

## Introduction

Around the year 1600, waging wars and celebrating significant events at European courts made use of one and the same technology: the production of gunpowder. A presentation of how to design and manufacture artillery and fireworks for pleasure constitutes the main purpose of Rudolf von Deventer's manuscript *Bericht vom Pulver und Feuerwerken* [A *Treatise on Gunpowder and Fireworks*], dated c. 1585 and presented here in the original German and a modern English translation together with reproductions of the original illustrations. The manuscript (NKS 101, 2°) dedicated to the Danish King Frederik II (r. 1559–88) and an almost identical manuscript (Thott 273, 2°) dated 1585 and dedicated to the important court official Christoffer Valkendorf (1525–1601) form part of the collection at the Royal Danish Library in Copenhagen.<sup>1</sup> Both manuscripts provide lengthy descriptions and detailed instructions for producing weapons, including bombs, rockets and other types of firework. With their spectacular and lavishly coloured illustrations, which function as elucidations of the descriptions and take the form of large fold-outs spanning up to seven or eight times the width of the text block (Fig. pp. 332f [99]), the manuscripts constitute extraordinary historical sources of interest to scholars not only from research areas such as war and festival studies, but also from a broad field of research into material and cultural history.

As further described in “Some Remarks about the Two Rudolph von Deventer Manuscripts in the Royal Danish Library, Copenhagen and Their Transcriptions” by Lasse J. Bendtsen (pp. 22–29), the two manuscripts are by most measures identical; however, it is evident that pages have been removed from both of them. The decision to publish the transcription and translation of NKS 101 rather than Thott 273 relies on the royal



Fig. pp. 332f [99] and the corresponding illustration in Thott 273 (above).

dedication of NKS 101 and its richer layout with ornamented borders (Fig. p. 6). Two illustrations present in Thott 273, but absent in NKS 101, have been included in the publication (Fig. pp. 366f and 424f). See further elaborations on the comparison of the two manuscripts by Lasse J. Bendtsen.

## Rudolf von Deventer

Little is known about the author Rudolf (interchangeable at the time with Rolf or Rolluf) von Deventer (c. 1540–86). However, financial records, as well as a written source from the time, mention him as the Head of King Frederik II's Armoury since 1570 at the latest; and the dedication to the King of NKS 101 corroborates the author's proximity to the Danish court.<sup>2</sup> Without specifying his background, in NKS 101 von Deventer claims that he has achieved vast experience in the field of artillery while working not only for Frederik II, but in the service of "emperors and kings" as well as "other princes and lords" around Europe (p. 57 [16]). A glimpse of personal experience shows through in a detailed description of how to use carrier pigeons, visualized in an illustration of a besieged city where these pigeons play an important role (Fig. pp. 70f [1]), as von Deventer refers to military proficiency in this discipline in Spain (p. 59 [17]).

## Instructions and Formulae

Along with his emphasis on the novelty of the subject, von Deventer's detailed instructions and lists of ingredients and measurements follow a typical format of its time, when technical knowledge found its way into instructional texts and collections of formulae to an ever-increasing extent. Although von Deventer's instructions are only approximate, his endeavours in text and illustrations bear witness to the growing propensity at the time for systematic experiments and empirical investigation, resulting in advances in science and technology.

The manuscript is, furthermore, testimony to the wide array of materials used in the diverse objects and creations mentioned in it. It is not easily determined whether von Deventer had actual personal experience in producing the equipment described: his claims to have carried out some of the work with his own hands (p. 393 [113]) might simply be a rhetorical topos. Nevertheless, passages like von Deventer's promise that "you are certainly spared from misfortune" if you follow his methods (p. 101 [30]), and his meticulous description of how to create a fireproof safety hood and cloak (p. 331 [97]), seem to imply personal experience of the dangers of working with gunpowder.

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### folget das gewicht der Kitteren

Süß Pulver . . . . . lb. 5.

Süßen geleutert Salpette . . . . . lb. 5.

Süßen Schwöfel . . . . . lb. 1. Lot. 2 7.

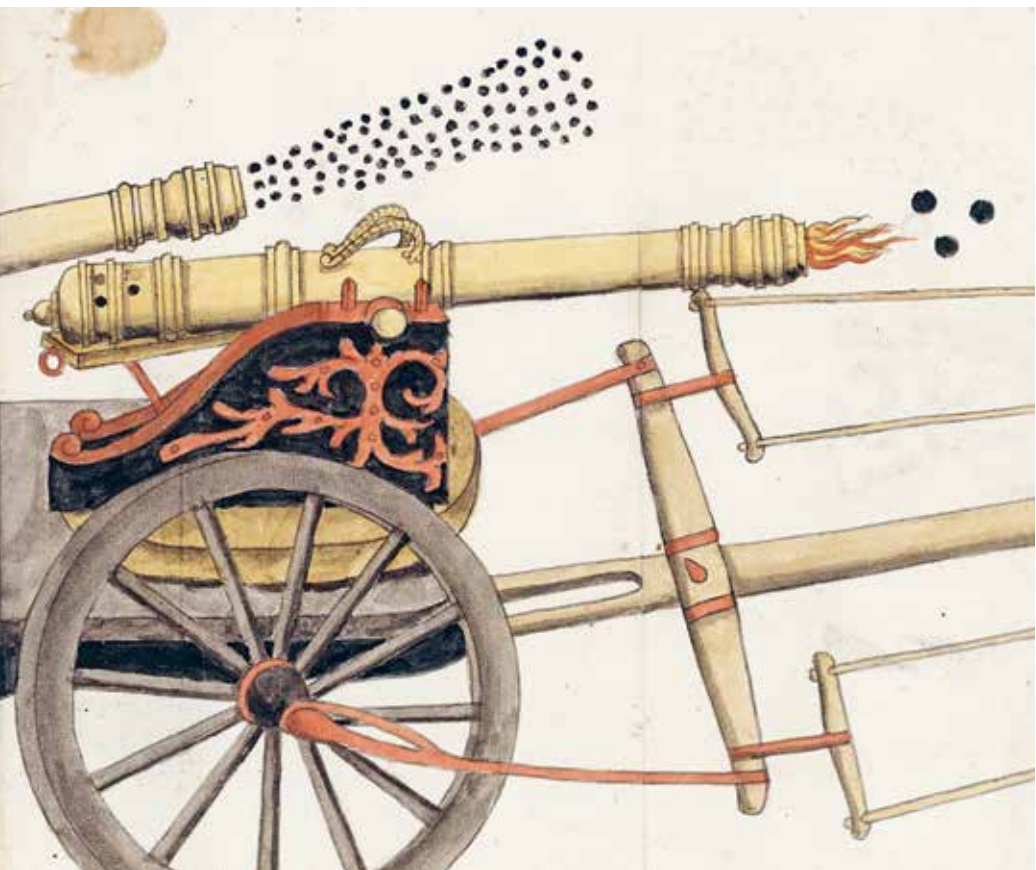
Schon klare Harz . . . . . lb. 1. Lot. 2 7.

