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Frühe Neuzeit – Revolution – Empire (1500–1815)

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Julia Annette Schmidt-Funke, Gunhild Berg, Martin Mulsow (Hg.), Das Schloss als Hörsaal. Ludwig Christian Lichtenbergs »Vorlesung über die Naturlehre« und die residenzstädtische Wissensproduktion um 1800, Stuttgart (Franz Steiner Verlag) 2021, 425 S., 17 Abb. (Gothaer Forschungen zur Frühen Neuzeit, 19), ISBN 978-3-515-12664-9, EUR 70,00.

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When looking at late-18<sup>th</sup>-century developments of natural philosophy and its scientific successors, the German lands stand out among their European neighbours thanks to their political »Flickenteppich«. The monograph »Das Schloss als Hörsaal« (engl. »The Castle as Lecture Hall«), edited by Julia A. Schmidt-Funke, Gunhild Berg, and Martin Mulsow, discusses a remarkable example of one of the numerous scientifically thriving German hotspots originating from this: the court in Gotha.

By introducing unstudied sources found in the castle's and the city's vast archives, the thirteen contributors of this volume introduce us to the scientific activities of Gotha's aristocracy and its citizens with a specific focus on Duke Ernst II and his ambitious librarian and natural philosopher Ludwig Christian Lichtenberg (the four year older brother of Georg Christoph Lichtenberg). As Gunhild Berg argues in her comprehensive introduction to the volume, Gotha offers insight into a widely overlooked form of scientific endeavour that stood between German university elites and questionable wandering entertainers. As Berg and her colleagues argue, this in-between dilettante form of the studies of nature was a crucial part of the scientific fundaments of natural philosophy in the German lands and deserves a new evaluation.

The volume is split into four sections, three chapters each, offering different perspectives on Lichtenberg's work, Ernst's II enthusiasm, and the dynamics of Gotha's studies on nature. The first section discusses how Lichtenberg's lectures fit into contemporary ideas of science, nature, and religion. The second section's chapters look at Gotha and its periphery as locations of knowledge production, showing that the city's disposition supported the thriving interest of its inhabitants and vice versa. Section three sheds light on Lichtenberg's »Vorlesung über die Naturlehre« and its experimental aspects. The final section focuses on the vast instrument collections in Gotha and how they mirror the interests and practices of the duke and his subordinates. Additionally, the volume offers several photographs and illustrations, a list of instruments from Ernst's II collection, and a register.



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In the first chapter, Paul Ziche introduces Ludwig Christian Lichtenberg as a natural philosopher. He compares his »Vorlesung über die Naturlehre« with the more famous »Naturlehre« by Erxleben, a compendium of natural philosophy, which Lichtenberg's brother Georg Christoph took over after Erxleben's early death. Based on this comparison, Ziche's chapter discusses the complex development of German natural philosophy and its numerous terms and implications around 1800.

Chapter two by Julia A. Schmidt-Funke adds another dimension to Lichtenberg's perspective on natural philosophy by introducing his parents' religious influence on him and his younger brother. By comparing Lichtenberg with his atheistic brother in Göttingen, Schmidt-Funke presents an example of the various relationships between Christian belief and the study of nature possible at the end of the century.

In chapter three, Martin Mulsow introduces Lichtenberg as »micrologist« following his volatile comments on Ernst's II obituary. Based on these written outbursts of disagreement, he discusses the *Archivrat's* epistemic virtue of detailed persistence, fitting for a civil servant. Mulsow illustrates this virtue by looking at Lichtenberg's efforts to translate the Tironian notes, an ancient Roman shorthand, which he never published, as he did not find his research complete.

Other chapters illustrate the characters of the amateur natural philosophers and experimenters in Gotha and their specific methods. Marie-Theres Federhofer gives a deeper insight into the practice of dilettante natural philosophy. Dilettantism, she argues, was a social privilege connecting people across social classes. In his chapter on the optician J. B. Oppelt, Erik Liebscher introduces the inn as a crucial place for such an exchange. Based on Oppelt's newspaper advertisements, this study on the relatively unknown travelling instrument maker shows how much we can gain from these often-overlooked sources.

Andreas Kleinert looks in chapter seven at Joseph-Aignan Sigaud de Lafond's ȃléments de physique théorique et expérimentale«, which Lichtenberg used for his *Vorlesungen*. Kleinert argues that Lichtenberg created his own original work by translating, shortening, and rearranging the French philosopher's writings and adapting them to his audience and purposes. As Jan Frercks shows in chapter eight, Lichtenberg was also an innovative experimenter, even though he did not aim to participate in scientific discussions.

Several chapters focus on the castle as the heart of Gotha's scientific endeavours, thanks to the ambitions of Ernst II and his parents. Matthias Rekow introduces the duke's interest in electricity in chapter nine, pointing out how his generosity in financially supporting physicists fitted the image of the idealised enlightened sovereign. As Friedegund Freitag points out in chapter ten, the cornerstones for the duke's profound interest were already laid by his parents, specifically his mother, duchess Luise Dorothea von

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Sachsen-Gotha-Altenburg. Following her own interests in natural philosophy, she installed an early physical cabinet in Gotha.

The instruments from Ernst's II extraordinary collection are the focus of the last chapters. Oliver Zauzig discusses in chapter eleven how Lichtenberg obtained numerous instruments to accompany his lectures on natural philosophy with state-of-the-art experiments. Zauzig regards the instruments as »infrastructures of science« and shows how Lichtenberg's collection, although that of an amateur, often surpassed that of his brother in Göttingen thanks to the duke's generous financial support. Unfortunately, as Matthias Rekow and Erik Liebscher show in the last chapter, most of Lichtenberg's and Ernst's II instruments have been lost to time. The authors follow the collection's trail, adding a detailed appendix listing the lost instruments and their fate.

Although Gotha, as a centre for natural philosophy, is the principal theatre for the book's story about scientific research in the periphery, its activities reached further than the small town's borders, as Tanja van Hoorn demonstrates in her article about the »Magazin für das Neueste aus der Physik und Naturgeschichte« (»Magazine for News about Physics and Natural History«). The journal edited by Lichtenberg mirrored his unique perspective on natural philosophy. Furthermore, it shows that Gotha was not an isolated, passive enclave of scientific interest but a recognised place of a form of scientific exchange which deserves more attention.

By shifting the perspective away from the frequently-studied German elite, the chapters add another aspect to German natural philosophy around 1800. One points out that studies of nature often rested on the shoulders of interested and wellto-do citizens and aristocrats who increased their cultivation by financing researchers and instrument makers and by distributing information.

Thus, the focus on Gotha is not at all limiting. However, when locating Gotha and its actors within the German scientific landscape, the authors only look to Georg Christoph Lichtenberg in Göttingen for comparison. Since he was an extraordinary representative of experimental physics, making him the benchmark for German professional science seems unnecessarily short-sighted. Many other professional and amateur natural philosophers around 1800 would have served well as a comparison to driving home the specific role of the Gotha scientifically interested.

However, this will be a task for other historians of science who can now build on the well-researched and comprehensive studies which »Das Schloss im Hörsaal« offers, advocating for more attention to the mid-tier group of German natural philosophy.

The book offers a comprehensive insight into this in-between world of scientific enlightenment interest. It sheds new light

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on dilettantism by using the unique sources the castle and archives of Gotha offer historians of science and knowledge. Although the study seems very specific in its geographical and temporal framework, the chapters convincingly demonstrate that the aspects which made Gotha an extraordinary place for early *Naturwissenschaft* are well worth studying to enrich our understanding of late-18<sup>th</sup>-century German natural philosophy.



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