



Plants, organicism, and politics

Ariane Dröscher: Plants and politics in Padua during the age of revolution, 1820–1848. London: Palgrave Studies in the History of Science and Technology Series, 2021, 300 pp, 126.59 € HB

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The relationship between science and politics has been the subject of heated debate among historians and philosophers of science for quite some time. For instance, in his essay entitled *Science and Politics as Resources for Each Other* (Ash 2001), historian of science Mitchell Ash proposed that politics and science should be considered as reciprocal resources. This idea, which arose from the analysis of the external conditions of knowledge production and the sociological programs of science, has gained more significance in recent times, given the growing intermingling of science, society, and politics in contemporary technoscience. Ariane Dröscher's *Plants and Politics in Padua during the Age of Revolution* provides a valuable contribution to the general debate on science and politics. Furthermore, this book aims to develop some hitherto little-studied elements of this relationship.

The setting of the book is clear from the very first pages: Padua in the first half of the nineteenth century. The two protagonists are the Meneghini brothers. Andrea Meneghini (1806–1870) was a scholar of politics and economics and the author of numerous treatises on the subject. Eventually, he became the mayor of Padua after its annexation to the Kingdom of Italy. Giuseppe Meneghini (1811–1889) was a leading phycologist with important publications that were translated into several languages. Apart from the blood relationship, there was also a common element between the two brothers with respect to their political attitudes and the use of biological and botanical metaphors, theories, and concepts in them. Andrea Meneghini, as Dröscher notes, “was engaged in the renewal of political and economic thought and in the foundation and promotion of new forms of civil togetherness, expression, and collaboration. Like his older brother, Giuseppe was involved in all the main Paduan associations, newspapers, and networks” (4).

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In this book, the author shows how the Meneghini brothers' proposals, which were based on a strong biomorphism, failed due to the repression following the 1848 uprisings—a repression that, as the author rightly argues “had a particularly negative effect on the development of the natural sciences in Italy in general and of cell biology in particular” (11).

In ten meticulously researched chapters, Ariane Dröscher illustrates the intricate connections between society, politics, and botany during mid-nineteenth century Italy. As the author shows, on a personal level, scientists were politically engaged, and from a conceptual standpoint, political involvement spurred the development of many new theories. From an institutional perspective, the intertwining of politics and botany served as a means of promoting social cohesion and progressive ideals. In Padua, scientific knowledge of plants was leveraged “to gain more and more widespread authority over Veneto’s provinces and greater independence from Venice” (7), although this blending of science and politics ultimately proved to be ineffective.

While these initial indications may suggest that Dröscher’s book focuses solely on microhistory, the reader quickly discovers a plethora of figures, theories, and networks that broaden the book’s scope beyond Padua’s Caffè Pedrocchi to cover the whole of nineteenth century Europe. Indeed, the methodology chosen by the author is simple and should be readily accepted by most readers. Through biographical research on two scientists who have been overlooked in contemporary historiography, the book uncovers information, traces, and data both on how (botanical) knowledge was generated and on the intersection of botany and politics during a particular period. Aside from the biographical approach, the book also focuses on two other dimensions that have been neglected in historical scholarship. First, Dröscher examines events in Italy during the first half of the nineteenth century, a period that has received relatively little attention compared to other historical periods such as the Renaissance. Second, from a geographical perspective, the city of Padua has been largely overlooked in recent discussions of the 1848 uprisings, while more attention has been paid to cities such as Genoa.

Dröscher’s *Plants and Politics in Padua during the Age of Revolution* goes beyond the intertwining of politics and botany in Padua in the first half of the nineteenth century and the biography of the Meneghini brothers. In fact, this book offers a broad range of themes that shed light on the processes of knowledge production, dissemination, and reception in the scientific community of the time. These themes encompass a variety of scientific, social, and philosophical aspects, making it a valuable contribution to the historiography and philosophy of the life sciences in the nineteenth century. In this book, Dröscher explores topics such as cell theory, the role of evolutionary theory, the use of new technologies, microscopic and experimental techniques, and the role of transfer and transmission of practices, concepts, and knowledge between disciplines. She also delves into the formation of networks of scholars, the success and failure of scientific programs, and the separation of religion and science. These themes run throughout the historiography and philosophy of the life sciences in the nineteenth century, and the author skillfully weaves them into her analysis of the relationship between politics and botany in Padua.

