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## **DECIPHERING THE SCRIPT OF THE PLISKA ROSETTE**

### **Дешифриране на писмената върху Розетата от Плиска**

**Abstract:** A bronze artefact with a runic-like inscription was discovered in 1961 in Pliska, a medieval capital of Bulgaria. Several attempts have been made to decipher the inscription. Some have suggested translations with narrative text while others have suggested that the seven rays of the Pliska Rosette contain the names of the planets including the Sun and the Moon as they were known in medieval times. A new deciphering is proposed here where the following words are obtained while reading the inscription from top to bottom and from left to right as follows: LUNI, MAERTIUNI, MAERTKURT, NIUPETER, VENERAIO, ISANTURANII, UMAERES on the back side and IUNII on the front side. The proposed deciphering is based on a concept that the runic-like symbols are vertical constructs made of primitive signs denoting single sounds or syllables and which reflect the shape of the mouth, tongue, lips and palate during their pronunciation.

**Keywords:** Pliska, rosette, runic, syllable, script, luni, maertiuni, maertkurt, niupeter, veneraio, isanturanii, umaeres, iunii, Bulgarian, alphabet.

### **Introduction**

The Pliska Rosette (Figures 1, 2 and 3) is a bronze artefact discovered by the Bulgarian archaeologist Stancho Vaklinov in 1961 during excavations carried out in Pliska, a medieval capital of Bulgaria. The artefact has attracted significant attention in Bulgaria and internationally due to the presence of a runic-like inscription on its front and back side. Several attempts have been made to decipher the inscription. A recent attempt has proposed that the inscription is deciphered as: “the massacre of the Romans drink glum, but resist at.”<sup>1</sup> Another attempt to decipher the inscription into narrative text has proposed the following translation: “The shepherd of the state (people) – marshal of the army (water) / God bless him”<sup>2</sup>. Yet several other authors have suggested that the inscriptions on the seven rays of the Pliska Rosette denote the planets as they were known in the past and including the Sun, Moon, Mercury, Venus, Mars, Jupiter and Saturn<sup>3</sup>. It was first suggested that the inscription on the Pliska Rosette was most likely containing the names of the seven planets<sup>4</sup> while later attempts have been made to identify which sign corresponds to which planet by using correlations with their names in distant cultures and languages<sup>5</sup>. None of these attempts is identical to the proposed deciphering in this work.

## Method

It is hereby proposed that the simplest graphical depiction of a specific sound in human speech could reflect the shape of the mouth, tongue, palate and lips during its pronunciation. Thus:

- an “o” depicts a widely open mouth and hence the sound of [a]\* – an “o” could also depict an open mouth while pronouncing the syllable of [ra].

- a “–” (a horizontal dash) can depict the horizontal line of touch between the tongue and the palate during the pronunciation of the sounds of [n], [nt] or [r] or even the combination of these as [ntr].

- a “c” rotated by 90 degrees anticlockwise to face upwards can depict the side view of the mouth and lips while pronouncing the sound of [o] (with the head turned upwards).

- an “I” can depict the tendency of the lips to align in a vertical line when looked from the side, which is opposite to when pronouncing [o], hence denoting the sound of [i].

- a “^” depicts the side view of the lips while pronouncing [m].

- a “C” depicts the side view of the mouth while pronouncing [s].

- an “I” can depict the side of the mouth while pronouncing the syllable [is] (a ‘straightened’ “C”).

- an “I” pointing downwards can depict the sound of [u], where the lips tend to align in a straight line. This is in a way opposite to [o] depicted by a sign pointing upwards.

- a “^” can depict the shape of the tongue from a side view when pronouncing the consonant [k].

- a short straight line crossing another line can depict the sound of [t] in a way similar to the perpendicular touch of the tongue against the palate while pronouncing [t];

- a “>” can depict the angle between the lower lip and the teeth while pronouncing [v];

- a “<” can depict in a similar way the angle between the tongue and the palate when pronouncing the sound of [l], particularly as [l] can be pronounced with the tip of the tongue pointing backwards and hence the opposite orientation of the corresponding sign compared to “>”;

- a “II” can depict the lips (with the head turned upwards) when they meet during the pronunciation of the sound of [p].

