

# Nicodemo Trachedini's Diplomatic Cipher: New Evidence

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## Abstract

This paper discusses a newly identified letter, written by Francesco Sforza's diplomatic agent Nicodemo Trachedini da Pontremoli (1413-1481). The aim of this paper is to establish the date and purpose of this document and to offer a partial reconstruction of the code Trachedini used for it.

## 1 Introduction

In 1902 Nikolay Petrovich Likhachev (1862–1936), a Russian historian and antiquary, bought an encrypted fragment (a postscript) of a diplomatic letter. Judging by the signature, a certain Nicodemus wrote it from Florence on 23 February of an unknown year (The Scientific and Historical Archive of the Russian Institute of History, Russian Academy of Sciences, Saint

Petersburg, Coll. 48, Box 585, no. 35, f. 1). Thus, Likhachev added one more artefact to his large assemblage of cuneiforms, papyri and paper documents, which was one of the largest private collections in Russia at the time (Figure 1).

The sellers of this particular letter, the Charavet family from Paris or some other auction catalogue contributor, advertised it as a rare find to cast an additional light on the late medieval diplomatic practice. Since the document bore only the day and month (23 February), but not the year, they dated it to the reign of the French king Louis XI (1423–1483). They alleged that it reported on the diplomatic congress in Mantua, which was organised in 1460 by the pope Pius II to promote the idea of a new crusade (Figure 2).

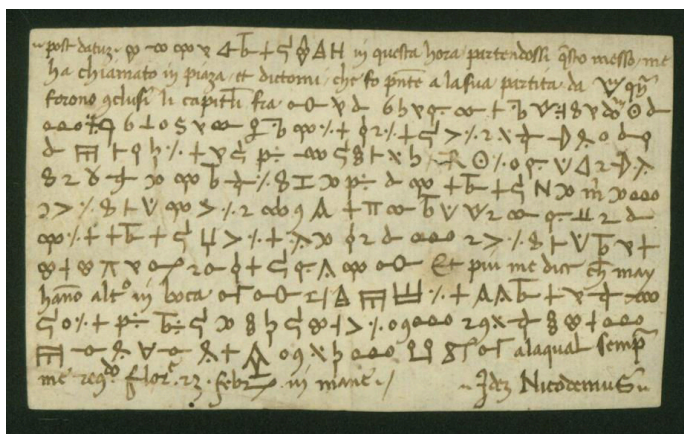


Figure 1. The Scientific and Historical Archive of the Russian Institute of History, Russian Academy of Sciences, Saint Petersburg, Coll. 48, Box 585, no. 35, f. 1r (with permission)

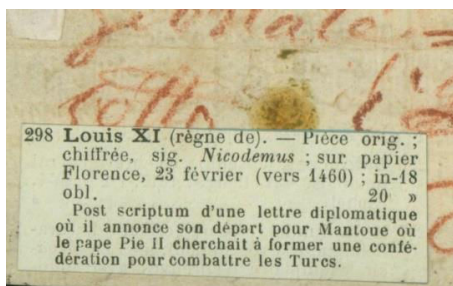


Figure 2. The Scientific and Historical Archive of the Russian Institute of History, Russian Academy of Sciences, Saint Petersburg, Coll. 48, Box 585, no. 35, f. 1v, detail (with permission)

Such an intriguing description definitely worked well to spark collectors' interest in this document, but at the same time did not cite any credible source for such an attribution. Indeed the early twentieth century witnessed a rise of interest towards medieval and Renaissance cryptology. It was at that period that Aloys Meister published his research on Italian ciphers (Meister, 1902). In this sense Likhachev was in a good company when he purchased this encoded document from the Charavet antiquaries. At the same time, he evidently never seriously attempted to decode this letter.

Today the study of this encoded letter could add to the discussion on how Italian Renaissance cryptology evolved and, most importantly, whether there was any difference between the codes devised by scholars and those employed in the daily diplomatic practice (Buonafalce, 2008:64). When trying to find answers to these questions one should definitely take a closer look at this encoded letter from the Likhachev collection and establish its author, contents, receiver and purpose.

