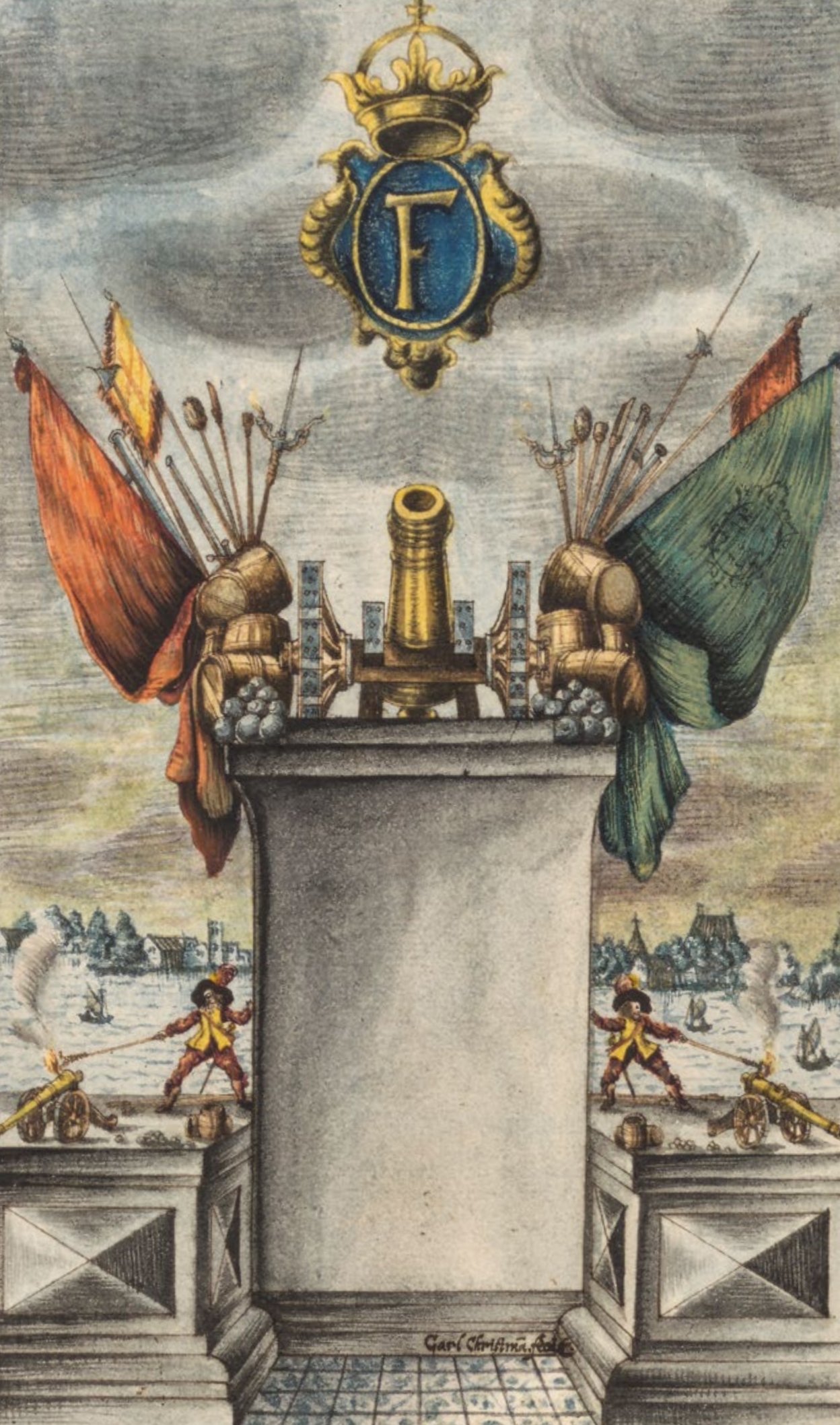




Fireworks, “Wilde vnd Zame”:

Books of Pyrotechnic Arts for War and Pleasure in Denmark, 1578–1650

Denmark holds a prominent position in the history of early modern fireworks with four lavishly produced folio volumes from the sixteenth and seventeenth centuries, documenting its pyrotechnic expertise. The title of this study, “Fireworks ‘Wilde vnd Zame,’” is taken from the so-called *Kriegsbuch* of 1578 and reflects the contemporary understanding of fireworks for both entertainment and destruction.¹ The formidable pyrotechnic expertise of early modern Denmark seems little known beyond Nordic countries,² although the twenty-first century publication of Rudolf von Deventer’s royal fireworks manuscript should radically change this state of affairs.³ The present study offers more contextualization by introducing and analyzing these four books, with a particular focus on pyrotechnics for celebrations at court.

