

## BOOK REVIEW

Charles W. J. Withers. *Zero Degrees:  
Geographies of the Prime Meridian.*  
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Over the last decades, scholarship on the making of scientific knowledge has increasingly emphasized the importance of negotiation and consensus for the processes of standardization that ultimately hold epistemic communities together, by producing agreed-upon frames of reference of shared concepts and practices. Those studies have also highlighted how complex and dynamical such processes tend to be, with different communities striving to stabilize particular methodologies, and similar sets of practices being appropriated in varied manners by distinct groups of experts.

These historiographical insights are central to Charles W. J. Withers's approach to one of the most compelling case studies as far as standardization is concerned: the choice of a prime meridian for the whole world. The adoption of the Greenwich meridian has traditionally been approached from the perspective of the standardization of longitude measurements, timekeeping, navigation, and overall its connections with the very construction of modernity. In *Zero Degrees* Withers sets out to revisit this well-known story by placing the focus on

spatiality and metrology.

The book is divided into three parts, in which the author respectively addresses the use of multiple prime meridians, which extended well into the nineteenth century; the recommendation to adopt Greenwich as a prime meridian issued from the International Meridian Conference held in Washington, D.C. in 1884; and finally, the afterlife of the prime meridian question after the aforementioned conference.

In the first part, Withers brings to light the variety of prime meridians that were used between the late-seventeenth century and the nineteenth century, not only across different nations and countries, but also within the same national spaces by distinct communities of practitioners, including astronomers, cartographers, surveyors, and navigators. Withers thus stresses that the issue of a prime meridian cannot be understood solely in terms of national pride and disputes.

A full chapter is devoted to the meridians used in the United States between 1784 and 1884. The author shows how various North-American institutions and experts positioned themselves with regard to the use of the meridians of Greenwich and Washington, D. C. in the nineteenth century, pointing out how arguments of national independence and geographical utility were met with contrary claims based on established practice, the importance of standardization for greater accuracy, and the universal benefits of agreed-upon scientific principles.

The second part of the book begins with a chapter on the connections between the prime meridian debates of the nineteenth century and coeval discussions on metrological standardization. Withers revisits the various systems of weights and measures used in France and Britain, and highlights how telegraphy and its use in longitude measurements evinced the need for a prime meridian as well as agreed-upon methodologies and well-defined systems of units. The author also highlights how the development of railways and the adoption of railway time zones referred to the Greenwich meridian in the United States in 1883 helped set the scenes for the wider adoption of Greenwich.

Withers further shows how the Washington conference of 1884 stemmed from, and was significantly shaped by discussions and recommendations from meetings of the International Geodetic Association and the International Geographical Conference held between 1870 and 1883, during which several candidates to the world's prime meridian were discussed. It is also shown how the advocacy for a uniform global system of timekeeping increasingly intertwined with the issue of settling on a prime meridian and standardizing the measurement of longitudes. A whole chapter is dedicated to an in-depth scrutiny of the proceedings of the 1884 conference in order to, in the author's own words, bring to light the "what" and "how" underlying the seven resolutions of the conference, which have tended to be the main focus of analysis. Withers argues that those resolutions ultimately rested on practical convenience, and

notes how the emerging consensus around Greenwich paved the ground for the adoption of resolutions over a universal day and the coincidence between the astronomical and nautical days.

In the third and final part of the book it is stressed that the 1884 conference was a key event but not a defining moment in the global adoption of a prime meridian. Not only the acceptance of the Greenwich meridian by individual nations took place piecemeal and various meridians were still used for different purposes, as at least to some extent questions concerning what prime meridian should be used for the international coordination of time remained open for the ensuing decades. Withers concludes by summarizing the main arguments of the book and briefly revisiting previous scholarship on how the Greenwich meridian has been celebrated and portrayed in literature and popular culture.

Withers succeeds at producing a nuanced, big-picture account with the added value of a sharper focus on different communities of practice and on the role of metrological discussions in the choice of the world's prime meridian. But the author does so by sticking to a linear type of account that remains focused on the usual major players and events, most of which have been extensively addressed elsewhere. For a book sporting the subtitle *Geographies of the Prime Meridian*, it sheds little light on how geographical spaces other than those of the United States, Britain, and France, and in fact even the imperial and colonial domains maintained by the latter two contributed to, and were shaped by the debates and events addressed in the book. Overall, *Zero Degrees* presents a well-known story with more nuance and detail, but without diverting significantly from the prevailing narrative of the prime meridian's history. Nevertheless, it is a thoroughly researched and finely crafted book deserving to gain a steady and prominent place among the literature on the subject, which it certainly will.