A “Mirror for All Traitors”. Captured Ciphertexts
from a Portuguese Spy in Dutch Brazil (1646)

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Abstract

A deciphering report found in the National Archives at The Hague presents an intriguing story. A Portuguese spy inside the walls of Recife gathered information about the Dutch defences and wrote it in encrypted letters addressed to the Portuguese rebels that besieged the heart of the Dutch West India Company (WIC) administration in Brazil. The encrypted letters were delivered to the Dutch authorities, who summoned a Jewish cryptanalyst to read them. The report of Abraham de Pina contains a detailed description of the process he used to decipher these letters and presents the complete content of all four ciphertexts. In this paper, we will reconstruct the events of this case and analyze the design of the nomenclature cipher used by the Portuguese rebels. We also will present the flow of information of these intercepted letters within the WIC in Brazil and between them and their company superiors, the Gentlemen XIX, in the Netherlands.

1 Introduction

A group of Portuguese collaborators in Brazil rebelled against the Dutch in 1645, starting a war to reclaim the territories occupied by the WIC (Dutch West Indies Company) since 1630.1 The conflict lingered until 1654 when Dutch forces capitulated. In the early years of the revolt, the Portuguese held Recife and Mauritsstad under siege. This paper focuses on events that occurred during the siege when WIC forces struggled with the lack of supplies and support from the Netherlands. In this context, Portuguese spies in Recife used ciphers and signal communication to inform the rebel army about the Dutch situation.2

On May 8 1646, Antonio Bugalho ("a mulato from Angola") delivered a little box with hidden encrypted letters to the High Council of Recife in Dutch Brazil. He was ordered to deliver this box to the Portuguese rebels by João Vieira d’Alagoa,3 one of the last Portuguese who remained in Recife pretending loyalty to the Dutch. Vieira’s decision to spy on the Dutch can be attributed to his debts to the company and his involvement in exploring Brazilwood4 as a contractor for the WIC, which provided opportunities for him to establish connections and gather information from Dutch officials.5 There are elements to believe he turned against the Dutch at least since 1644 when other rebels visited him and helped to design the cipher he used. Bugalho’s betrayal leads to the imprisonment of João Vieira d’Alagoa. A search of Vieira’s house revealed more ciphertexts and notes in Portuguese, proving that he was responsible for the espionage and secret communication. On May 29 1646, Vieira was found guilty of high treason by the Dutch based

1 Araújo (2022) p.2-7.
2 As Comissoli (2021: 7) indicates, "The Iberian Atlantic witnessed many espionage actions, although mentions of this are non-systematic and most reports were secondhand, narratives in which other people mentioned spies. Reports written by spies are rare. Similarly, identifying their names is difficult, since the need for discretion led them not to sign their messages."
3 “d’Alagoa” is not a surname for João Vieira. It is probably a reference to where he lived in Pernambuco, which used to differentiate him from others since João Vieira is a common name in Portuguese.
4 Brazilwood is a timber tree used to make red dye.
5 Hoge Raad, 1644.
on three pieces of evidence: (1) the decipherment of his ciphertexts, (2) the testimonies of Francisco Ribeiro (another Portuguese who still lived among the Dutch) and Antonio Bugalho against him, and (3) his own confessions. For these actions, he was rigorously punished "as a mirror for all traitors" (Kort Discours Rebelye, 1647: on 30th of May). Dutch authorities confiscated all his goods and properties; he was then publicly executed. They displayed his head on a stake, then quartered and hung his body on half gibbets.

The ciphertext from De Pina is a five-page manuscript found in the WIC documents at the Dutch National Archives, in The Hague, the Netherlands. The description made by the archivist6 reads: “Statement by Abraham de Pina, in which he gives the key to the number- and secret scripture that members of the Alto Segredo Concilio and the Concilio da Justicia are using in correspondence with him, and letters deciphered with the aid of it. May 1646.”

In this paper, we will show that the archivist of the National Archives made a mistake. De Pina was the cryptanalyst, and João Vieira d’Alagoa was the spy that used this ciphertext to communicate with the enemy. Understanding the different roles of these two characters helps us to comprehend more about the use of cryptography in this particular context.

![Figure 1: Eleven ciphercode nomenclature elements and their plaintext-words from De Pina (1646).](image)

The paper is organized as follows: In Section 2, a reconstruction of the cipher that De Pina received is presented alongside an analysis of his corresponding notes on the rules governing it. Through this comparative approach, we aim to assess De Pina’s aptitude in cryptanalysis. Section 3 shows the key players and the complete trail of the spy letters within the Dutch administrative process. Section 4 examines the conviction of João Vieira d’Alagoa for sending letters to the enemy and investigates whether he was falsely accused. It analyzes the plausibility of this case by contextualizing it and scrutinizing the espionage report in light of information about Dutch defenses in Brazil. Finally, Section 5 concludes this paper.

2 De Pina’s Cryptanalysis in Dutch Brazil

Abraham de Pina, also known as Aarão de Pina or Aarão Sarfati (his Jewish name), was a merchant of Iberian descent who arrived in Dutch Brazil in 1636. 7 Despite historical evidence suggesting that his correct name is Aarão Sarfati, we will use Abraham de Pina for consistency since it is the name presented in our source.

Not long after the arrest of João Vieira d’Alagoa, Dutch officials asked Abraham de Pina to decipher the ciphertext that Vieira tried to send to the Portuguese rebels. For several days employees of the WIC tried in vain to decipher the four letters, having the two written pages with the Portuguese alphabet at their disposal. On the other hand, De Pina managed to read its contents using his knowledge of cryptanalysis: “by a certain count table or alphabet what each number means” (Hoge Raad, 1646a).

The ciphertexts and other evidence found in different sources (court records and printed accounts) provide clues of what kind of ciphers were used 377 years ago. According to David Kahn, the nomenclature cipher was the predominant cryptographic system during the early modern period. This system “usually had a separate cipher alphabet with homophones and a nomenclature list of names, words, and syllables. This list, originally just of names, gave the system its name: nomenclature” (Kahn, 1996, xvii).

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6 Based on a wrong interpretation of Appendix 4, lines 1-5.
7 In Recife, he acted as a rabbi and sometimes worked for the Dutch as a contractor, making shirts for the soldiers, extracting brazilwood and as translator. De Pina received four enslaved negros as payment for his deciphering work. With the fall of Dutch Brazil in 1654, he returned to the Netherlands, where he died in 1670. Mello (1989) p.389-390.
2.1 Sheets “Written With the Portuguese Alphabet”

We found evidence that the Portuguese spies used the nomenclature cipher in Brazil. The book of criminal punishment of Vieira (1646) registers that four sheets were uncovered at the detainee’s residence within a cabinet. Two of these were written “full with numerical characters” and the other two were “written full with the Portuguese alphabet”. The pages with the Portuguese alphabet must have been the nomenclature used by the WIC employees and De Pina because the Portuguese and Dutch alphabets are identical Latin alphabets. Since the nomenclature is a list of words, the pages found with Portuguese words in alphabetical order (A, Ao, As, Até, and so on) matches the description.

2.2 Design of the Cipher

Initially, we analyze the distribution of cipher codes and plaintext. The pattern behind De Pina’s output in the report to the High Council and the Councils of Justice in Brazil is presented in Table 1. For the complete design, see Appendix 1. Figure 1 and Table 2 depict the actual distribution of plaintexts over cipher codes.

![Table 1: Part of the pattern of the cipher.](image)

<table>
<thead>
<tr>
<th>Ciphercode</th>
<th>Plaintext</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>171</td>
<td>comer</td>
<td>eat</td>
</tr>
<tr>
<td>171</td>
<td>comer</td>
<td>eat</td>
</tr>
<tr>
<td>201</td>
<td>de</td>
<td>of</td>
</tr>
<tr>
<td>474</td>
<td>tem</td>
<td>has/ have</td>
</tr>
<tr>
<td>1004</td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

Table 2: Example of De Pina’s actual distribution of plaintexts over codes.