The first and earliest volume is King Frederik II’s book of war, his *Kriegsbuch* (fig. 1).⁴ This volume, a compilation of seven tracts by at least two different authors, signals royal prerogative in both its making and its contents. In 1578 Frederik II had this beautiful book printed in what appears to be a single copy. Arguments are presented below for considering this book an intentionally unique copy.

The second and third volumes are two nearly identical manuscripts by Rudolf von Deventer (ca. 1540–86), both dated from 1585: his *Bericht vom Pulver und Feuerwercken* (Report on gunpowder and pyrotechnics) dedicated to King Frederik II (1534–88) and his *Kunstbuch von allerhandt Kunsten der Argkaley* (Handbook of all manner of the arts of artillery) dedicated to the Danish nobleman Christoffer Valkendorf (1525–1601) (fig. 2).⁵ Von Deventer’s two works are not identical as some pages were removed from both manuscripts at an early date. For this reason, the

1. Arentsche, 1578, fol.) : (iijr. See Nielsen, LN 367. In the following this pyrotechnic book, written in German, is referred to as Frederik II’s *Kriegsbuch*.

2. See for example, Brock, Lotz, Fähler, Salatino, Jöhler and Villon-Lechner, Werrett.

3. See von Deventer. First translations into English from Scandinavian festival accounts can be found in Wade 2004, 237–341.

4. The *Kriegsbuch* is often referred to in Danish as his *Krigsbog*, see Birkelund, 1988. I want to express my thanks to Iben Bruun-Aamodt and Pernille Holm Lindhart at the Royal Danish Library, as well as to Casper Thorhauge

Briggs-Mønsted for assisting me when I wrote this paper with the digital copy through Early European Books Online, which is accessible only in Denmark. Some parts can be found in Internet Archive under “Arentsehe”: <https://archive.org/search?query=Joachim+Arentsehe> (accessed 28 September 2024). I want to thank librarians Wendy Shelburne, Paula Carnes, and Marek Śroka, University of Illinois, who procured my university access to EEBO so that I could revise this article for publication.

5. The von Deventer manuscripts are held at the Royal Danish Library as NKS 101, 2^o and Thott 273, 2^o. Von Deventer, 14.