## Constructing syllables and words

In order to create meaningful signs from which words could be read, signs denoting single sounds can be placed either sequentially in one row as it is in today’s modern way of writing or, alternatively, they could be grouped vertically and extend

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\* The traditional sound equivalence of Roman letters is used here for denoting sounds of pronunciation.

to the sides of a vertical construct to create parts of words or even whole words in a single symbolic construct.

**Creating plural forms by ending with a vowel**

Single consonants can transform into syllables by adding a vowel depending on whether the symbol is repeated in the lower part of a construct facing downwards and so an ending of [a] is added; or facing horizontally and so an ending of [e] is added; or in the upper part of a construct facing upwards and so an ending of [i] is added. The following are examples of such constructs:








- $\wedge$ - to be read as [ma]
- $\sqcap$  - to be read as [pe]
- $\sim$  - to be read as [ni]
- $\times$  - to be read as [ve]
- $\frown$  - to be read as [ne]

**Direction of reading**

As the proposed way of building text here is by vertical constructs then the direction of reading is also vertical. It could be from bottom to top as in most cases described further below but also from top-to-bottom-to-middle and from midline (singular) to sideways (plural). These rules are used for the deciphering below but other directions of reading could also be possible.

**Deciphering the Pliska Rosette**

Using the above postulated principles, a deciphering is proposed below:

	NIUPETER
	LUNI
	MAERTIUNI
	MAERTKURT
	UMAERES
	ISANTURANII
	VENERAIO

On the back side, and

Y 	IUNII
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On the front side.

The table below describes in more detail and a stepwise manner how these words are derived:

↗	[n]	↘	[ni]	Y	[niu]	┐	[p]	┐	[pe]	⌘	[niupe]
I	[t]	┐	[er]	⊕	[ter]						
↙	[l]										
┐	[u]	Y	[uni]								
/	[m]	^	[ma]	Δ	[mae]	Δ	[maer]	⊕	[maert]		
┐	[i]	┐	[u]	Ψ	[iuni]						
↗	[k]	┐	[u]	Ɔ	[kurt]						
┐	[u]	Λ	[ma]	Λ	[uma]						
┐	[er]	⊕	[es]	⊕	[eres]						
┐	[is]	⊕	[isa]	⊕	[isant]						
┐	[u]	⊕	[ura]	⊕	[urani]	⊕	[uranii]				
↘	[v]	⊕	[ve]	┐	[n]	┐	[ne]	⊕	[vene]		
o	[ra]	.	[i]	┐	[o]	┐	[raio]				

### Discussion

There is apparent similarity between the words which are obtained from the inscription on the Pliska Rosette using the above method and the names of the planets as they are known today. It is interesting to note that there are two words which could signify Mars: MAERTIUNI and UMAERES, however the latter sounds more similar to the word Mars while MAERTIUNI sounds more like March (written as “Mapr“ and pronounced as [mart] in modern Bulgarian). There is also apparent similarity between the words obtained from this translation and the names of the days of the week in a number of European languages of Latin origin (for example Spanish, French, Italian, Romanian). This can be appreciated best if the Pliska Rosette is read from top to bottom and left to right direction rather than a clockwise or anticlockwise direction and taking NIUPETER as the top element. The order is then as follows:

LUNI
MAERTIUNI
MAERTKURT

NIUPETER
VENERAIO
ISANTURANII
UMAERES

This order of appearance is then remarkably the same as the order of modern names for the days of the week in the above listed European languages with the exception that there is a different word for Jupiter used in those languages (jueves, Jeudi, giovedì, joi) but which is well known to correspond to Jupiter, and that there is a different word for Saturday (sábado, samedi, Sabato, sâmbătă) while the name derived from Saturn is preserved in other modern European languages such as the English language.

There are also several significant correlations with letters and words in Bulgarian language:

- The inscription of IUNII sounds exactly the same as the month of June as it was pronounced in Bulgarian until very recently, namely pronounced as [iunii] and written in Bulgarian as “ЮНИЙ” before it was abbreviated to “ЮНИ” in modern Bulgarian during the 20<sup>th</sup> century.

- The letter “Y” denoting [u] in Bulgarian has a vertical strike in its lower part which used to be central and vertical as seen in older Bulgarian texts<sup>6</sup>. Today it has transformed into “Y”.