Plaintext letters are randomly coded with the first letter range below 504, wherein words beginning with A fall between 1 to 139, B from 145 to 164, C from 167 to 198, and so on. However, exceptions lie in words starting with M as they range from 309-330 and 495-503. The order of the second letter in each word appears to be random and does not adhere to either an ascending or descending alphabetic sequence. Some plaintext words (14 times) and plaintext numbers (3 times) have two cipher codes, thus, it’s homophonic. For example, the plaintext word Angola has the codes 8 and 108. The plaintext number 300 has the codes 300 and 1300.

The plaintext numbers are represented in range above 1,000. There are only two exceptions. First, plaintext number 300 falls into the range of the plaintext words (1 to 503). Secondly, the sixth day of the week, sexta-feira in Portuguese (English: Friday) has code 6, which is in the first letter range of A.

In addition to that, certain cipher codes incorporate the symbol # (in 16 of 472 codes). Also, it is clear that all four cipher letters that De Pina deciphered used the identical nomenclature.

Probably, De Pina did not have the complete nomenclature at his disposal. As we see in Appendix 4, line 119-120 there are four cipher codes that he did not manage to decipher.

2.3 De Pina’s Explanation

De Pina provided an explanation for the rules he utilized to decipher. In his report, he gives details about the cipher rules (Appendix 4, lines 20-28): “It is warned that the author to write his cipher almost always uses one less than the one he points out, because 474 is 473 and 352 is 351, as I will soon show, and only a few rare times he uses right number and use this sign # and especially the number 201, which he always uses right to it when he wants to say (de). (…) when it says 474, that as I have said, one less is 473, it means TEM and number 352, I less means HOLLANDEZES.” To summarize, De Pina explains the following rules applied to read the cipher (see Table 3):

- A code without the symbol # means code number minus 1.
• A code with the symbol # means code number minus 0.
• The code 201 is minus 0 and means “de”.
• The words “not [listed] in the alphabet” are written without a code.

De Pina’s report states that the cipher was created by the author along with two Portuguese individuals who had visited Vieira a year prior (Appendix 4, lines 36-39).

2.4 De Pina’s Skill in Cryptanalysis

According to the rules explained by De Pina in the report (see Subsection 2.3) and the distribution of plaintexts over codes (see Subsection 2.2), we conclude that he made some mistakes in the report, in approximately 11% (50 out of 472) of the 472 codes analyzed. These are the mistakes of De Pina:

• Assigned the wrong plaintexts to codes. For example, code 154 for plaintext hun (1 time) should read bastimento (1 time) in the range of letter B.
• Assigned the wrong codes to plaintexts with a difference of 1. For example, code 377 had plaintext podemos (1 time). We also have code 377 for por (4 times) and code 378 for pelos (1 time). It should have read 378 podemos. We identified this as a code error minus 1.
• Assigned the wrong code to a plaintext. Code 258 had plaintext fora (1 time). We also have 258 for forte (7 times). Based on frequency analysis, the plaintext forte should have been assigned to another unknown code in the range of letter F.
• Used words that fit in another range by Portuguese pronunciation.
• The valuation of a mistake is uncertain in the case of code 1105, which produces plaintext 15 (1 time). It remains unclear whether the error lies with the code or plaintext since a correct reading would yield either 105 or 1015. The discrepancy bears relevance to military strength as it pertains to determining whether there are either 105 soldiers in a fort or just 15.

Most of his 50 mistakes (see Table 4) were minor mistakes. Only in five cases did he pick the wrong plaintext that yielded another reading: lhe (English: you) instead of the correct he (English: is); com (English: with) instead of tem (English: has/ have); hun (English: one) instead of bastimento (English: supply); e (English: and) instead of paraiba (English: paraiba). The last mistake with e, he made twice.

It is important to note that De Pina wrote the report using the rule “one less” in the plaintext cases. In the report, he indicates: “when it says 474 one less is 473 it means tem”; however, the report uses code 474 for the plaintext tem. Another example: “when it says 352 one less is 351 it means hollandezes”; meanwhile, in the report, code 352 is used for plaintext hollandezes. In other words, the report presents the cipher code from the original letters and its reconstructed plaintext.

<table>
<thead>
<tr>
<th>Count</th>
<th>Carta3</th>
<th>Carta2 (1)</th>
<th>Carta2 (2)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved plaintext</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Improved code sorting</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>consecutive</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>minus 1</td>
<td>3</td>
<td>1</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>missing</td>
<td>3</td>
<td></td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>mistake</td>
<td></td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>split</td>
<td>2</td>
<td></td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>wrong</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Fits in range by</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portuguese pronunciation</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Uncertain improvement</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>9</td>
<td>20</td>
<td>50</td>
</tr>
</tbody>
</table>

Table 4: Mistakes made in letters (Portuguese: cartas).

De Pina accomplished what the WIC staff couldn’t, even with access to the key. It appears that he had previous expertise in cryptanalysis before his arrival in Dutch Brazil. What specific abilities and knowledge were demonstrated in his report?

De Pina was knowledgeable about nomenclatures, which are ciphers that use a list of words assigned to codes. He also discovered an additional security layer known as “super

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8 In the Decode Database at record 1861, you can find the complete document with all original and reconstructed codes, plaintexts, and analytics.

9 Maybe this is not a mistake. In the 17th century there was no rigorous grammar style. H has a mute sound in Portuguese, it is not spelled in most words.

10 Dinnissen and Araújo (2022) and Jütte (2015).
encryption”, where he applied specific rules such as subtracting 1 from the cipher code without symbol # and subtracting 0 from codes with symbol #. Furthermore, he used frequency analysis to decipher certain words like “de” by assigning the code 201 minus 0.

Our analysis evidentiate De Pina’s expertise in cryptography, especially during the short span of time he dedicated to decipher the ciphertext. Besides that, this episode sheds light on the pivotal role played by espionage and cryptology in colonial disputes across the Atlantic.

3 Flow of Information

In this section we demonstrate the flow of information within the administrative process of the WIC. Appendix 2 depicts the exact names mentioned and the information concerning ciphertexts in the sources.

3.1 The Events of May 1646 in Dutch Brazil

On May 8 1646, Antonio Bugalho (referred to as a “mulato”\(^{11}\)) brought a little box with some letters written with numerical characters from João Vieira d’Alagoa to the High Council in Recife. That same day the Dutch arrested João d’Alagoa and Francisco Ribeiro. These two characters were part of the few Portuguese who still lived among the Dutch after the insurrection of 1645 (Kort Discours Rebellye, 1647).

A week later, on May 15th, Antonio Bugalho requested a third of João Vieira d’Alagoa’s confiscated possessions. Since he betrayed the latter, Bugalho stated that he could not return to his fatherland (Angola) due to fear of Portuguese revenge. Van Walbeeck acknowledged Bugalho as a poor young man who understood the concept of reporting, which granted the right to receive one-third of the offender’s possessions (Bugalho, 1646).

When the High Council registered these events on May 16th, they did not mention Bugalho’s name. They described the actions of a Portuguese defector from Angola who delivered to them a little box with encrypted (Dutch: gecijferde) parchment and some papers from João Vieira d’Alagoa. After being imprisoned, Vieira was tortured and denied being the owner of the letters. The register of the High Council indicates the fiding of similar encrypted papers, but it does not mention the location of the discovery. This source also did not mention De Pina’s name and register that “a certain person from the Jewish nation” found the decipherment using “a certain count table or alphabet”. Later, the High Council summoned this person to explain his method. The Jewish cryptanalyst told the High Council that the deciphered letters contained instructions about how the enemy could attack and invade Recife (Hoge Raad, 1646a).

In May 1646, without an exact date, Abraham de Pina wrote a report with the deciphered four ciphertexts written to the enemy between April and the beginning of May. This report does not mention the name of the sender. De Pina indicates it throughout the text as “the author”. However, De Pina indicates that the invention of the nomenclature and additional steps were made by the author in his house, together with Brás Afonso and Manoel João, both described as “from the other side”, i.e. Portuguese rebels. The encrypted letters contained valuable military intelligence, including details on the number of ships and their weapons, fort locations and troop maintenance. The content also provided information on tactics for attacking and communicating specific details through signals regarding food supply, health status, ship transit schedules to destinations like Holland, Guinea and Angola. For a complete transcription and translation of De Pina (1646), we refer to Appendix 4.