## 2 The author of the letter

On a wrapper of this document Likhachev left a note, suggesting that it was written by Nicodemo Trancedini da Pontremoli (Figure 3). However, during later cataloguing of the Likhachev's collection this attribution was not taken into consideration. Throughout the Soviet era, when the majority of Russian scholars working with this collection had no access to the foreign archives, it was impossible to check whether

Likhachev's attribution of this letter to Trancedini was correct or not. Now this can be done by studying Trancedini's holographs from the Italian archives.

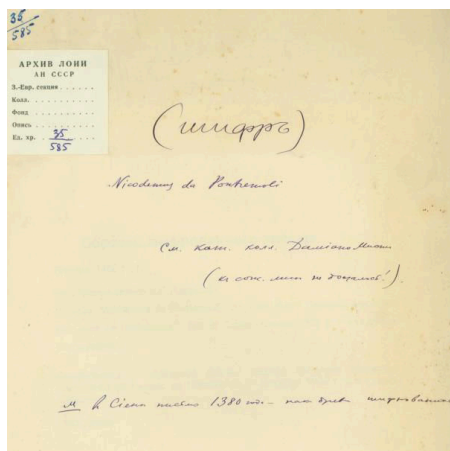


Figure 3. The Scientific and Historical Archive of the Russian Institute of History, Russian Academy of Sciences, Saint Petersburg, Coll. 48, Box 585, no. 35, wrapper (with permission)

Nicodemo Trancedini da Pontremoli (1413-1481) was one of the most faithful and long-standing diplomatic agents of Francesco Sforza (1401-1466), both before the latter rose into power and afterwards. He received a humanistic education, taking keen interest in collecting and studying Latin and Greek manuscripts. A Florentine by birth, Trancedini worked for Sforza in his home city-state, enjoying continuous favour of the Medici family. As Sforza's representative, he also resided in Rome and Genoa, among other places (Sverzellati, 1998). Famous for his impact on the formation of the diplomatic letter *per se*, Trancedini left behind a large amount of correspondence, currently preserved primarily in the State Archives of Milan (Archivio di Stato di Milano, Carteggio Visconteo Sforzesco, *passim*).

Comparing Trancedini's alleged signature from the document in question to his signatures on his letters in the Milanese State Archives I was able to conclude that it was indeed his own, but not from the 1460s or even later, contrary to the Charavet attribution. Further study of Trancedini's correspondence showed that in the

1450s he primarily resided at the papal court, and thus the letter should be attributed to the 1440s, when he visited Florence as Sforza's agent.

### 3 Tranchedini's diplomatic cipher

In order to prove this hypothesis one should look at the code itself and search for its key. The most obvious starting point would be the cipher collection of his son Francesco Tranchedini (c.1441–c.1496), preserved in several copies. Mentored by Cicco Simonetta (1410-1480), the ducal secretary, Francesco served the Sforza family alongside his father. He listed Nicodemo's cipher on fol. 3r of his treaty (Cerioni. 1970, II; Hoeflechner, 1970). As L. Cerioni established (1970, I:6-7), it was employed from about 1471 until 1478. This particular nomenclator consisted of 253 signs, 55 – for letters, 12 – for double letters, 8 – for nulls, 65 – for syllables, 113 – for words.

When compared to the code of the letter in question, it did not match. This means that the encoded postscript belonged to the earlier date. After that I could only hope for some good luck, combined with thoroughly check through Nicodemo's letters from the 1440-1450s. The search through Tranchedini's correspondence from the 1440s returned neither similar encoded letters of his, nor the original letter to which this postscript belonged.

However, the search through Nicodemo's letters from 1450s bore some fruit. Not only did I find a document with a cipher identical to the letter in question but also a partial deciphering of the code (Archivio di Stato di Milano, Carteggio Visconteo Sforzesco, 41, no. 106, fol. 1, 11 March 1454, Rome). Judging by the handwriting, it is evident that Cicco Simonetta deciphered this passage himself. Then his addition was glued with wax over the ciphered text. (Figure 4). Taking this fragment as a starting point and using simple substitution analysis, I was able to reconstruct the code (Figure 5).

