

The American Geography was published in 1789, gave the inhabitants of the United States a new consciousness of the territory of their nation and its scope for future expansion. But at the same time, geography remained rooted in its own humanist traditions, and many authors were more concerned with studying classical texts or Scripture than with incorporating the latest discoveries.

In this respect, and in others, what Withers identifies as the new geographical experiences of the age do not exactly correspond to the perceptions of people in the eighteenth century themselves. Withers resists attempts to 'privilege' the Enlightenment in one particular place, where it is thought to have originated, and to assume passive reception of its ideas elsewhere. One might nonetheless acknowledge that a sense of 'cultural gradient' – the notion that some places were further along the path of progress than others – was often expressed in the period, and might be said to be part of the experience of cultural transformation. Thus recent scholars' perspectives on the geography of the Enlightenment are not precisely consonant with the era's own consciousness of cultural geography. Some of the most intriguing issues raised by Withers's study concern this disjuncture between what is now understood about the spatial dimension of knowledge in the eighteenth century and what thinkers of the time understood. Scholars have to decide just how much of the geographical self-consciousness of the period is worth trying to recapture today.

Readers will be stimulated to develop their own reflections on the relations between geography and history by Withers's book, an accomplished work of historiography in the geographical mode. As a survey of recent literature, its extensive footnotes and bibliography will serve readers for years to come, though its coverage is limited to the natural and human sciences, ignoring other realms of Enlightenment culture such as politics, religion, literature, philosophy and the arts. The book is imaginatively illustrated, with a large selection of maps and other images that show how geography was studied and taught. Most of all, historians of science should be grateful to Withers for having made the work done in our field so central to his attempt to reconfigure scholarly understanding of this critical historical period.

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JAN GOLINSKI, **British Weather and the Climate of Enlightenment**. Chicago and London: University of Chicago Press, 2007. Pp. 272. ISBN 978-0-226-30205-8. \$35.00 (hardback).

JAMES RODGER FLEMING, VLADIMIR JANKOVIC and DEBORAH R. COEN (eds.), **Intimate Universality: Local and Global Themes in the History of Weather and Climate**. Sagamore Beach: Science History Publications/USA, 2006. Pp. xx + 264. ISBN 0-88135-367-1. \$39.95 (hardback).
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Unlike the weather fronts that seem to drench us with monotonous regularity, studies of the history of the weather have been noticeable only by their scarcity. Indeed, and at the expense of overstressing the analogy, they have resembled much more closely Francis Galton's anti-cyclones, those weather systems that have graced the British Isles far too rarely of late. Until recently, that is. Following the example set by the likes of James Fleming, Vladimir Jankovic and Mark Monmonier, there has been a steady increase in the number of book-length academic studies of the history of the atmospheric sciences, not to mention the publication of a number of popular-science books and articles in scholarly journals. The two books under review here are therefore welcome additions to what is a gradually burgeoning field.

Jan Golinski has been a central figure in this field for some time, although this is his first book-length study of the history of meteorology, his previous contributions having been confined to book chapters and journal articles. Indeed, *British Weather and the Climate of Enlightenment* brings those studies together and combines them with new material, to explore 'how experiences and understandings of the weather reflected cultural change in the eighteenth century' (p. 7). Golinski is careful not to delude the unwitting reader. This is not, he forewarns us

in the introduction and reminds us in the conclusion, a history of the emergence of meteorological science in the eighteenth century. But that is not to say that one does not learn a lot about it along the way.

As a number of authors have noted, and as Golinski affirms, ideas of climate were reconceived in the eighteenth century through the application of systematic study, which attempted to normalize and regularize the weather. This shift was achieved through daily recording, using instruments like the barometer. Such activities placed weather study within a wider Enlightenment discourse, so that the climate would reflect the 'regular actions of physical laws that were manifestations of God's providential benevolence' (p. xii). But routine and regular recording of British weather also revealed, or at least confirmed, other aspects of its character. It was seen as 'generally benevolent – both moderate overall and gently variable in temperature and precipitation' (p. 57). The weather was an asset to agriculture and to the health of the population. Even the constant wind and rain served to fertilize both the soil and the populace; physicians in the mid-eighteenth century noted that the British people appeared to flourish in damp conditions. Generalized from the individual body to the body politic, the weather was seen to define the very character of the nation. Indeed, the British saw the climate as a vital component in an emerging sense of national identity. It was a providential asset of the nation – a divine gift to health and prosperity, in the same way that other nations' climates were seen to retard their development.

The weather, of course, resisted its reduction to observable regularities. Anomalies and extreme events continued to evoke primitive superstition and weather-lore – attitudes meant to be at odds with Enlightenment values. That a variety of discourses of the weather could circulate in eighteenth-century Britain was a result of its very public nature, with the literate middle classes realizing the value of listening to the experiences and sayings of their unlettered neighbours. Indeed, as Golinski notes, the 'science of the weather was built upon the speech of many informants' (p. 76). He highlights the fact that although the country was becoming more literate it still referred to oral tradition. Although it was urbanizing it was still rooted in rural life; although increasingly rational, it was still superstitious.