On May 29 1646, João Vieira d’Alagoa was convicted for high treason because he corresponded with the enemy. Dutch officials found at the house of Vieira more encrypted letters in the same handwriting. Francisco Ribeiro testified that he saw Vieira cut pieces from a book on which he wrote the ciphertext. These cut pieces fit the indicated book found in Vieira’s house. Faced with the evidence, Vieira confessed that the

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11 “Mulato” is a derogatory word in Portuguese and Dutch for describing people of mixed race. Mello (1985) p.222.
letters were indeed his property. See Appendix 3 for the complete transcription and translation of Vieira (1646).

In their daily minutes, the High Council wrote on May 28 1646 (sic) about João Vieira d’Alagoa conviction for sending letters in numerical characters to the enemy. The council showed certainty that he wrote these letters (Hoge Raad, 1646a).

The High Council wrote to the Gentlemen XIX on June 4 1646, a letter in favour of Antonio Bugalho, who came from Angola with the yacht Heemstee. They paid Bugalho 75 guilders for handing over the box with the letters to them and not to the enemy. On his request, Bugalho went to the fatherland, i.e. the Netherlands. The High Council asked the Gentlemen XIX to give Bugalho an “important and pleasant work” since his favour was meritorious to their state (Hoge Raad, 1646c).

At last, the High Council wrote to the Gentlemen XIX in their periodic report on June 21 1646. They indicated that under letter F was a copy of the deciphered (sic) advice (Dutch: ontciferde advies), informing that João Vieira d’Alagoa intended to send secret messages to the enemy and for that he received a conviction on May 29th (Hoge Raad, 1646b).

### 3.2 List of Documents

In the Letterbook (1646) dated approximately June 21 1646, contains a list of relevant documents, ordered alphabetically, for this case:

- Letter F. Copy of an encrypted letter (Dutch: geciferde brief) written by João Vieira d’Alagoa.
- Letter L. Periodic report from the High Council.
- Letter W. Extract from the criminal verdict against (Dutch: tegens) Joan Fer(nan)do Viera.
- Letter Y. Antonio Bugalho mulato.
- Letter Z. Extract from the criminal verdict about (Dutch: over) Joan Fer(nan)do Viera.

In Subsection 3.4, we’ll explain more about the reconstruction of this letterbook.

### 3.3 Flow of Information Between Brazil and The Netherlands

The package with letters gathered around June 21 1646, arrived in the Netherlands approximately six weeks later, probably in the first or second week of August. We could not establish if the Gentlemen XIX used this information or if it changed their policy in Dutch Brazil since there are no preserved (secret) minutes of this period.

However, we identify that on October 23 1646, the Gentlemen XIX (1646) sent orders to the High Council Brazil, replying to their report of June 21st. There is no mentioning of João Vieira d’Alagoa’s conviction or his ciphertexts. Not even a word about Antonio Bugalho and Francisco Ribeiro. There is a complete silence about the information received about the Portuguese. This information most likely had no direct impact on their strategy in Dutch Brazil. At that time, they had other concerns, like sending troops and supplies to break the siege of Recife and establishing a blockade of Salvador (the capital of Portuguese Brazil) to diverge the Portuguese attention away from Pernambuco.

The siege almost led to the capitulation of the Dutch. As Araújo (2022: 11-12) explains, the capitulation “was only prevented by the arrival in August 1646 of a WIC fleet bringing supplies and military reinforcements. (...) After alleviating the hardships caused by the siege of Recife, the Dutch authorities decided to go on the offensive”, launching a naval blockade on the city of Salvador.

### 3.4 Jan Veeira and João Vieira d’Alagoa are One and the Same

It cannot be directly confirmed that Jan Veeira and João Vieira d’Alagoa, who was convicted on May

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12 The date reads: 1646-1-4. This information must be an error of the clerk. The arrest of Vieira was on 1646-5-8 and this letter went with the package around 1646-6-21 to the Netherlands. Month must read: June.

13 In Hoge Raad (1646b) it reads "deciphered". In Letterbook (1646) it reads "encrypted". In Dutch ontciferde versus geciferde. They are opposites!
29 1646, are the same person. However, by analyzing fragmented evidence from various sources such as the Kort Discours Rebellye (1647), Bugalho (1646), Hoge Raad (1646a, 1646b, 1646c) and Fonseca (1646), we can conclude that they refer to one individual. It should be noted that João Vieira is a common name among the Portuguese which could lead to confusion. Therefore it is important not to confuse João Vieira d’Alagoa with rebel leader João Fernandes Vieira solely based on their shared names.

Additional details regarding this case can be found in Appendix 2 where each source’s contribution is explained more extensively.

<table>
<thead>
<tr>
<th>Letter</th>
<th>Original</th>
<th>Reconstructed</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Deciphered ciphertext from author</td>
<td>Author is João Vieira d’Alagoa, De Pina is cryptanalyst</td>
<td>De Pina, 1646</td>
</tr>
<tr>
<td>V</td>
<td>Criminal verdict João Fernandes Vieira. In text Jan Vieira</td>
<td>João Vieira d’Alagoa is convicted</td>
<td>Vieira, 1646</td>
</tr>
<tr>
<td>W</td>
<td>Bugalho is rewarded for bringing letters João Vieira d’Alagoa to High Council</td>
<td>Bugalho</td>
<td>Hoge Raad, 1646c</td>
</tr>
<tr>
<td>Z</td>
<td>Criminal verdict João Fernandes Vieira</td>
<td>Jean Fernand do Vieira is convicted</td>
<td>not in archive</td>
</tr>
</tbody>
</table>

Table 5: Information Letterbook (1646) reconstructed.

Isaac Aboab da Fonseca, a prominent leader of the Jewish community of Recife, witnessed the events of the execution of João Vieira d’Alagoa, mentioning his conviction in the poem "Zekher asiti leniflaot El" (I have set a memorial to God’s miracles). Fonseca (1646) describes the events that followed the insurrection of 1645. As he wrote, the "hardships weakened these people [of Recife], for the conspiracy threatened from within and without. Traitor bastards and black Mamelukes revealed secrets to the enemy to capture Recife, but the Council decreed the death penalty for one of them: João Vieira de Alagoa."

A comparison between the information of letters W and Z in the Letterbook (1646) reveals that Joan Fer(nan)do Viera was sentenced twice, possibly due to a clerk’s error, registering the same person under different surnames. The correct surname for João Vieira d’Alagoa should have been used instead of Joan Fer(nan)do Vieira in letter W. However, it is impossible to determine conclusively as letter Z could not be located at the National Archives (The Hague). See Table 5 for further details.

Unfortunately, the letter F, described as a copy of the ciphertext used by João Vieira d’Alagoa, could not be located within the National Archives.

We believe that letters W and Z are both about João Vieira d’Alagoa, because the High Council wrote on June 21 1646, mentioning that they would send records of the confession and conviction to the Gentlemen XIX. It suggests that there were two separate documents (Hoge Raad, 1646b).

4 The Bigger Picture

In this section, we tackle the inquiries regarding the plausibility of this case by providing context and scrutinizing the espionage report in light of existing information pertaining to the state of Dutch defenses in Brazil.

4.1 Was João Vieira d’Alagoa Framed?

Upon reading Vieira’s (1646) case, it appears that the Councils of Justice had legitimate grounds to prosecute João Vieira d’Alagoa in May 1646, as they presented substantial evidence against him. Nonetheless, one cannot completely dismiss the possibility that he was falsely accused or framed.

The Dutch pamphlet Brasyls Schuyt-Preytjen (1649) argues that justice in Dutch Brazil was blind and incapable of perception or action. The passage discusses a Dutch practice of falsely incriminating Portuguese residents. A black slave (Dutch: negeros) was coerced into delivering a fabricated letter, supposedly written by his master’s counterfeited handwriting (Dutch: konterfeyte sijn handt), which would harm to the Dutch government. Under “the promise to set him free or some other encouragement”, the slave, after being seized by the military, would testify

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14 João Fernandes Vieira was a sugar mill owner who rebelled against the Dutch, leading other rebels in the insurrection of 1645.