- The letter “II” denoting [p] in Bulgarian is exactly the same as the syllable [pe] is depicted as П in the Pliska Rosette.


- The symbol ѿ denoting [o] in the Pliska Rosette is similar to the old Bulgarian (and Greek) ‘omega’ letter denoting [o] which is also a curved symbol facing upwards.







- The symbol ı denoting [i] in the Pliska Rosette is the same as it was used in the Old Bulgarian texts. Of note it is the same (a vertical strike) in most modern European languages.

- The symbol ѡ denoting [isant] is very similar to the symbol of ѡ [iat] (often read as [ia] or as [e] depending on the place in a given word in Bulgarian) which survived in the Bulgarian alphabet until the middle of the 20<sup>th</sup> century as the 32<sup>nd</sup> alphabetic letter until it was removed in 1945 in a language reform. It can be seen easily how the Bulgarian alphabetic symbol of ѡ [iat] can be a construct of symbols depicting single sounds using the principles described in this work:




ı	[i]	ѡ	[ia]	ѡ	[iat]
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The combination of [i] and [a] here denoting upward and downward direction could logically unite as [e] which denotes sideways / even direction, and this might explain why the Bulgarian alphabetic symbol of ѡ while being referred to as [iat] was interchangeably referred to as “double” [e] and was actually used to denote the vowel of [e] in the writing of certain words (and [ia] in other words).

- The symbol  denoting [l] is the same as it is used in modern Bulgarian, however it is rotated by 90 degrees on the Pliska Rosette.






- The symbol  denoting [v] has been used as  in old Bulgarian texts and has transformed into  and then  in modern Bulgarian while it has also transformed into a  in the central and western European alphabets. The symbol  denoting [v] was used intermittently to denote also [ve] in Old Bulgarian texts<sup>7</sup> in a very similar manner as it is proposed here for its plural use in the inscription of the Pliska Rosette.

- The symbol denoting [a] has gradually transformed from a simple circle into  then <sup>8</sup> and then into a in modern Bulgarian.

- The symbol  denoting [k] has transformed into the modern letter  in modern Bulgarian as well as all other European alphabets. It is interesting to note that children in Bulgarian primary schools are still taught to write the capital letter K in the following way  where the curved shape of the side lines of the letter K is emphasized.

- The symbol  denoting [uni] resembles a human with his hands raised upwards. The word in Bulgarian to denote “we“ is pronounced as [nie] (and written as “ние“) which correlates with the concept of two (arms) together.

- A short straight line crossing another line creates a crossing point. The word in Bulgarian for a point is “точка“ [tochka] which also starts with a [t].

- The symbol  here translated as [uma] is very similar to the symbol  which is used to denote the syllable of [om] rather than a single vowel or consonant in the old Bulgarian text from the Tsar Ioan Alexander’s Tetraevangelion<sup>9</sup>. Remarkably in the latter symbol, on top of what looks like an “M“ there is a small triangle with its base pointed upwards which is very likely to replace the  sign from the Pliska Rosette and to still represent the sound of [o], thus following the same principle of a vertical construct. Of note the triangle’s base may actually be open with only a thin horizontal strike to mark the end of its two vertical/diagonal strikes. Remarkably, just as , the symbol  survived until 1945 when it was removed from the Bulgarian alphabet in a language reform. The Tsar Ioan Alexander’s Tetraevangelion<sup>10</sup> contains multiple examples of vertical additions of symbols denoting vowels and/or consonants on top of horizontally oriented text thus following a similar concept of text verticalization which is also seen in many old Christian Orthodox texts and inscriptions.

## Associations with other alphabets

### Linear B




It is interesting to correlate the proposed translation of the runic-like text in this work with the principles of translation of the Minoan Linear B texts as described by Ventris and Chadwick in 1953<sup>11</sup> mainly because the runic-like symbols are here proposed to represent syllables or a combination of syllables. In particular, the symbol for [ni] in Linear B is very similar to the symbol for [uni] in this work and the symbol for [ka] in Linear B, a circle with a cross inside, is similar to the symbol for [a] and [ra], a circle, in this work. Other symbols from Linear B are however quite different while the symbols described here contain elements representing single sounds and precursors of letters of modern European alphabets.

