Madagascar, and West Africa. Indeed, perceptions of treeless landscapes and their connections with degeneration shaped French views of Algeria, Morocco, and Tunisia. These ideas reveal ingrained colonial assumptions that led to a misreading of the African landscape, which informed colonial administrators and the scientific community's support for landscape protection and reforestation (Fairhead and Leach 1996; Davis 2004; Ford 2008, 191–94).

Although geographers are aware that decision-makers base their decisions on their perception of the environment and not as the environment actually is, the political, cultural, or medical discourses attached to the idea of a healthy French countryside could act as barriers (Hobbs and Salter 2006). If, as Corbin shows (1982), the French countryside was rendered pure in the imagination by its associations with clean air, such air could conceal a

range of pollutants and sanitary problems. It is here that we need to start thinking about topography and materiality. As David Blackbourn asked in 1999, ‘what about *real* geographies?’ (quoted in Ford 2007, 125).

Space and History: Topographical Thinking

As Phil Hubbard explained in 2005, ‘the key question about space and place is not what they are, but what they do’ (47). Landscapes are more than hybrids of culture and nature: they are material spaces connected to regional ecosystems where the human and nonhuman interact. Although historians have examined questions of class, gender, and race as mechanisms for interrogating inequalities of power, we need to remember that ‘they also literally take place, occurring in landscapes with their own peculiar ecological attributes’ (Steinberg 2002, 802). Even with the spatial turn, the topography of a region or locale has seldom been discussed. In the final part of this article, I draw on examples from rural public hygiene to interrogate how the ‘literal’ nature of a landscape could guide or constrain community behaviour and shape environmental responses to health needs.

From the middle of the eighteenth century, a range of experts from physicians and public hygiene officials to engineers and medical geographers, as well as colonial officials and government bodies, were attuned to regional and local topographies in their thinking about public hygiene and epidemics. They related these topographies to the ‘production of landscapes of exposure’ as until the mid-nineteenth century environmentalist thinking was orthodox thinking (Mitman, Murphy, and Sellers 2004, 7). In their efforts to improve health and sanitation, they asserted their authority over manipulating the relationship between human beings and their surroundings; a belief evident in the biogeography of Georges-Louis Leclerc, the Comte de Buffon, and his idea that environmental controls could reverse

degeneration (Buffon 1749). Many involved in rural public hygiene and the control of epidemics had faith in the possibility of altering an environment's salubrity in geographically and ecologically defined ways that were firmly rooted in an understanding of the natural and artificial physical features of an area (Riley 1987). We can see these beliefs in action in the requests that the Société Royale de Médecine made to its members after 1778 to collect material for a medical topography of France. By 1789, these requests had produced 226 topographical and medical descriptions covering large sections of France (Société Royale de Médecine 1789). These beliefs were equally prominent in environmental approaches to epidemic disease in the local dossiers produced by medical practitioners and engineers for the Water Engineering Department of the Ministère de l'Agriculture (Goubert 1989, 192). Thinking about how topographical concerns feature in writing about health and the environment, in descriptions of local sanitation or epidemics, and in regional or local decision-making, offers ways into considering how the shape and features of a region or locale helped structure efforts to improve an environment's salubrity and everyday experiences of health, medicine, and environmental hazards.

In response to a critique about scholars being better at explaining what people in the past thought about particular landscapes than what the lived experience of a landscape was, Chris Pearson argues that we need to treat landscapes as hybrids, the 'outcomes of human-nonhuman interactions' (2009, 484). To do this, Pearson draws on Bruno Latour's work, chiefly *Reassembling the Social* (2005), with its emphasis on a network of actors, some human, some not, and how natural forces or technologies exert an influence. Latour's 'democratization' of who and what can act collapses the qualitative difference between the human and the nonhuman to emphasize the connectedness of *any thing* that made a difference to other actors. Climate, animals, machines, microbes, etc. are not simply a backdrop for human action, but agents that 'might authorize, allow, afford, encourage, permit, suggest,

influence, block, render possible, forbid, and so on' (72). Topography equally did not lie behind: the shape and features of the land are part of a constellation of relationships between human and nonhuman agents that have long influenced health and medicine.

We can see the role of topography by examining its effects on public-hygiene infrastructures between the eighteenth century and early twentieth century. During a period when treatment was often limited, public hygiene centred less on man but on his habitat and attempts to ameliorate the environment. Efforts to ameliorate the environment were generally localist in nature. Historian Christopher Hamlin's important article on 'Muddling in Bumbledom' (1988) rejected readings of local efforts to improve sewerage or water supplies through a narrative of inactivity, backwardness, or financial conservatism. His work on four British towns reveals the need to consider how local sanitary infrastructures were shaped by legislative constraints, central versus local administrative structures, a lack of technical expertise, conflicting advice, and resistance from interest groups—forces very much present in metropolitan France, where the active administration of public hygiene was slow to emerge (Ramsey 1994). Where Hamlin was concerned with the bureaucratic determinants of sanitary reform, a richer sense of the materiality of public hygiene can be achieved by adding topography to his list of factors. Sensitivity to how an understanding of the local topography were part of debates and decisions about public hygiene by physicians, engineers, local officials, and communities reveals paths of greater or lesser resistance beyond questions of administration, expertise, finance, or interest groups. We can thus grapple with the distinctive forms of geographical relations that helped structure public hygiene.