15 Wiesebron (2005) incorrectly indicates that Jan Viera, João Vieira, João Vieveira, and Joan Fernandes Vieira are all referring to João Fernandes Vieira d’Alagoa.
against his master allowing the Dutch officials to seize the goods of the accused traitor.

It is unlikely that the Dutch framed João Vieira d’Alagoa. The complexity of their ciphertext (see letter F in Subsection 3.2) and the report on deciphering suggest authenticity, supported by mistakes in De Pina’s report due to an incomplete key. Although it would have required bribery and false confessions for the Dutch to frame him, this hypothesis lacks sufficient evidence.

4.2 Found Ciphertexts are Rare

Dinnissen and Araújo (2022) researched the use of ciphertexts during the 17th-century war in Brazil by Portuguese forces. While they discovered some evidence of this practice being employed, it was noted that such occurrences were rare. On the other hand, until now, there is no evidence of use of cryptography by authorities in Dutch Brazil.

The New West India Company (1675-1792) used, more than 120 years later, ciphers. In 1710, in a reply to a letter from February 21 of the same year, the Gentlemen X\(^{16}\) gave orders to the Council in Guyana, instructing them that encrypted letters (Dutch: cijfer letteren) should use the old form instead of the new, advising to be used with great care to avoid mistakes. Otherwise, it could not be properly decrypted (Dutch: ontcijfert werden).

4.3 Number of Soldiers in Recife According to Spy Report

In this section, we made a visual aid to understand the information presented in the spy report of João Vieira d’Alagoa (De Pina, 1646). We utilized the map of Recife and Mauritsstad to locate fortifications and their respective garrisons. The ciphertext indicates soldiers’ race, distinguishing between Europeans, blacks, and indigenous peoples, as well as their assigned fortification (Appendix 4, line 66-82). See Figure 2 and Table 6.

On the map in Figure 2, we identified numbers 1 to 9 as fortifications that the spy mentions with the number of soldiers. The numbers 10 to 13 are fortifications mentioned by the spy without the number of soldiers. Numbers 14 to 17 are

<table>
<thead>
<tr>
<th>Nr</th>
<th>Portuguese (English)</th>
<th>Dutch</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>“Forte da Cerca” (Fence)</td>
<td>Fense of Recife</td>
</tr>
<tr>
<td>2</td>
<td>“Força Tabuada” (Taxi)</td>
<td>Ređ Mate Kyh in de Pot</td>
</tr>
<tr>
<td>3</td>
<td>“Os Cinco Cantos” (Five Corners)</td>
<td>Fort Frederik Hendrik</td>
</tr>
<tr>
<td>4</td>
<td>“Boa Vista”</td>
<td>Fort Boa Vista</td>
</tr>
<tr>
<td>5</td>
<td>“Aflugos”</td>
<td>Fort Prins Willem</td>
</tr>
<tr>
<td>6</td>
<td>“Forte de Mar” (Sea Fort)</td>
<td>Water casel</td>
</tr>
<tr>
<td>7</td>
<td>“Forte Velho” (Old Fort)</td>
<td>Landt casel</td>
</tr>
<tr>
<td>8</td>
<td>“Forte Bruno”</td>
<td>Fort de Brum</td>
</tr>
<tr>
<td>9</td>
<td>“Forte Forp” (Force)</td>
<td>Fort Wierdenburgh</td>
</tr>
<tr>
<td>10</td>
<td>“Claenste” (Cloister)</td>
<td>Fort Ernestus</td>
</tr>
<tr>
<td>11</td>
<td>“Força Alto” de Brux”</td>
<td>Redoute Jefleau de Bryn</td>
</tr>
<tr>
<td>12</td>
<td>“Salinas”</td>
<td>Fort de Soupanne</td>
</tr>
<tr>
<td>13</td>
<td>“Gat”</td>
<td>Redoute Kat</td>
</tr>
<tr>
<td>14</td>
<td>(Stone redout outside) 3</td>
<td>Fort van Gocht</td>
</tr>
<tr>
<td>15</td>
<td>(Second of four redouts landside of Mauritshof)</td>
<td>Redoute without name</td>
</tr>
<tr>
<td>16</td>
<td>(Third of four redouts landside of Mauritshof)</td>
<td>Redoute without name</td>
</tr>
<tr>
<td>17</td>
<td>Forte Antonio Novo</td>
<td>Fort Aliena</td>
</tr>
</tbody>
</table>

Figure 2: Dutch fortifications (symbol for forts * and symbol for redouts ■) with their Dutch and Portuguese names in Recife, Brazil. Map is from Cornelis Goliath, ‘Olinda, Maurits-Stadt ende ’t Reciffo’ (1648), engraving published by Claes Jansz. Visscher, Scheepvaartmuseum, inv.nr A.3143 (03).

\(^{16}\) The company superiors of the Old WIC are the Gentlemen XIX (read: nineteen). The superiors of the New WIC are the Gentlemen X (read: ten).
fortifications not mentioned by the spy in the ciphertexts. These fortifications have different names in Dutch and Portuguese, and sometimes they have more than one name. We identified fortifications through their descriptions, like “forte da Cerca” (1) related to the “fence of Recife”. In the case of “força Taboada” (2), we identify it as the redoute “Kyk in de Pot” because its description was a wooden battery surrounded by palisades (taboada means wooden plank in Portuguese) and its role for defending the fortified dike. We identify “forte Força” (9) as “fort Waerdenburg” since it was a strong fortification, in a key position for the defence of Recife.

Table 6: Number of soldiers in Recife according to the spy his report around April 1646.

<table>
<thead>
<tr>
<th>Number of Fortification</th>
<th>Number of Soldiers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>European</td>
</tr>
<tr>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>100</td>
</tr>
<tr>
<td>7</td>
<td>15</td>
</tr>
</tbody>
</table>

Soldiers Recife in fortifications: 354 European, 50 Blacks, 90 Indigenous = 494
Soldiers Recife in companies: 700 European = 700
Subtotal Recife: 1,054 European = 1,054
Soldiers Paraiba: 240 European = 240
Subtotal Other: 310 European = 310
Total according to Spy in 1646: 1,364 European = 1,364
Total according to Miranda in 1646: 2,017 European = 2,017

Number soldiers not accounted for by Spy: 653 European = 653

18 In Letterbook (1646b) from March 1646 this list (Hoge Raad, 1646d), without a date, is mentioned under reference ‘qq’.
19 Miranda (2011: 38) presents the numbers of WIC soldiers in Brazil between 1630-1654 by year.

One possible explanation for the lack of information could be related to the changes in the landscape of Recife, mostly because “After 1645 the city was reorganized so that it could be better defended. Houses were demolished and new fortifications were built, which unfortunately have not been depicted in maps.” (Hulsman, 2015: 34). Another possible explanation is that the spy did not have access to the number of soldiers in these redoutes.

By examining additional contemporary sources, we can gauge the reliability of the data provided. The estimated population of Dutch Brazil during this time is 12,703 individuals encompassing all genders and ethnicities including Europeans, blacks, and indigenous peoples. All European soldiers of the WIC, not specified by captaincy, reached a total of 2,017; the lowest number since the beginning of Dutch Brazil in 1630. These numbers are followed by 200 indigenous stationed between Recife and Itamaracá and 59 black soldiers of the company.

The report by the spy notes 354 WIC soldiers, 50 blacks, and 90 indigenous individuals present in the fortifications (refer to Table 6). Moreover, he also includes a count of soldiers involved in operations outside Recife who are not included as garrison troops. The spy mentions in line 163-165: “The six companies in Recife have 360 soldiers. The three companies of Santo Antônio have 120. The Governor's company, Huyter's Company, Claes' company, and Kil's company all have 160. The company has 60 soldiers.” Putting together these numbers, we have a total of 700 European soldiers outside the fortifications in Recife. In total there are 1,054 European soldiers in the fortifications (354) and companies (700). That is 52% of the number (2,017) mentioned by Miranda above. If we consider that Recife was the capital of Dutch Brazil this number seems plausible and accurate.
These elements corroborate that the spy managed to gather sensitive information about the weakest spots of the Dutch. Besides that, this data serves as a picture of the time endured by the Dutch during the siege.