In perhaps the best chapter of the book – the first – Golinski brings many of his main arguments together in the analysis of one weather diary, written by an anonymous Worcestershire meteorologist in the first years of the eighteenth century. The document, Golinski observes, 'joins observations and theoretical ideas together with a record of personal experience', where at times the author 'gave free rein to a poetic impulse to concatenate metaphorical and allusive terms' (p. 15). In doing so, the Worcestershire author was trying to find an adequate language to describe weather and his reaction to it, bodily and emotionally – unsurprising, positioned as the author was 'between learned and popular cosmological traditions at the dawn of the Enlightenment' (p. 15). In the conclusion Golinski raises the question of why the compilation of weather diaries like that in the Worcestershire account occurred only in fits and starts, with large gaps in the record. Partly it was because these accounts were chorographical by nature rather than cartographic; they aimed to record the history of a circumscribed locality rather than a geography that covered diverse points. In other words, eighteenth-century meteorologists hoped to 'grasp the temporal connection between weather events rather than to map the movement of weather across the face of the earth' (p. 209).

The edited volume *Intimate Universality* continues this meditation on the geographies of weather and climate. As the title suggests, the book's contributors consider the changing relations between the local and the global in meteorology, noting as they do that it 'is a science of no place and every place' (p. xviii). The substantive essays set out to map out the nature of this seemingly paradoxical terrain in different historical contexts, including the drawing rooms of Georgian Britain (Jankovic), Cambridge University's Cavendish Laboratory (Richard Staley), mobile climatological observatories in converted Opel motor cars in interwar Austria (Deborah Coen),

the airways of mid-twentieth century America (Roger Turner and Gregory Cushman) and the conference rooms where responses to climate change threats are actively being discussed today (Fleming). In other excellent chapters, Katherine Anderson highlights the tensions between the representation of local observation and of global – or at least hemispheric – processes by tracing the history of meteorological mapping over the course of the nineteenth century, while Gregory Good examines John Herschel's thinking on meteorology, which attempted to reconcile an emphasis on observation with a strong focus on theoretical development – historiographical locals and globals, if you will.

It is inevitably more difficult to pursue coherent agendas across edited volumes than across monographs, but viewed as a whole *Intimate Universality* certainly helps us to reconsider modern atmospheric sciences as an effortlessly global enterprise. As both that volume and *British Weather and the Climate of Enlightenment* also remind us, it is the weather itself that can so easily confound our tendency – in the global north at least – to think of it as somehow global and abstract, as well as benign, natural, even at times tamed (even if only by waterproof coats, weather warnings and storm drains). In relation to this last point, both volumes also urge us to give more time to the politics of the weather. In his conclusion Golinski finds parallels between attitudes to the weather in eighteenth-century Britain and those expressed in the aftermath of Hurricane Katrina in the USA, while the editors of *Intimate Universality* note that in our struggles with the weather 'we are all in it together' (p. xviii). True to a degree, but as Hurricane Katrina exposed, it is usually the poorest of society that are in it more than others.

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FLORIAN CHARVOLIN, ANDRÉ MICOUD and LYNN K. NYHART (eds.), *Des Sciences citoyennes? La Question de l'amateur dans les sciences naturalistes*. La Tour d'Aigues: Editions de l'Aube, 2007. Pp. 254. ISBN 9-782752-602305. €20.00 (paperback).
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Although historians of science try to avoid teleological accounts, the narrative of professionalization is hard to resist. Is it not the case that, at some time in the early twentieth century at the latest, the processes of discipline-building, institutionalization, university formation and reliance on specific skills and apparatus separated professional scientists and amateurs for good? *Des Sciences citoyennes?* rejects this notion in a very convincing and thought-provoking way. Concentrating on natural history as a site of 'citizen science', this multidisciplinary volume, including perspectives from history and sociology of science as well as anthropological approaches, shows that the amateur has a secure place in the pursuit of scientific knowledge, even in the twenty-first century.

Arguably, the issues most insistently present in the volume are to do with local knowledge. It is the specific and often unique knowledge of the plants and animals in his or her own region that sets the amateur natural historian apart from the data-collecting expert in the metropolis. Tightly linked to the issue of amateurs gathering data is the issue of trust, in particular how to control the contributions of amateurs to large fieldwork projects. Mark Barrow tells the story of the enormously successful 'Christmas Count' in the United States in the early twentieth century. Professional ornithologists trying to track the paths of migratory birds depended on the information of thousands of amateurs. Where the evidence had previously taken the form of shot birds, it now shifted, thanks to the use of field glasses, to observation *de visu*. Yet this made it much more difficult for the professionals to determine how reliable the data gathered by the amateur ornithologists actually were.

Several case studies point out that amateurs have been far more than an army of helping hands. Patrick Matagne shows how French amateur botanists around 1900 created a wealth of