For Michael Osborne, a 'subliminal geography' influenced French medical practitioners and state officials from the Napoleonic period to the First World War (2000, 31). We need to think about how this sense of geography was material as much as it was perceptual. This materiality is evident in how topography was believed to be influential for a

range of factors related to public hygiene, though different types of environments were accorded different levels of attention in French debates. Writing in 1882, the geologist Jerome Harrison explained how ‘the scenery which surrounds us, the soil beneath our feet, [...] the sites of our towns and villages, the occupations of the people, the nature of the water we drink, and countless other facts which meet us in our every-day life’ all depended on topography (ii). Travel writers echoed such concerns. Agriculturalist Morris Birkbeck’s *Notes on a Journey through France* (1815) was attuned to the local topography of each place visited, linking surface and geological features to the condition, character, and health of the area and people. Notwithstanding the growing emphasis on social factors in public hygiene debates, medical practitioners thought in topographical terms. For instance, in Villeneuve-lès-Avignon, outbreaks of intermittent fever in 1776 were linked in reports by the Société Royale de Médecine to the local topography, particularly the expansion of marshland following an alteration in the course of the Rhine, while the nature and configuration of the soil in Villers-en-Arthies in the *arrondissement* of Mantes was viewed by local physician Pierre Maigne as contributing to the ill health of the population (Hannaway 1972, 269; Ackerman 1990, 19). The effort that medical practitioners and public hygiene officials invested in documenting environmental factors such as the quality of the soil, the nature of vegetation and climate, the direction that towns faced, sources of water, geology, elevation, etc. reflected their fervent belief that the shape and features of the land—a locale’s topography—had a bearing on everything from the nature of disease to the quality of the water supply and the salubrity of the houses.

While medical geographies used statistical and cartographical tools to connect environments and their climate to disease—from alarm about hot climates and disease to a French belief that tuberculosis was uncommon in marshlands (Nepple 1844)—certain topographies created material obstacles to reform, becoming one of Latour’s ‘missing

masses' (1992) that made a difference to other actors. Although specific environments were imagined in particular ways to create healthy or unhealthy landscapes, their topography ultimately had an important bearing on the sanitary technologies available to local inhabitants, to the effect of shaping, frustrating or circumscribing the reforms possible in any given locale.

We can see this in terms of water supplies. During the nineteenth century, water was increasingly framed as an essential commodity, with municipalities coming under pressure after 1870 to ensure a supply of 100 to 120 litres of water per person per day. Although *fin-de-siècle* commentators bemoaned France's lax attitude to cleanliness (Weber 1986, 57–59), peasant culture was not isolated from medicine or a desire to improve water supplies. In the department of Doubs in the Bourgogne-Franche-Comté region of eastern France, many rural districts worked to install a water supply that met domestic and agricultural needs from the 1860s (Goubert 1989, 208–09). However, the topography of a *département* or *commune* was a structuring influence on the nature of their water supply and arena for improvement. Whereas Doubs had a plentiful supply of surface water, hydrogeological maps reveal how the Pyrenees are prone to drought and the extent to which northwest France has little groundwater (www.europe-geology.eu/groundwater/groundwater-map/hydrogeological-map-of-europe). Equally, urban soils, which attracted increasing interest from the 1850s onwards, played a part in shaping sanitary infrastructures. An awareness of how the sedimentary and hydrological terrain below Paris shaped the city was visible in the maps proposed for administrators by the mining engineer Achille-Joseph Delesse, as well as in the *Annuaire statistique de la ville de Paris* (Picon 2003, 141–43, 47). Instead of thinking in terms of communities being indifferent to clean water, we need to consider how efforts to improve water supplies or tackle pollution had to adapt to the character and arrangement of the topographical features of an area. Rainfall is closely connected with surface features, and the

contour of the ground determines the relative amount of water in any given locality. Conventional spatial characteristics, such as distance and proximity, dictated access to water supplies whether they be through cast-iron pipes, or from a village pump or drinking trough. Beyond the open fields of the north and north-east of France, villages and hamlets in the rural hinterlands of France—Brittany and the Vendée in the west, and the Massif Central in the centre—were often geographically isolated, with sharply contrasting ecological environments. Improved water supplies may have been represented as a hallmark of sanitary modernity that helped foster the hygienic habits taught in French elementary schools (Goubert 1989, 150–51), but the topography that sanitary officials and engineers encountered, particularly in rural or upland regions, could mean that metropolitan solutions were often problematic or too expensive to implement.