5 Conclusions

Our investigation revealed that Abraham de Pina was the skilled cryptanalyst who deciphered the four letters written by João Vieira d’Alagoa. In his report to the High Council, he disclosed both his deciphering of the original letters’ cipher codes and his efforts towards reconstructing their plaintext. Despite having access to an incomplete nomenclature, De Pina accomplished a remarkable feat in deciphering all of the letters within only several days. Nonetheless, our analysis shows that there were four unresolved ciphercodes within “ciphertext 1”.

The collaboration between spy João Vieira d’Alagoa and Portuguese rebels Brás Afonso and Manoel João resulted in the creation of a complex nomenclature cipher that utilized super encryption for added secrecy. This case serves as direct evidence of the use of nomenclatures by the Portuguese in Brazil during the 17th century.

In conclusion, despite De Pina’s report detailing a concerning situation of espionage and information gathering for the rebels, the Gentlemen XIX chose not to take any action in response. This decision was reflected in their subsequent orders which indicated that this particular case did not alter their strategy for Brazil.

Acknowledgements

We would like to thank Tiemen Bosma, Suzanne Litrel, Nils Kopal, Adriano Comissoli, and the three anonymous reviewers for their assistance in the preparation of this article.

References


Brasyls Schuyt-Praetjen. 1649. Ghehouden tusschen een Officier, een Domine, en een Coopman, noopende den Staat van Brasyl:: ffb2r-v.


Bugalho, 1646. 1646-5-15. NL-HaNA, OWIC, 1.05.01.01, inv.nr. 62-115: unfoiled.


Decode Database. Record 1861. https://de-crypt.org/decrypt-web/RecordsView/1861


Gentlemen X, 1710. 1710-9-5. NL-HaNA, WIC, 1.05.01.02, inventarissnummer 2, 1708 nov. 5 - 1710 okt. 4: scan 11 (unfoiled), f176v.

Gentlemen XIX, 1646. 1646-10-23. NL-HaNA, OWIC, 1.05.01.01, kopieboeken van uitgaande stukken, 10 1646 juli 21 - 1657 okt. 10: f21-23.

Hoge Raad, 1644. 1644-1-21. NL-HaNA, OWIC, 1.05.01.01, inv.nr. 70: unfoiled, scan 435.

Hoge Raad, 1646a. 1646-5-16, 1646-5-19, and 1646-5-28. NL-HaNA, OWIC, 1.05.01.01, inv.nr. 71: unfoiled, scans 420, 421, 426 and 437.

Hoge Raad, 1646b. 1646-6-21. NL-HaNA, OWIC, 1.05.01.01, inv.nr. 62-49: unfoiled, scans 1, 10, and 14.

Hoge Raad, 1646c. 1646-1-4. NL-HaNA, OWIC, 1.05.01.01, inv.nr. 62-42: unfoiled.

Hoge Raad, 1646d. 1646-7-2. NL-HaNA, OWIC, 1.05.01.01, inv.nr. 61-51: unfoiled.


Letterbook, 1646. 1646-6-21 (around). NL-HaNA, OWIC, 1.05.01.01, inv.nr. 62-45: unfoiled.

Letterbook, 1646b. 1646-3-2. NL-HaNA, OWIC, 1.05.01.01, inv.nr. 61-56: unfoiled.


Pina de, 1645. 1645-5-14. NL-HaNA, OWIC, 1.05.01.01, inv.nr. 62-44: unfoiled.

Vieira, 1646. 1645-05-29. NL-HaNA, OWIC, 1.05.01.01, inv.nr. 62-45: unfoiled.
### APPENDIX 1. Distribution of plaintext-words (first letter) and plaintext-numbers over cipher-codes

<table>
<thead>
<tr>
<th>Distribution of plaintext letters and plaintext numbers over cipher-codes</th>
<th>Reconstructed codes with first letter</th>
<th>Codes with first letter plaintext-word</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 to 50</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>51 to 100</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>101 to 150</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>151 to 200</td>
<td>9</td>
</tr>
<tr>
<td>5</td>
<td>201 to 250</td>
<td>10</td>
</tr>
<tr>
<td>6</td>
<td>251 to 300</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>301 to 350</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>351 to 400</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>401 to 450</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>451 to 500</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>501 to 550</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>551 to 600</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>601 to 650</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>651 to 700</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>701 to 750</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>751 to 800</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>801 to 850</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>851 to 900</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>901 to 950</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>951 to 1000</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>1001 to 1050</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>1051 to 1100</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>1101 to 1150</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>1151 to 1200</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>1201 to 1250</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>1251 to 1300</td>
<td></td>
</tr>
</tbody>
</table>
### APPENDIX 2. Summary sources. Names mentioned and information concerning ciphertexts

Letters F and Z in Letterbook (1646) have been crossed out because they are mentioned but were not found in the National Archives, The Hague.

<table>
<thead>
<tr>
<th>Source</th>
<th>Date</th>
<th>Letter</th>
<th>Names mentioned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kurt Discours Rebellion (1647)</td>
<td>1665-5-8</td>
<td>F</td>
<td>João Vieira d’Alagoa (Portuguese) from Recife</td>
</tr>
<tr>
<td></td>
<td>1665-5-14</td>
<td>Z</td>
<td>the imprisoned Portuguese</td>
</tr>
<tr>
<td></td>
<td>1665-5-25</td>
<td>F</td>
<td>João Vieira d’Alagoa</td>
</tr>
<tr>
<td></td>
<td>1665-5-30</td>
<td>F</td>
<td>João Vieira d’Alagoa (Portuguese)</td>
</tr>
<tr>
<td>Bagalho, 1646</td>
<td>1665-5-15</td>
<td>F</td>
<td>not</td>
</tr>
<tr>
<td></td>
<td>1665-5-16</td>
<td>F</td>
<td>not</td>
</tr>
<tr>
<td></td>
<td>1665-5-19</td>
<td>F</td>
<td>not</td>
</tr>
<tr>
<td></td>
<td>1665-5-28</td>
<td>F</td>
<td>not</td>
</tr>
<tr>
<td>de Pina, 1646</td>
<td>1665-5-29</td>
<td>W</td>
<td>João Vieira born in Ovarianos, Portugal</td>
</tr>
<tr>
<td></td>
<td>1665-6-21</td>
<td>V</td>
<td>not</td>
</tr>
<tr>
<td>Vieira, 1646</td>
<td>1665-5-29</td>
<td>W</td>
<td>Portuguese who come from Angola</td>
</tr>
<tr>
<td></td>
<td>1665-6-21</td>
<td>V</td>
<td>not</td>
</tr>
<tr>
<td>Letterbook, (second)</td>
<td>1665-6-21</td>
<td>V</td>
<td>not</td>
</tr>
<tr>
<td>Hoge Raad, 1646</td>
<td>1665-6-21</td>
<td>V</td>
<td>not</td>
</tr>
<tr>
<td>Hoge Raad, 1646c</td>
<td>1665-1-4</td>
<td>V</td>
<td>not</td>
</tr>
<tr>
<td>Gentlemen XII, 1646</td>
<td>1665-10-23</td>
<td>V</td>
<td>not</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>Date</th>
<th>Letter</th>
<th>What</th>
<th>How</th>
<th>Cryptanalyst</th>
<th>Content letters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kurt Discours Rebellion (1647)</td>
<td>1665-5-8</td>
<td>F</td>
<td>Betrayed and communicated with enemy</td>
<td>Little box with same letters written with number letters</td>
<td>not</td>
<td>Without doubt great secrets are hidden in these Letters</td>
</tr>
<tr>
<td></td>
<td>1665-5-14</td>
<td>Z</td>
<td>not</td>
<td>not</td>
<td>not</td>
<td>not</td>
</tr>
<tr>
<td></td>
<td>1665-5-25</td>
<td>F</td>
<td>not</td>
<td>not</td>
<td>not</td>
<td>not</td>
</tr>
<tr>
<td></td>
<td>1665-5-30</td>
<td>F</td>
<td>not</td>
<td>not</td>
<td>not</td>
<td>not</td>
</tr>
<tr>
<td>Bagalho, 1646</td>
<td>1665-5-15</td>
<td>F</td>
<td>not</td>
<td>not</td>
<td>not</td>
<td>not</td>
</tr>
<tr>
<td></td>
<td>1665-5-16</td>
<td>F</td>
<td>not</td>
<td>not</td>
<td>not</td>
<td>not</td>
</tr>
<tr>
<td></td>
<td>1665-5-19</td>
<td>F</td>
<td>not</td>
<td>not</td>
<td>not</td>
<td>not</td>
</tr>
<tr>
<td></td>
<td>1665-5-28</td>
<td>F</td>
<td>not</td>
<td>not</td>
<td>not</td>
<td>not</td>
</tr>
<tr>
<td>de Pina, 1646</td>
<td>1665-5-29</td>
<td>V</td>
<td>Cryptanalysis of ciphers</td>
<td>not</td>
<td>not</td>
<td>De Pina</td>
</tr>
<tr>
<td>Vieira, 1646</td>
<td>1665-5-29</td>
<td>W</td>
<td>Corresponded with enemy: Convicted for high treason</td>
<td>In a tobacco box without lid several letters, both on paper and parchment, written in numerical letters. In detective’s house in cabinet were found in the same hand, four leaves two of which were written full with number letters and the other two written with the Portuguese alphabet</td>
<td>not</td>
<td>Not told enemy: (a) number of ships and its armaments; (b) location of fortresses, troops there and its maintenance; (c) how to attack there; (d) how to communicate about amount of food, drink, dead, and sick; ships and the number of people on board coming and leaving</td>
</tr>
<tr>
<td>Letterbook, (second)</td>
<td>1665-6-21</td>
<td>V</td>
<td>not</td>
<td>not</td>
<td>not</td>
<td>not</td>
</tr>
<tr>
<td>Hoge Raad, 1646c</td>
<td>1666-6-21</td>
<td>L</td>
<td>Advice intended to send to enemy</td>
<td>Under letter F Copy of deciphered advice</td>
<td>not</td>
<td>not</td>
</tr>
<tr>
<td>Hoge Raad, 1646c</td>
<td>1665-1-4</td>
<td>Y</td>
<td>Letters written in cipher number intended to hand over to enemy</td>
<td>Letter was translated</td>
<td>not</td>
<td>not</td>
</tr>
<tr>
<td>Gentlemen XII, 1646</td>
<td>1665-10-23</td>
<td>V</td>
<td>not</td>
<td>not</td>
<td>not</td>
<td>not</td>
</tr>
</tbody>
</table>
APPENDIX 3. Vieira (1646) transcription and translation