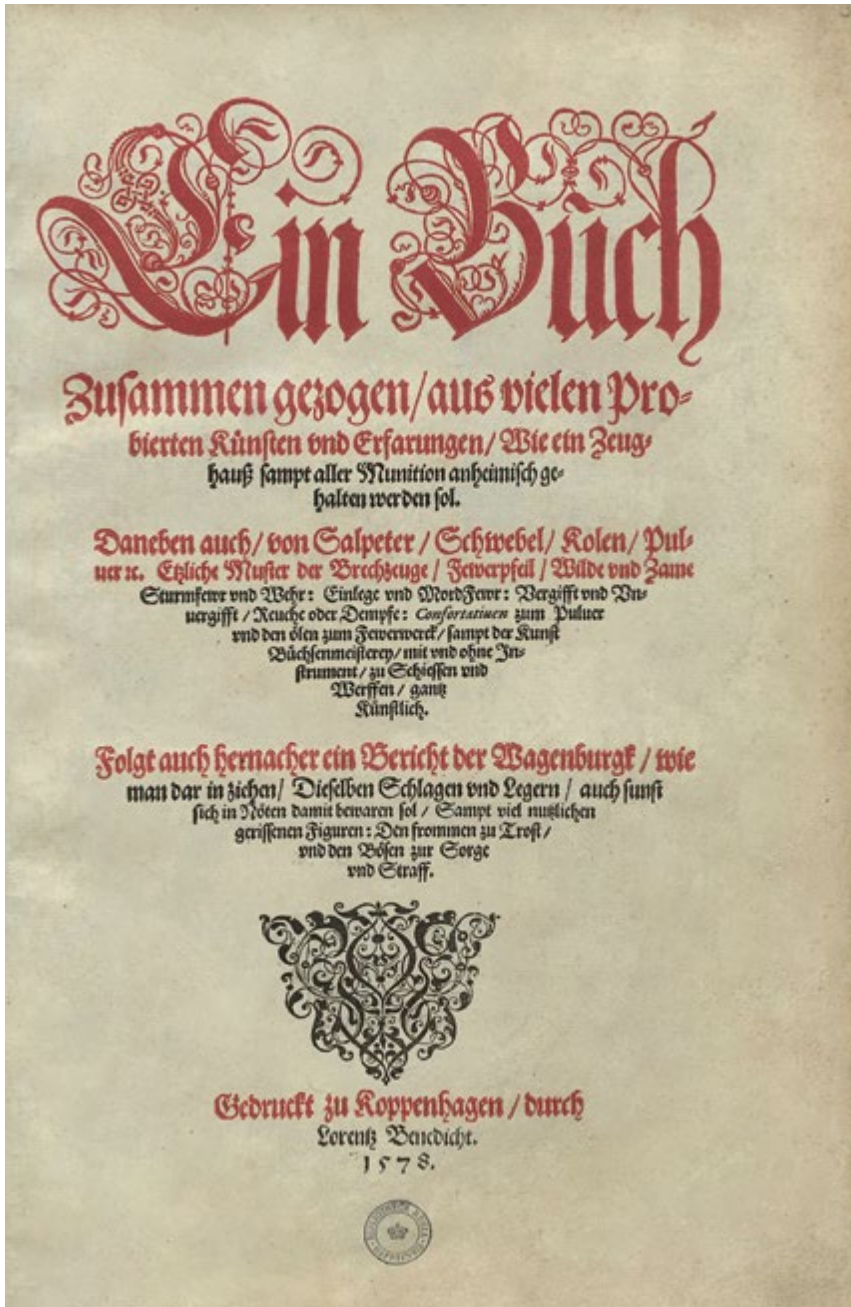


Fig. 1. Lorenz Benedicht (printer). Title page of *Ein Buch zusammengezogen* [...] (also known as King Frederik II's *Kriegsbuch* or *Book of War*), 1578. Royal Danish Library, Copenhagen, LN 367.