This nomenclator consisted of 81 signs: 36 for letters, 4 for double letters, 1 for nulls, 30 for syllables, 11 for words. It is incomplete since no other extant examples of this code seem to have survived in Tranchedini's correspondence from the 1450s in the State Archives of Milan. It is also important to underline that certain signs from the 1453 letter had a different meaning compared to that in the postscript. This means that the code was evolving over the time. However, since no other pieces of this code are available now, it is not possible to establish how often Simonetta changed Tranchedini's nomenclator.

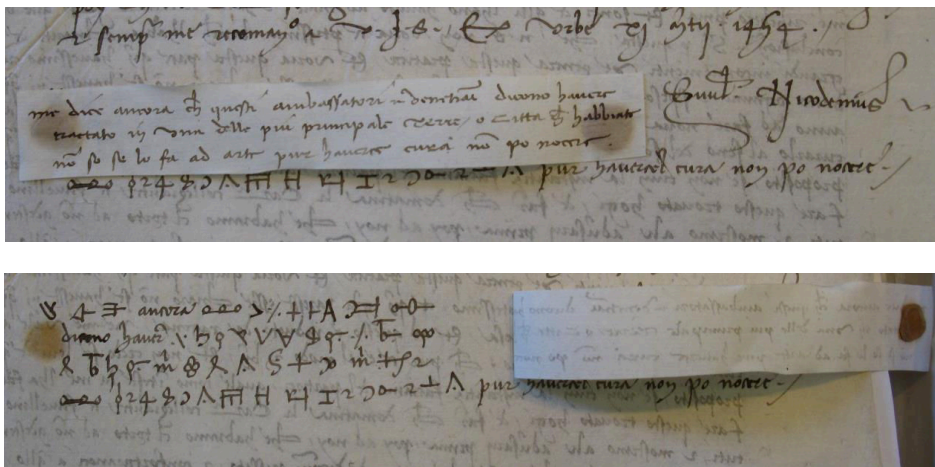


Figure 4. Archivio di Stato di Milano, Carteggio Visconteo Sforzesco, 41, no. 106, fol. 1v, 11 March 1454, Rome, a fragment (permission no. 4218/28.13.11/13, 24/2017 issued on 18.07.2017)

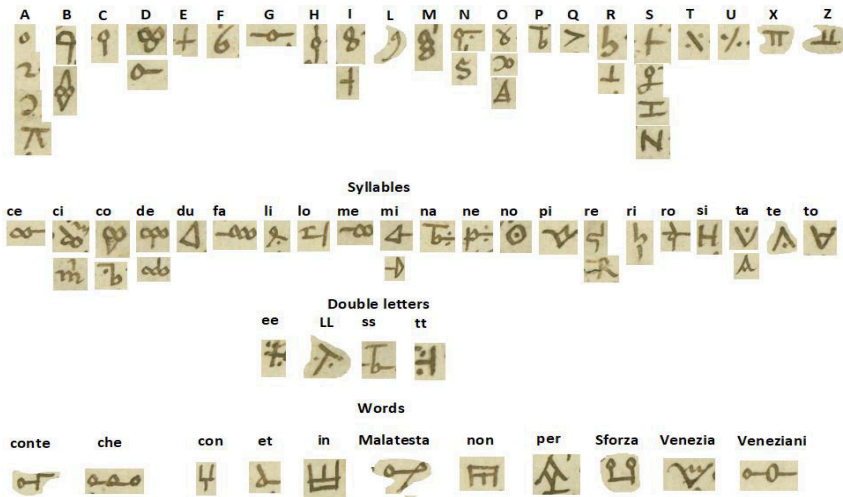


Figure 5. A reconstructed nomenclator for Tranchedini's cipher from the Likhachev's collection

#### 4 Contents and dating of the document

When analysing the reconstructed contents of this postscript one could easily conclude that the key figure to understand and interpret it is condottiere Francesco Piccinino (or Pitticino) (c.1407– 16 October 1449) (See Appendix 1).