TRANSCRIPTION

(62_43 scan 1)
(in margin: a round stamp in purple with text “RIJKSARCHIEF ’S GRAVENHAGE”)20 / 29 mei 1646 (later annotation in lead pencil) / 43 (later annotation in lead pencil)

W21

Extract uit het Criminele Sententieboeck / vande raaden van Justitie

Alsoo Jan Veeira geboortigh van gumarais in poortugael / omtrent out 40 Jaren, tegenwoordigh gedetineerde, niet / tegenstaende de generale rebellije vande portugeesen / vergunt was in ruste & vreede alhier op ’t Reciff te / verblijven, & sijne woninge & goederen te behouden, echter / vergetende sijnen Schuldigen plight & eet van getrouwig / bestaen heeft gedurende, dese troebelen met / onse vijanden / correspondentie te houden, aen deselve bedeckter wijse, te / Schrijven & haer alsoo alle de / gelegenheitv van onsen / staet bekent te maaken sulcx hij getraght heeft te doen, / gevende aen seecker portugees gekomen van Angola / genaemt antonio Bulgalo ( naer dat hij hem alrede / tot het overloopen getracht hadde te induceeren ) seecker / Tabaxx doosken onderr Scheedel bedeckt, met een houtten / bodemtgen, & eerst met hars o(ver)loopen & daer op met / metridaet22 bedeckt daer inne & waernevens hij veeira / hadde gedaen verscheijde brieven, soo op papier als / francijn23 met cijffer letters geschreeven, bij de welcke / hij aenden gouverneur vanden Vijant Het getal van / onse Scheepen, de Monture van dien, de gelegenheitv / van onse fortten, de besettinge van / deselffde als / onderhout, mitgaders alle nootlijckheeden24 (ver)meijnde / bekent te maaken, & met diverse / teijckenen uijt eenige / Hooghten onse desseijnen & voornemen te adviseeren / blijkende tselve evident & / klaerlijk bij de voornoemde / geintercipieerde brieven, & nogh eerst bij seecker stucxken, / francijn, hebbende omtrent de leckte van een vinger / bij de Heeren Commissarisen tot het inventariseeren van den / gedetineerds goederen gecommitteert Sijnde in / blanco geschreeven: rs: 90 25 Met deselve Hant & letteren / als seecker pampierken in’t vors(chreven) doosken bevonden / Twelck met deselve woorden beschreeven was, & eenigh harpui26 / sijnde als tgeen, waermeede de brieven int v(oorseijde) doosken / voor te werden waren gepreserveert,27 / sammen in des / gedetineerds huisje gevonden, Nogh bij seecker pamphierken / aldaer bij de Vernoemde, Heeren Commissarisen In seecker / Schiftoor off kasken Met laetgens bevonden hebbende / aen de eene sijde even & / deselve maniere van doorgeschrap / & met een & deselve Hant gemaeckte sjijffer letters /

Verto29

As int gecijfferde & aen de andere de eigjen hant / vant portugees AlphaBet als inde andere brieff / als int v(oorschreven) doosken bevonden sijn, Mitsgaders uijt seecker / kleijn & smal gecijfft en francijntgen / geknooapt aan het andere stuck gecijfft onteckent / twelck Francisco Rubero gedetineerde / inden Rade verclaert / heeft gesien te hebben dat Jan Veeira hetselve van seecker / kleijn boecxgen met een mes

---

20 Stamp of the State Archive in The Hague, the Netherlands. Until 1913 this was the name of the current National Archive (Dutch: Nationaal Archief) in the Netherlands.
21 Letter W refers to list of documents (numbered from A-Z) destined to the WIC, chamber Zeeland (Letterbook, 1646). Transcription: extract wt de Crimineele sententie tegens joan fer(nan)do viera. Translation: extract from the criminal verdict against Joan Fer(nan)do Viera.
22 English: mithridate or mithridaticum. Generally all-purpose antidote.
23 Dutch: fransijn. Parchment imported from France. Processed animal skin, used for writing.
25 The meaning of this sentence is not entirely clear. It is probably the fabric or cloth under which the letters were hidden.
27 Unknown piece of furniture.
affgesneeden Heeft & / nogh specialijck uijt seecker boecxken, bij de voors(chreven) Heeren / Commissarisen op den 28en dezer ten selven Huijse in seecker / kisgen gevonden sijnde, geintituleert Regras da Companhia / de Jesu31 van de welcke de gedetineerde verclaerde nogh / een goede partie ten sijnen huysie te hebben aen welcx boecxken / nogh een kleijn stueckxken Francijn aen den rugge was gebleven / waer aen de twee gementieerde stucxkens / parcement gevoeght sijnde de lenghte & breedte in bant / & naeijtsel, & alle andere omstandigheden aen geblecken / heeft het selffde boecxken te sijn, Waer van hij / gedetineerde de selffde ten deele heeft affgescheurt / ende affgesneeden, & nogh uijt seecker boecxken geintituleert / Primaira examen gene(ra)l quese ad e propone a / todo los que pediere ser admiuttidas en la de Comp(anhia) / de Jesu31 gebonden in octavo met swart leer o(ver)trocken, met / de Hant geschreeven sijnde met purper coleur op de suede / geverft ( dogh verblickt ) & meede ten selven Huijse int / voornoemde Casken gevonden uijt het welcke vier bladeren / waren geschreut sijnde twee vol sijffer letters / & de andere twee met ’t portugees Alphabet volschreven / & int Tabax doosken bij Jan Veeira aen Antoni / bulgao gegeven gevonden, welck boeck neffens / de twee voorseijde brieven aende gedetineerde vertoont / sijnde bekende tselve sijn eigen goet te sijn, & deselve / papieren uijt ’t vernoemde boeck geschreut te Hebben / Waer alle welcke ongetwijffel & onwederlegge- / lijcke inditien mitsgaders uijt de Verclaringhe van / Francisco Rubero & des gedetineerden gequali- / ficeerden Confessie inden rade gedaen klaerlijck / gebleecken des gedetineerden Verradelijcke & / trouloose Minees, met dewelcke hij voorgehadt / heeft deesen onsen Staet aende Rebelleuse & / Meijnnedige portugeesen te onteckende & bekent te / maaken, & ons alle met Vrouwen & kinderen / te stellen in een generael Bloetbadt, sijnde tselve van / seer Schadelijcke, ende pernitieuse35 gevolge, die in een / lant van pollitije, & daer men gewoon is criminele Justitie te /