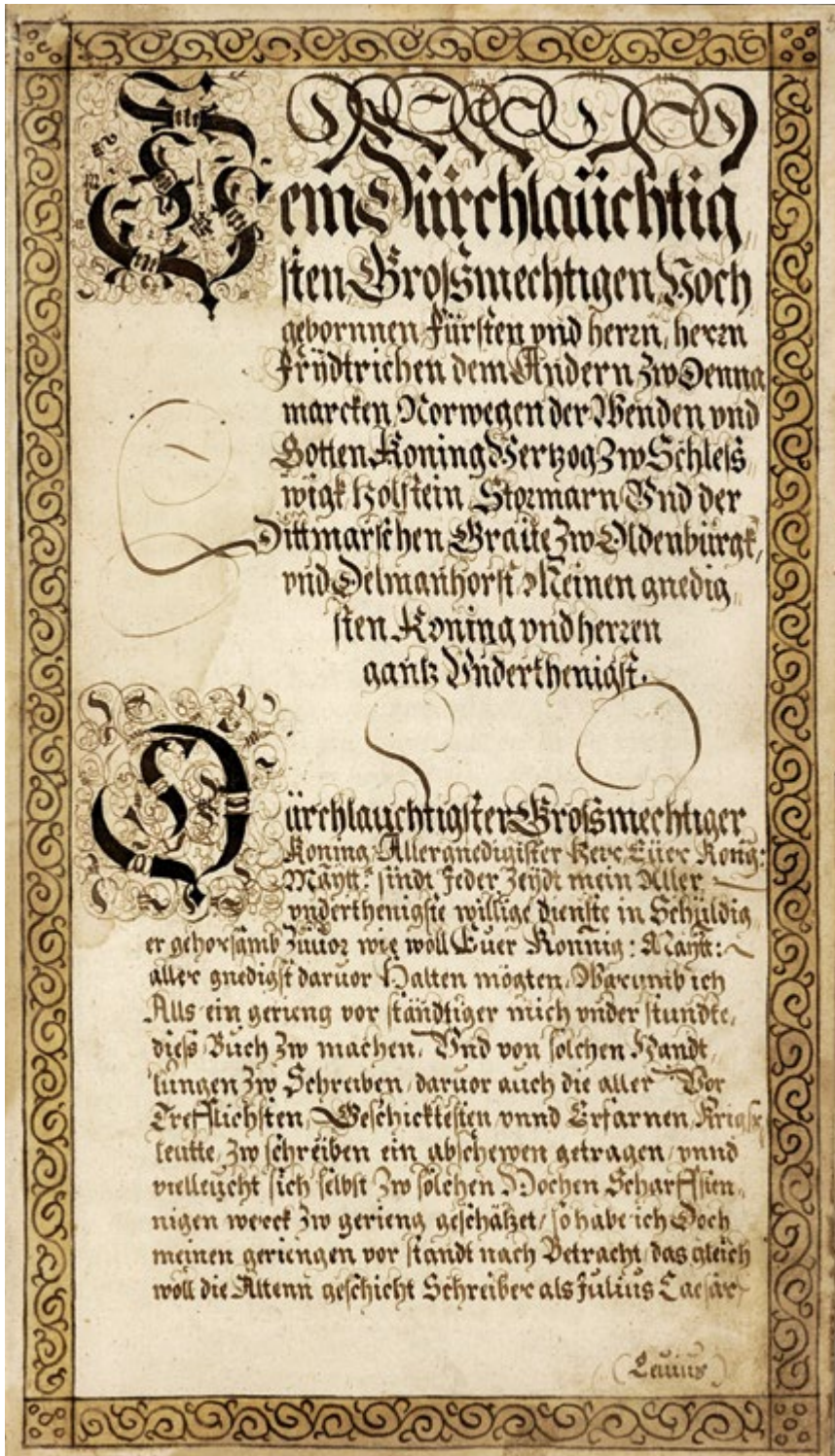


Fig. 2. Rudolf von Deventer. Dedication to King Frederik II in the manuscript *Bericht vom Pulver und Feuerwerken*, ca. 1585. Royal Danish Library, Copenhagen, NKS 101, 2°.

illustrations do not all match today, but both the text and images overlap to a significant degree.

The fourth work, from the seventeenth century, is also a royal manuscript, attributed to Carl Christman. This illustrated manuscript *Artillerey og Fyrvaerkeri Atlas* (Atlas of artillery and fireworks) completes the series of the four Danish fireworks treatises analyzed here (fig. 3).⁶ These pyrotechnic compendia provide an unparalleled overview of royal fireworks traditions in early modern Denmark. The focus here centers on their historical importance, authorship, and the book as a material object. My analyses also consider the practical construction of pyrotechnics and investigate actual fireworks displays for Danish court festivities. These royal volumes are the most splendid examples from a rich collection of early modern fireworks texts preserved in the Royal Danish Library. They must be numbered among the most important pyrotechnical books of the period, certainly in Denmark, perhaps in the whole of Europe.⁷ My new research into these books has uncovered previously unrecognized information and offers fresh perspectives on these volumes.

Early Modern Danish Pyrotechnics and the Book Historical Perspective

The full German title of King Frederik II's printed book firmly places the creation of martial and recreational fireworks in the realm of the arts, as craft and industry:

*Ein Buch zusammen gezogen, aus vielen probierten Künsten und Erfahrungen, wie ein Zeughaus sampt aller Munitionen anheimisch gehalten werden sol, Daneben auch von Salpeter, Schwebel, Kolen, Pulver, u. Etzliche Muster der Brechzeuge/ Feuerpfeil/ Wilde vnd Zame Sturmfewere vnd Wehr [...] Folgt auch hernacher ein Bericht der Wagenburgk [...].*⁸

(A book compiled from many proven technical arts and experiences, how an armory, together with all its munitions can be maintained, further also about saltpeter, sulfur, coal, and powder, and some examples of equipment for breaking [down walls, gates, etc.]/ flaming arrows, wild and controlled [tame] fire storms and defenses [...] followed by a report on circling the wagons [...])