When on 13 August 1447 Filippo Maria Visconti, the Duke of Milan, died and the Ambrogian republic was proclaimed, it continued its rivalry with Venice for the control of the river Po valley. Condottieri Jacopo and Francesco Piccinini, as well as others, used these adversities to enrich themselves by constantly switching sides in return for lucrative payments from Milan and Venice. Francesco Sforza also participated in this worrisome diplomacy, awaiting an opportunity to seize power from the republicans in Milan. On 18 October 1448 he and Venice concluded an alliance at Rivoltella, which upset Francesco Piccinino's plan to get employment from Venice. Instead, in late autumn 1448 Piccinino allied himself with Sforza to make him pay for his troops' winter expenses, but then, in the following spring he defected to Milan (Ferrente, 2005:28).

It is most probable that this postscript belonged to the letter that Tranchedini wrote to Simonetta in February of 1449 as he witnessed

these events. At least, there is firm evidence that in January of this year he negotiated with the Florentines to win their support for Sforza and succeeded in this endeavour, providing him with 20.000 florins on their behalf (Zaccaria, 2015:33-34, 371).

#### 5 Conclusions

Firstly, the letter should be dated 23 February 1449 and was almost certainly intended for Simonetta, who stood behind Tranchedini's mission to Florence in January 1449. Secondly, it is not yet clear where the main part of this letter is, if indeed it is preserved. Thirdly, the document adds new data to the discussion about how Sforza prepared to conquer Milan, which he did in early 1450. Finally, Tranchedini's cipher in this postscript differs from the sophisticated ciphers presented by his son in his cryptologic collection, which could indicate that there might have been a significant difference between cryptologic theory and its practical implementation in Renaissance Italy. The study of these differences could help to establish the way the cryptographic methodology evolved not only in Italian states, but also in other European countries, which followed their example.

## Acknowledgments

I would like to thank the wonderful staff of the Scientific and Historical Archive of the Russian Institute of History, Russian Academy of Sciences, Saint Petersburg and Archivio di Stato di Milano for helping me with my research and for granting me permission to reproduce images from their collections. I am also grateful to the anonymous reviewers of the HistoCrypt 2018 team for their comments on this paper and to Dr Justine Roehmel for her continuous support of my research work.

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## Appendix 1. [Nicodemo Tranchedini a Cicco Simonetta]

Post datur come de missere Bossi?<sup>1</sup> in questa hora partendossi questo messo me, ha chiamato in piazza et dictomi, che fo pronte a la sua partita da Venezia, quando forono gelusi li capitoli fra veneziani et Francesco Pitticino et che ebe Francesco deve avere quatro milla etc et non scrivere?, ne fare mostrare novanta dua millia d'oro o de provisione et de essere socio, che aquista de qua delta, excepta Piacenza, et deve essere con? quello ha et che aquista pe[r] di da Malatesta? adherente de venetiani. Et più me dice, che may hanno altro in boca conte? venetiani lo o non invetassero[sic] fare avenenare o morire di qualche altro modi che non gli toglie per? altro che Sforza. ill. conte, ala qual semper me raccomandando. Florentiae, 23 febr. in mane ides? Nicodemus

The Scientific and Historical Archive of the Russian Institute of History, Russian Academy of Sciences, Saint Petersburg, Coll. 48, Box 585, no. 35. f. 1r

### Translation

#### [Nicodemo Tranchedini to Cicco Simonetta]

P.S. From mister Bossi?, leaving at this hour, he sent for me, called me in the square and told me he was ready to leave Venice when the agreement between the Venetians and Francesco Pitticino was stalled and that Francesco had and should have four thousand etc. In addition, neither he should sign? [an agreement], nor demonstrate ninety two thousand in gold or under condition to be an ally, that he obtained at this delta [of Po], save for Piacenza, and he should keep those [lands] he already has, which he has just conquered from Malatesta?, the Venetians' ally. In addition, he told me that never did the Venetians plot to poison or kill the count? by any other means and that they would not change Sforza, the illustrious count, for anyone else, to whom I always commend myself. Florence, 23 Febr. In the hand of Nicodemus

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<sup>1</sup> Question mark indicates the signs, the meaning of which is not 100 per cent certain.