(62_43 scan 3)
te administreerden, niet mogen geleeden off / getollereert werden, maer andere ten exempl op het / rigoreuste gestraft, Soo ist dat den rade / van Justitie naer gehoorden eijch vanden ad(vocaat) fiscael / de voornoemde klare & onwederleggelijke inditien / mitsgaders, twelck meer ter materie dienende was / & haer Ed(ele) hadden komen off mogen moveeren o(ver)wogen / hebbende, doende Reght uijtten naam & van weeghen / de Ho: Mog: Heeren Staaten Generael der / vereenighde Nederlanden Sijn Voorheen de Heere / prince van Oragnen, & de generale geoctroijeerde / Westind(ische) Comp(agnie) den voornoemden gedetineerde / verklaert te hebben gelijck sij hem v(er)klaaren bij deesen / Begaen te hebben Crimen Lese Maiestatis36 / & condemneert hem gebracht te werden ter plaetse / daer men gewoon is criminele Justitie te doen / & aldaer met den Swaerde ter doot geexecuteert / het Hooft gestelt te werden op een staeck het dood / Lighaem gevierendeelt, & ijder vierendeel gehangen / te worden aen halve galgen aende naeste plaetsen / vanden vijant & geconfisqueert alle sijne goederen. / Aldus gedaen & gearresteeert inden rade desen 29en / Maij 1646. & gepronuntieert den 30en daer aen / volgenden was onderteckent

B: van groenesteijn

TRANSLATION FROM DUTCH INTO ENGLISH

(62_43 scan 1)
(stamp) / 29 may 1646 (in lead pencil) / 43 (in lead pencil)

W

Extract from the book of Criminal Punishment / of the Councils of Justice

Although Jan Veeira, born from Gumarãis in Portugal, / around 40 years old, nowadays prisoner, not / withstanding the general rebellion of the Portuguese, / was allowed to dwell here on the Recife in rest and peace, / to keep his house and property, he however / abusing the aforementioned benefit and favor, and / forgetting his due duty and oath of loyalty, / had the audacity, during this revolt to correspond with our / enemies, to write to them in a disguised / manner and thus to make known to them / the whole condition of our state, trying to do this: / He gave

31 Book ‘Regras Da Companhia De Jesu’. Written by the Jesuits. https://books.google.nl/books?id=pqoQD1JTSUkC&hl=nl&pg=PA1#v=onepage&q&f=false
33 A bound manuscript from the Jesuits. Translation of title: ‘First exam which is proposed to all who asked to be admitted by the Company of Jesus’.
34 Dutch: manieren. English: manners. Not in dictionary, but also found in a pamphlet ‘De Quade Minees en Practiken Van seeckere George Carew, Ondeckt en de open geleght, Tot Onderrichtingh en Waerschouw aen Nederlandt’ (Middelburg 1675).
36 High treason. Latin: Crimen laesae maiestatis. French: Lèse-majesté. Meaning “offence to the majesty”, is an offence against the dignity of a state (or its reigning head).
to a certain Portuguese who came from Angola, named Antonio Bugalo (after trying in advance to persuade him into defecting) certain little tobacco box without lid, with a little wooden bottom, and first doused with resin and thereafter with mithridate covered, in which and whereby he Veeira has put several letters, both on paper and parchment written in numerical letters, in which he told the governor of the enemy the number of our ships, their armaments, the location of our fortresses, with its troops there for its maintenance, furthermore meaning to disclose all necessities, and to communicate with several symbols to some extent our plans and intention. This turns out to be evident and clear with the aforementioned intercepted letters, & still first with a certain little piece of parchment, about the length of a finger, (found) by the Gentlemen Commissioners with commission to make an inventory of the goods of the detainee, which was written in blank “w: s: 90” in the same hand and letters as certain little paper in the aforementioned little box, which was inscribed with the same words, and some resin, like that, with which the letters in the aforementioned little box were to be preserved, found together in the detainee’s house. The same with a certain piece of paper there by the aforementioned Gentlemen Commissioners located in a certain “schifoor” or little chest with drawers, which had at the one side equally and the same way of strikethrough & with one and the same hand made numerical letters /

Turn page

(62_43 scan 2)
as in the ciphertext and on the other side his own handwriting with the Portuguese alphabet as in the other letter as found in the aforementioned little box, also on certain small and narrow little parchment with some ciphertext pierced and knotted to the other piece of parchment with ciphertext, of which Francisco Rubero, detainee, had declared in the council that he had seen Jan Veeira cutting it of from a certain small book with a knife and still especially from certain booklet, by the aforementioned Gentlemen Commissioners on the 28th of this month in the same house found in some small box, with the title “Regras da Companhia / de Jesu”. Of this (copy) the detainee declares to still have a good stock at his home. This booklet still had a small piece of parchment on its back to which the first two mentioned pieces of parchment added sum up the length and width in of the binding and sewing of the book, and with all circumstances showing to be the same book, from which he, detainee, declared having torn off and cut off parts, and also from a certain book titled “Primaira examen general quese a todo los que pediere ser admitidas en la de Companhia / de Jesu”, bound in octavo covered with black leather, handwritten, painted with a purple color on the suede (but faded) and also found in the same house in the aforementioned little chest from which four leaves were torn, two of which were fully written with numerical letters and the other two fully written with the Portuguese alphabet and found in the tobacco box that Jan Veeira gave to Antoni Bulgao. Which book besides the two aforementioned letters shown unto the detainee, he confessed to be his own property, and to have torn those papers from the aforementioned book. From all those unquestionable and irrefutable clues together from the statement of Francisco Rubero and the detainee’s qualified confession in the council had turned out obviously the detainee’s treacherous and faithless undermining, by which he had in mind to disclose and reveal our state to the rebellious and perjured Portuguese and to expose us all, including women and children, to a general massacre. This is the very harmful and dangerous consequence, that in a country of police, and where common justice is /

(62_43 scan 3)
administered, should not be suffered or tolerated, but to others as an example in the most rigorous way should be punished. Therfore it is that the Council of Justice after hearing the demand of the Attorney Fiscal the aforementioned clear and irrefutable clues together with, which was serving to substantiate more and could or should having the Honorable Gentlemen moved or considered, to do justice on behalf of and because of the High and Mighty Lords of the States General of United Netherlands, his Guardian the Lord / prince of Orange, and the General Chartered West Indian Company, have declared to the aforementioned detainee as they declare him hereby to have committed High Treason and condemn him to be taken to the place where it is customary to punish criminals and to be executed there with the sword, the head to be put on a stake, the dead body quartered, and each quarter must be hung on half gibbets near the places of the enemy and all his goods to be confiscated. Thus done and confirmed in the council this 29th May 1646, and ruled on 30th following. / Was signed B. van Groeustein.

37 Literally: her Honorable (i.e. from the Councils of Justice).
APPENDIX 4. De Pina (1646) translation and transcription

Translation into English and below it the transcription. The lines with the ciphercode and plaintext are treated separately by code: code (transcription), plaintext (transcription), plaintext normalised (if any), translation into English, code reconstructed (if any), plaintext reconstructed (if any), translation reconstructed (if any). In footnotes the reconstructed code or plaintext will be justified.