Thinking about the topography of an area also raises questions of scale, an important determinant in current ecological thinking (Moore et al. 2009). One of the major characteristics of environmental history has been to highlight the spatial and the temporal, and how differently sized zones could have intrinsic characteristics. Where the Anthropocene emphasizes the importance of global interactions and the problem of confining environmental histories to the nation state, topography encourages an examination of different scales—from the meso to the micro—and the connections between different meso- and micro-environments, whether coastal, wetland, moorland, upland, forest, lacustrine, riverine, marine, or urban. Many people in the past experienced their environment through its topography at a meso- or micro-level as part of day-to-day life. Considering the interactions between natural milieus and humans at different scales, particularly the micro-level, draws attention to small-scale phenomena that ecologists increasingly perceive as allowing us to get at the complexity of human-nature relations, including how societies and environments shape and reshape each other (Moore et al. 2009). Importantly, it shifts the focus from writing about

water supplies or pollution from the perspective of physicians, engineers, or sanitary officials. It reminds us how French peasants and farmers had a profound understanding of the environments in which they lived and worked—how their understanding of local topography influenced and constrained their actions and the decisions that they made (Plack 2010; Pioncetl 1993, 83). Naturally occurring barriers in the terrain could enable or make communal management impossible: studies of communities in the Alps and the Pyrenees reveal how nineteenth-century peasants actively managed resources, such as in Jarrier (Savoie), a commune of dispersed hamlets overlooking the Maurienne Valley, where waterlogged soil, an unstable bedrock, and torrential streams resulted in the adaptation of local agricultural and architectural practices in the face of environmental degradation (Whited 2000, 267). The configuration of the land was just as important for peasants and farmers as it was for medical writers.

As a final example, I turn briefly to suggest how topography can be considered an influence the micro-scale embodied in local knowledge of the environment and health. Although distant from France, Brian Wynne's work on the 'contextual' public understanding of science, Chernobyl, and Cumbrian sheep farmers suggests ways of thinking about the connections between topography and different forms of knowledge. Wynne's 1992 article on 'Misunderstood Misunderstanding' describes how, in response to the perceived persistence of contamination from the Chernobyl nuclear disaster, mainstream scientific advice ignored local knowledge of farming conditions. Wynne discusses how assertions from government scientists that the contamination would disperse in weeks contradicted farmers' knowledge about the contingencies of farming in the Lake District and took no account of the topographical features of the area. Wynne's work highlights different types of expertise and the importance of local knowledges of topography in response to environmental problems. Local knowledge has always mattered: an 1884 decree on water provisioning by the Comité

consulatif d'hygiène publique was informed by local schoolteachers filling out a questionnaire regarding the nature of possible improvements to local supplies (Ackerman 1990, 120). Communities would appropriate or resist plans based on their understanding of the local topography. As Alice Ingold shows (2009), nineteenth-century commentators noted how custom influenced access to water resources. A commune's favouring of local solutions was as much to do with cost as it was to do with topography: the reliance on wells in the wheat-growing province of Beauce reflected the fact that there were no rivers and few streams in the area to the west of Étampes. A community's understanding of local topography helped determine what sanitary infrastructures were possible, as well as the speed of their adoption, even if the measures ran contrary to sanitary orthodoxy.

The Place in which the Past has been Lived: Conclusions

Environmental history tends to fit awkwardly with the nation state, since environmental issues flow across borders. Nevertheless, as Richard White explains (1999), we need to recognize the historical importance of spatial thinking. In a sense, we should be attuned to 'the place in which the past has been lived,' and incorporate considerations of the physicality of space and scale into our attempts to understand how human health questions are no less ecological than those in the nonhuman world. After all, where things happen is an important determinant of how and why they happened.

We can get at a more nuanced sense of the relationship between the environmental and the medical by thinking with and through different topographies, how they relate to imaginings and experiences of landscapes, and about how they featured in medical thinking and writing about the environment and health. The act of taking the topography of a landscape seriously, of recognizing it as a determinant in medical or community reactions to

health needs does not mean a return to environmental determinism, nor a negation of how French landscapes were invented and represented. In addition to framing France's national and cultural identity, the materiality of landscapes fashioned environmental and health conditions and medical and community responses to them beyond a sense that certain diseases were associated with specific geographies or climates. The topography of distinctive places, and how they were incorporated into medical writing and debate, helped determine distinctive practices of *placeness* in which medical and environmental thinking interacted with the physical environment.

A greater topographical awareness in how we read supposedly flat textual sources reveals how varied topographies shaped and influenced environmental and medical responses. These topographies might generate awe through the sublime in the Alps, or anxiety in the case of marshlands, but there is more at stake than just perception. Perspectives on health and the environment, and efforts to improve an environment's salubrity, were never 'placeless.' They were often bounded topographically, regionally or locally. We need to remember that the French past is not a flat place, but a richly topographical one, whether we are talking about Brittany, the Massif Central, the Loire Valley, or France's colonies. As the historian and political economist John Hill Burton noted in 1864, 'how lifeless all history is without topography' (164).

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