### *The Cypriot syllabary*

A common principle in the construction of symbols representing vowels in this work is shared with the symbols (graphemes) of the Cypriot syllabary<sup>12</sup>, which is a system used in ancient Greek and also by a civilisation which preceded it. In particular, the symbol for [a] is a centred star, the symbol for [e] is the same but with the addition of a horizontal strike, the symbol for [i] is the same but with the addition of an upper vertical strike, the symbol for [u] has a dominant downward vertical strike and the symbol for [o] looks like a cup. Furthermore, the symbols in Cypriot syllabary for [ja] and [ra] look circular with the [ra] symbol also containing a horizontal strike, the symbol for [li] is very similar to the symbol for [l] in this work, and again other symbols look quite different. Thus a direct although somewhat distant relationship is evident suggesting a probable common origin of the Pliska script and the Cypriot syllabary.

### *European alphabets*

There is apparent similarity between the proposed symbols in this work and the letters of modern European alphabets. In the Greek alphabet the letters α, β, ι, κ, λ, μ, ν, π, ς, τ, ω directly correspond to the modern Bulgarian letters а, в, и, к, л, м, н, п, с, т, о and also resemble very much the depictions of the various vowels, consonants and syllables suggested in this work. In alphabets of Latin origin, the letters а, и, к, л, м, н, о, с, т, в directly correspond to the modern Bulgarian letters а, и, к, л, м, н, о, с, т, в and they too resemble very much the depictions of the various vowels, consonants and syllables suggested in this work. The associations between the modern Bulgarian, Greek and Latin alphabets is not accidental as the corresponding languages have coexisted in a neighbouring geographic distribution at least since early medieval times and perhaps a lot longer. In addition, a conceptual understanding of how modern European alphabets have emerged could be appreciated from this deciphering.

The central sign  here deciphered as IUNII [iunii] is placed in the centre on the front side of the Pliska Rosette and may be symbolising the Sun since the month of June is in the middle of the summer and contains the day of the summer solstice. This sign has been discovered on many objects excavated in Bulgaria and particularly found engraved in stone fortification walls of Bulgarian fortresses. The way in which the word ends with a long [i] is characteristic of the Bulgarian language. It is also intriguing to note that the sign  points to the element deciphered here as VENERAIO on the back side and that the second part of this word , RATIO (РАЙО in Bulgarian) is the Bulgarian word used in older times to denote the Sun.

In conclusion, the proposed deciphering of the script from the Pliska Rosette described here shares some common principles with Linear B and Cypriot syllabary while also sharing precursor elements for the design of all modern European alphabets.

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## Declaration of competing interests:

No competing interest is declared.

## NOTES / БЕЛЕЖКИ

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<sup>3</sup> **Sidorov, M., E. Kelevedzhiev.** An approach to dating the Pliska Rosette. Paper published by the Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences, 1998, 4 (accessed online at <http://www.math.bas.bg/~keleved/dplisros/>).

<sup>4</sup> **Бешевлиев, В.** Прабългарски епиграфски паметници. София: Издателство на Отечествения Фронт, 1981, с. 23. (accessed online at <http://www.promacedonia.org/vb/index.html>)

<sup>5</sup> **Иванов, И.** Изследване върху прабългарските названия на планетите-богове съгласно розетата от Плиска. – *Епохи*, 2006, том 14, бр. 1, 225–234 (accessed online at <http://journals.uni-vt.bg/epohi/bul/vol14/iss1/14>).

<sup>6</sup> The Gospels of Tsar Ivan Alexander (a medieval Bulgarian document published as a digitised manuscript by the British Library online at [http://www.bl.uk/manuscripts/FullDisplay.aspx?ref=Add\\_MS\\_39627](http://www.bl.uk/manuscripts/FullDisplay.aspx?ref=Add_MS_39627)).

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

<sup>9</sup> Ibid.

<sup>10</sup> Ibid.

<sup>11</sup> **Ventris, M., J. Chadwick.** Evidence for Greek Dialect in the Mycenaean Archives. – *The Journal of Hellenic Studies*, 1953, Vol. 73, 84–103.

<sup>12</sup> **Chadwick, J.** Linear B and Related Scripts (Reading the Past – Cuneiform to the Alphabet). British Museum Press, 1987.

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## FIGURES / ИЗОБРАЖЕНИЯ



Figure 1 (back side)



Figure 2 (front side)



Figure 3 (side view)