Of all these issues Dröscher addresses, I would like to single out one: the interweaving of Andrea and Giuseppe Meneghini's philosophy with broader social and political categories, as discussed in chapter 6 under the title "Organization, Cooperation, and Progress in Padua's Political Economy." In this dense chapter, Dröscher argues that a botanical transformation took place in Padua that made plants the central source of "metaphorical and explanatory inspiration" (119). After providing an overview of nineteenth century Venetian's political ideas, the author analyzes Andrea Meneghini's bio-philosophical theories. Dröscher convincingly shows how different organicist theories were learned in Italy through the transition of Lombardy-Veneto from French to Austrian and the reinterpretation of Immanuel Kant's bio-philosophy. During this transition, the metaphor of the state as a body was interpreted following Kant: "Society exists when all the individuals are united with a single common end, in the way that all our bodily limbs have the well-being of our whole body as their end, and the whole body has as its end the well-being of the limbs" (143). Meneghini accepted this and combined it with associationism. As Dröscher noted, "his basic epistemology can indeed be described as holistic, because it focused on the individual elements and the interplay among them, and because it understood precisely these interrelations as the producers of emergent economic phenomena that were profitable for all" (145–146).

Further exploring the interaction between philosophy and biology, Chapter 7, along with Chapter 8, which focuses on evolution, provides valuable insights into the scientific conflict between vitalists, mechanists and organicists, and sheds light on the historical development of the debate on biological mereology. These debates reached their peak in the early twentieth century and are currently being revisited in modern biology with great interest.

Dröscher's book provides a valuable contribution to the exploration of the relationship between politics and botany, as well as laying the foundation for a broader comparative and transnational perspective. However, while the book covers interesting issues, it lacks a more comprehensive theoretical reflection on the dynamics of political epistemology and the broader philosophical concepts that underlie the thinking of the actors analyzed in the volume. Although the book provides empirical case studies and analyses of specific policy issues, it falls short of providing a complete theoretical framework for understanding the philosophical foundations of political epistemology. This limitation is significant, since a solid theoretical foundation is essential for comprehending the complex interactions between politics and knowledge production.

Furthermore, there is a vast body of literature on the use of metaphors in science, the dissemination of knowledge, and the transfer and circulation of practices between different fields (Tamborini 2022b, Tamborini 2002c; Gänger 2017; Östling et al. 2018; Ash 2006; Markovits et al. 2006; Haraway 1976). Although the author cites some of this literature, it would have been more insightful to discuss and evaluate the broader philosophical rationale for the case study analyzed in the book. In fact, I am convinced that the case study of the Meneghini brothers could provide broader insights into the dynamics of knowledge creation and production. For example, how do political and social factors shape the development of scientific ideas and what are the implications for our understanding of scientific progress?

Moreover, a history of science and technology, as told in this volume and collected in Palgrave's series of the same name, could help us understand the interlocking dynamics between politics and scientific production in a broader history and philosophy of technology and science or technoscience (Bensaude-Vincent et al. 2017; Liggieri et al. 2023). This would enable us to better understand the broader context in which scientific ideas are developed and applied, and how political and social factors have influenced the direction of scientific research over time.

Finally, given the cross-fertilization of different disciplines, methods, and concepts, it is important to consider the broader dynamics that underlie the dissolution and circulation of knowledge today (Tamborini 2022a). By examining the historical and philosophical underpinnings of scientific knowledge production, we can gain a better understanding of how knowledge is produced, circulated, and applied in contemporary society, and how this knowledge can be used to address some of the most pressing challenges of our time.

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