

The Climatological Revolution of the Eighteenth Century (until 2016)

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Over the last decade or so, the history of meteorology and climatology has developed rapidly, pushed, to some degree, by the question of anthropogenic global warming and its scientific foundations. Naturally, much of this research focuses on the nineteenth and twentieth centuries, while the early days of climatology around 1800 are still somewhat obscure. Reviewing the literature reveals that, up to this point, studies in the history of climate ideas and climate science before 1800 have focused exclusively on meteorology, turning the history of climatology into a by-product of technological progress in meteorological measurement (instruments, their standardization and homogenization) and data collection from about 1700 onwards. This approach has taken for granted that “climate” has always been a meteorological category—an assumption that does not withstand the test. In the context of Antique geography, from which the idea emerged, “climate” referred to a new method of determining the location of a certain place on the globe; the term’s invention parallels the invention of geography, in which context it continued to have little to do with meteorology or the atmosphere. Apparently, the traditional geographic definition of “climate” remained stable well into the eighteenth century. This raises the question of why “climate” finally emerged from its niche in geography to represent the abstract and complex “statistics of weather.” The answer will come from a thorough study of the early modern *geographic* tradition, particularly the development of physical geography from Varenus to Humboldt, which will change the narrative as well as the chronology of the emergence of climatology as a scientific discipline.

Among the forces that drove the climatological revolution was colonial experience. In the colonial framework, Europeans confronted unfamiliar environments and unexpected climatic conditions that contradicted the idea of latitudinal similitude. Moreover, unusual meteorological phenomena (e.g., hurricanes, tropical typhoons, El Niño and La Niña events) nourished speculation about their natural causes. Practical demands of colonial life also structured the emerging scientific knowledge about climate in the colonies. If botany collected the stock of knowledge needed for plantations, then climatology may be regarded as even more universal and basic to colonial economies. From the point of view of colonial powers and entrepreneurs, climate had strong implications also for political reasons making climate an argument in the discourses on government and slavery. Last but not least, it was also in the colonial context that the ancient idea of climate modification was revived and applied on a large scale as settlers used deforestation to change “unhealthy” climates. That notion was pushed further by ideas of civilizing wilderness (particularly in the Americas) and was certainly a determining ideological factor in the interactions between colonizers and the

environment as well as colonizers and indigenous populations. Richard Grove was first to show that such climate theories and their practical consequences (some environmental) also provoked a form of resistance, which he categorized as an early form of environmentalism. This is true for French as well as British colonies, and it is connected with experiences made (at different times) not only in both Americas, but just as well in the Caribbean, in Africa, Asia, and Polynesia. Climate theories strongly influenced political and geographical decisions. The outcome of my research shall be published in the form of a monograph and will also inform a chapter on the history of climatology to be included in the *Palgrave Handbook of Climate History*.