Lorentz Benedicht (active 1551–1601) printed the volume in Copenhagen in 1578—apparently in a unique copy.⁹ From the book's historical perspective the fact that this magnificent folio volume was printed in a single copy is stunning. The book was beautifully planned and organized. Its

6. Royal Danish Library GKS 352 2°.

7. For a survey of Italian fireworks, see Hansen, 173–201.

8. My translation. Nielsen, LN 367. See also Bruun, Vol. 2, col. 331. This is the first section of the book (245 scanned pages) and it is followed

by the remaining seven titles. It is the most splendidly produced part of the book.

9. Ilsøe, 510. Paulli, x, states he was active from 1551–1601. The dates for Benedicht given in the CERL Thesaurus are 1561–1597: <https://data.cerl.org/thesaurus/cni00033745> (accessed 28 September 2024).



Fig. 3. Carl Christman. Title page to the first section of the manuscript *Artillerey og Fyrvaerkeri Atlas*, ca. 1650, showing a crowned "F" and the inscription "Carl Christma[n] fecit". Royal Danish Library, Copenhagen, GKS 352, 2°.

design and layout are magisterial: the text is clearly presented with a comprehensive index. The attention to detail is vivid, particularly with respect to the hand-colored woodcuts and drawings that were planned with great care. The pages for the images went through the printing press where they received textual features: page numbers, additional text for the illustrated pages, and even text printed sideways to accommodate images in an oblong format (figs. 4–5). The printing required a high level of expertise. These technical aspects of its production and its provenance



Fig. 4. A gunner loading his cannon. Hand-colored woodcut in *Ein Buch zusammengezogen* [...], 1578. Royal Danish Library, Copenhagen, LN 367.

Fig. 5. A gunner aiming his cannon. Hand-colored woodcut in *Ein Buch zusammengezogen* [...], 1578. Royal Danish Library, Copenhagen, LN 367.

confirm its origins in the uppermost levels of society. Only the ruler could afford to print such a magnificent work once. The exclusivity of its production reflected the intended exclusivity of its contents.

It is striking that Frederik II chose *not* to produce this volume in multiple copies. I know of only one other example from Denmark of a work being printed, but not published.¹⁰ In 1642 Frederik II's grandson, Prince-Elect Christian (1603–47) had printed Gabriel Voigtländer's hugely popular *Allerhandt Oden and Lieder [...]* in multiple copies for his court at Nykøbing Falster, with strict instructions to the printer to keep none for himself and to offer none for sale. These *Lieder* were for the exclusive consumption of the court. In this fashion, the prince could circulate copies of this work among his courtiers as a personal sign of favor, but the songs were not made public. He controlled the access to these fashionable *Lieder*. Of course, this example is many years later than Benedicht's publication of the fireworks book and does not compare with the printing of a single extravagant folio volume with many colored illustrations. However, the comparison does attest to the practice of controlling the printed products of the court.¹¹ Printing a beautiful volume in a single copy echoes the production of splendid manuscripts for elite consumption in the age before print. Like the manuscripts of an even earlier age, this printed fireworks book with its hand-colored woodcuts and drawings was also meant for a single person. By printing but one copy, the king exercised his royal prerogative by choosing not to reproduce this compendium of war knowledge but to hold it secret. King Frederik II alone controlled this highly specialized knowledge. It was printed, but not published. This book is unique; it was not for sale.

The most highly respected Danish book historians have long maintained that this work was perhaps printed as a single copy for the king.¹² Given the high level of expertise, time, and expense involved in printing such a beautiful volume, one can well understand their caution. Yet, over the centuries no other copy has been documented.¹³ Had the book been printed even in a limited number of copies, at some point another exemplar would have been documented in Denmark through the book inventories of nobility or royal collections. There is also no mention of the work in any documents, letters, or inventories concerning royal gift exchange. Considering the close ties between Electoral Saxony and Denmark and between Denmark and Mecklenburg during this period, there is no evidence that possible other copies were ever given to Prince Elector August of Saxony, King Frederik II's brother-in-law, or to his father-in-law, Duke

10. Wade 2001, 539–548.

11. Wade 2001, 539–548.

12. Werlauff, 11; Paulli, xxvii–xvii; Birkelund, 16–18; Nielsen, 29; Bruun, Vol. 2, col. 331; and Ilsøe, 506–507.

13. Leng 2010, <http://kdih.badw.de/datenbank/untergruppe/39/21> (accessed 28 September 2024). Last revised on 21 October 2023.