Daz gegen wardtfiger gewichte kontt sie die kugell machen  
groß oder klein oder darnach sie das Stück kan trag.

## Horror and Harm

Gunpowder was introduced to Europe from China in the late Middle Ages and by the sixteenth century artillery had become an indispensable part of European military equipment, causing novel designs in the fortification of cities against fearsome canony. Von Deventer's account, however, starts off emphatically with strong reservations about these firearms. He writes about the "most abominable enterprise of shooting from firearms with gunpowder and bullets" and wonders whether the invention of artillery is God's punishment for a sinful world (p. 47 [11]). This distancing of oneself from firearms was current in the sixteenth century, as the new weapons were associated with cowardice, that is, the very opposite of the chivalrous virtues of personal bravery characteristic of the recent past. Accordingly, von Deventer observed "on how many different occasions the strong man is shamefully robbed of his life by the weak, the old man by the young, the wise and reasonable man by the fool, his own dauntless, chivalrous lord

Detail of Fig. pp. 154f [47].





Detail of Fig. pp. 268f [83].

by a good-for-nothing, lazy squire” (p. 51 [13]). However, his denigration of firearms also implies propaganda for their usefulness. Their dangerous and effective character justifies the relevance of his account, both regarding defence and offence. Von Deventer also seeks to legitimize his enterprise by stating that artillery is essential to the defence against the arch-enemies of Christianity, whom he refers to as “Turks” and “Muscovites” (pp. 41, 53 and 263 [7, 14 and 81]). In a particularly grim section, writing about what we would today call chemical weapons, von Deventer even states that such weapons should only be used against non-Christian enemies (p. 201 [66]).

The use of firearms for purposes of defence is pervasive throughout the book, but von Deventer also touches on battles at sea and on land, far from home, and on the sieges of cities (Fig. pp. 70f [1]). Still, it is worth noting that a significant amount of the equipment seems to have been designed simply to scare off the enemy. The loud bangs caused by the firing of artillery were in themselves terrifying and therefore effective as weapons.

## Fireworks and Celebrations

While the use of fire, bonfires and torches for celebration goes a long way back in time, the production of fireworks for pleasure became more widespread in parallel with the development of firearms. By the sixteenth century artistic fireworks

had become mainstream at celebrations at European courts. The rockets fired to ignite a besieged city were essentially the same as those fired on politically and culturally important occasions and on religious festivals. The cannon blasts which it was hoped would frighten away the enemy in times of war corresponded to the cannon fire and salutes announcing feasts and princely visits.<sup>3</sup> In describing equipment for celebrations, von Deventer speaks of “Lust Feuer Wergk”, fireworks for pleasure, to distinguish them from equivalent material used for military purposes. In Denmark fireworks took on an essential role in festivities, especially from the time of Frederik II and his son Christian IV. According to written sources, Christian IV even produced fireworks himself.<sup>4</sup>

The fireworks of the period were not just a show of light and noise, as they typically are today. Normally they did not yet display colours other than the colour of the fire itself.<sup>5</sup> Nevertheless, fireworks represented comprehensive allegorical compositions, staged through combustible “histories” or figures constructed in wood and papier-mâché and painted in colour. Von Deventer describes such a narrative in fireworks (pp. 365ff). The corresponding illustration is missing in NKS 101, but preserved in Thott 273 (Fig. pp. 366f [Thott 273, p. 63]). Here, a lansquenet ignites a figure of the Pope surrounded by monks in a typical statement of reformatory propaganda. This composition, von Deventer tells us, was part of the fireworks display in 1577, when Frederik II’s son Christian (IV) was baptized.

The allegories staged through ephemeral sculpture and fireworks were typically linked to a subject involving fire. A popular theme was the Virtues and Vices, in order to allow the celebrations to involve a battle between Good and Evil in the form of the Castle of Vice, which was besieged and conquered by the Virtues. Another popular motif was that of mythical, fire-breathing monsters, particularly dragons. Von Deventer’s book contains representations of dragons that could either be loaded with rockets or, judging from von Deventer’s description, simply constructed from very thin, light fabric in order to place them up against the wind (Fig. pp. 306f and 332f [91 and 99]).

Detail of Fig. pp. 306f [91].