[62-44 scan 1]

L1 V38 / mei 164639 / 44
   V / may 1646 / 44

L2 Declaration of these alphabetical letters, and ciphers, which before
   Declaração destas cartas alfabetas e cifras que diante dos

L3 the men of the high and secret Council and the men of the Council
   Homens do Alto e Secreto Conselho e dos homens do Conselho

L4 of Justice by me Abraham de Pina, were declared
   da Justiça por mim Abraham de Pina, foram declaradas

L5 in May 1646.
   em Maio de 1646

L6 Firstly the alphabet of words so various are like an index of the
   Primeiramente o Alfabeto de palavras tão várias são como um índex das

L7 words that whoever uses them in their letters whereby each one of them is
   palavras que quem usar nas suas Cartas por onde cada uma dela é

L8 required to have a number which is as follows: the first word is A
   necessário ter um número o qual é o seguinte: a primeira palavra é “A”,

L9 and must have number 1. The second one is number 240, AS three.
   há de ter n°1. A segunda de n°2, “as” três, “até” 4. “Havendo” cinco

L10 the SEXTA FEIRA 6, until the word 10 ASIMA that will have the number 10.
   a “sexta-feira” 6, até a palavra 10 “acima” que terá o n°10.

L11 Apart from this it is necessary that the same words
   Fora isto é necessário que as mesmas palavras

L12 from the first A start numbering 101 and go on
   desde “A” primeira “A” se comece a numerar 101 e vá

L13 until the end of the whole alphabet
   seguindo até o fim de todo alfabeto com o

L14 with the number followed in this way
   número seguido desta maneira

L15 so that when you get to Br. A. M. J. it will
   com que quando chegas a Br. “A” “M” “J” virá a

L16 touch and it is n° 495 and it will be clear.
   tocar e é n°495 e ficará claro.

L17 From understanding last paper n°4 whose words
   De entender último papel n° 4 cujas palavras

L18 and numbers follow this alphabet directly
   e números seguem a este alfabeto diretamente

L19 up to the manufacture of all this key.
   até a chave de tudo esta se fabricam.

38 Letter V refers to letter in Letterbook (1646).
39 ‘mei 1646’ and ‘44’ are both later annotations written in lead pencil.
40 Here De Pina forgot to indicate that the Word to number two is AO.
C1  C2  C3
n° 101  A...  The  1
n° 102  ao...  To  2
n° 103  as...  The  3
n° 104  até...  Until  4
n° 105  avendo...  Having  5
n° 106  sexta feira  Friday  6
n° 107  Alcatifa  Carpet  7
n° 108  angola..  Angola  8
n° 109  algunes...  Some  9
n° 110  acima...  Above  10
n° 111  a mesmas  The same
n° 112  Águas  Waters
n° 113  a tal  Thus/ the such

segue até o fim acima  continues to the end above

L20  It is warned that the author to write his cipher almost always uses one
Advirta-se que o Autor para escrever sua cifra usa quase sempre uma

L21  less than the one he points out, because 474 is 473 and 352 is 351, as I will soon
menos da que aponta, porque 474 são 473, e 352 é 351 como logo

L22  show, and only a few rare times he uses right number and use
mostrarei e só algumas raras vezes usa ao justo, se assim lhe assi-

L23  this sign # and especially the number 201, which he always uses
ná-lo este sinal # e principalmente o n° 201 que sempre usa

L24  right to it when he wants to say (de).
ao justo, que quer dizer (de).

L25  Made of the Alphabet an index numbered all the words until the
Feito do alfabeto um índex numerado de todas as palavras até o

L26  end there is that when it says 474 (that as I have said one
cabo, achare-se-á que quando diz 474 (que como tenho dito um

L27  less is 473 it means TEM and number 352 1 less means
menos, é 473 que dizer “tem”. E numero 352, 1 menos que dizer

L28  HOLLANDEZES, and thus I will begin to decipher the last letter n°3 for
Holandeses, e assim começarei a decifrar a última carta n° 3 por

L29  being brief with the ciphers for better intelligence of the others.
ser breve com as cifras para melhor inteligência das outras

[62-44 scan 2]

L30  It is also necessary to warn that when using a thousand and so many that the thousand will
Também é necessário advertir que quando usa mil e tantos, que o mil se há

L31  blurred. This is the attention of saying you will find by counting as well as it would be
de borrar, esta é atenção de dizer achereis contando bem muito como se

L32  said that you remember to blur the thousand and so when you find n° 1020 blurring
disiera que se lembrem de borrar o mil e assim quando se achar n° 1020, borrando

L33  the thousand so 1020 becomes 20 and when 1002 comes it is 2, which purpose is
o mil assim 1020 ficam 20 e quando vier 1002 são 2, o qual o propósito

L34  the same above if it is two or if it is the word n° 2 and in the units
mesmo em cima se são dous ou se é a palavras n° 2 e nas unidades

L35  it almost always uses the right.
quase sempre usa ao justo.

L36  The sign Br.ª. A.º. M.ª 10 means Bras Afonso and Manoel João,
A firma Br.ª A.º M.ª 10 quer dizer Bras Afonso e Manoel João
who are on the other side, and he tells them to declare the letters

because, as they were here in his house a year ago,

they communicated this invention of a cipher together.

When he lacks words that are not in the alphabet, like MEÇ,

they communicated this invention of a cipher together.

When he lacks words that are not in the alphabet, like MEÇ,

[Plaintext 3]

Declaration of the letter n° 3 which is the last one from the beginning of May

The Dutch have six large ships of more than 20 pieces, one of

10 pieces, 5 of 6 to 8 pieces, 4 of bronze of all few people.

Recife with the other parts are as told. Fort Taboada [2. Kyk in de Pot] has more fortification.

A boat came from Angola in 25 days of travel. It gives news that they have
Plaintext normalised

<table>
<thead>
<tr>
<th>Translation</th>
<th>came</th>
<th>from Angola</th>
<th>one boat</th>
<th>in 25 days</th>
<th>viajem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code rec.</td>
<td>844</td>
<td>290</td>
<td>160</td>
<td>232</td>
<td></td>
</tr>
<tr>
<td>Plaintext rec.</td>
<td></td>
<td>8 angola</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Translation rec.</td>
<td></td>
<td>supply</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Code

<table>
<thead>
<tr>
<th>Plaintext</th>
<th>noticia</th>
<th>ha</th>
<th>pouco</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plaintext normalised</td>
<td>há</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Translation</td>
<td>news</td>
<td>what / which / that</td>
<td>has / have</td>
</tr>
</tbody>
</table>

Code rec.

<table>
<thead>
<tr>
<th>Plaintext</th>
<th>comer</th>
<th>tem</th>
<th>navios</th>
<th>grandes</th>
<th>pataxos</th>
<th>q[ue]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plaintext normalised</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>patacho</td>
<td></td>
</tr>
<tr>
<td>Translation</td>
<td>eat</td>
<td>has / have</td>
<td>4 ships</td>
<td>big / large</td>
<td>2 patacho</td>
<td>what / which / that</td>
</tr>
</tbody>
</table>

Code rec.

<table>
<thead>
<tr>
<th>Plaintext</th>
<th>falta</th>
<th>na</th>
<th>costa</th>
<th>esta</th>
<th>preso</th>
<th>governador</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plaintext normalised</td>
<td>andam</td>
<td>está</td>
<td>governador</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Translation</td>
<td>walk / go to</td>
<td>in</td>
<td>coast</td>
<td>is</td>
<td>arrested</td>
<td>governor</td>
</tr>
</tbody>
</table>

Attention - begin!

The complete ‘APPENDIX 4. De Pina (1646) translation and transcription’ can be found at record 1861 in the Decode Database: https://de-crypt.org/decrypt-web/RecordsView/1861.

Attention - end!

44 Code error. Code was '8290 angola'. Should read '8 angola' and '290 ha'.
45 Code error. Code was '8290 angola'. Should read '8 angola' and '290 ha'.
46 Code error. Code was '{missing code} barco' (count 1). Should read '160 barco' (count 1).
47 Code error. Code was '{missing code} em' (count 1). Should read '232 em' (count 5).
48 Plaintext error. Code was '154 hun' (count 1). Should read '154 bastimento' (count 1) in range of letter B.