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THE FORMATION OF CYRILLIC AND PROBLEMS OF THE EARLY SLAV ALPHABETS

In a previous work (Cubberley 1982) a theory of the development of Glagolitic was put forward, which may be summarized as follows:

Proto-Glagolitic arose from the ad hoc use of cursive Greek during the 7th to 9th Centuries; Constantine formalized these Proto-Glagolitic letters, but only insofar as they represented common Greek-Slav sounds; for non-Greek sounds he created new letters: for the vowels he used digraphs or ligatures of Greek/Proto-Glagolitic vowel symbols, there being no other model available; for the consonants his source was Armenian, with its over-abundance of symbols for palatals, with the addition of a form of Greek *iota* to represent the soft Slav pronunciation; Armenian models were used also for the velars, hard only in Slav as opposed to the soft variants of Greek.

The present paper is concerned with the next stage in the development of the Slav alphabets, especially with the formation of Cyrillic (Section 1), but also with the questions of the order of letters (Section 2), their numerical value (Section 3) and their names (Section 4).

1. THE FORMATION OF CYRILLIC

In our view, and indeed this is the majority view, Cyrillic was formed at the end of the 9th Century in Bulgaria, the motive probably being the need or desire for an alphabet more closely related to Greek, whether for political, religious or cultural reasons. The author may well have been a disciple of Constantine, perhaps Kliment.

The principle of "looking like Greek" caused the common Greek-Slav sounds, including the nearly identical voiced plosives and fricatives, and for the vowels including also all the variants not written in digraph form, to be based on the Greek uncials. The uncials were by then regarded as very formal, since even religious texts were regularly written in minuscule script. This formality may indeed have been precisely the reason for their choice as base for the new Slav alphabet.

Thus we have straight from Greek:

Vowels: а, є, и/і/ї/ѵ, о/ѡ, оу/ѹ

Consonants: в, г, д, ѕ, к, л, м, н, п, р, с, т, ф

The non-Greek sounds/letters were based on Glagolitic, with a squaring-off and some simplification to match the uncial type.

Vowels

Sound	Glagolitic	Route	Cyrillic
/ъ/	ⰚⰈ	ⰚⰈ	ъ
/ь/	ⰙⰈ	ⰙⰈ	ь
/y/	ⰉⰖ, etc.	imitation	ы, etc.

ę, ě

The linguistic evidence points to earlier loss of nasality in the Moravian area than in the Bulgarian. Along with this we can postulate that /ě/ would have started to "rise", that is to become a higher vowel, in Moravia, while this would not have happened in Bulgaria. Hence confusion in the meaning of the letters Ѧ and Ѥ is to be expected, as also is confusion about which letter should be used for /a/ after palatals. Thus, the Moravian situation of Ѧ for *jat'* and Ѥ for /ę/ is lost, and gives way to

1) the use of Ѧ for /ę/, and this would be supported by the Greek symbol Ѧ (=900),

2) the use of Є for /e/, readily confused with Greek-based є, or available for any related sound. Furthermore, while nasality survived long in Bulgaria, the distinction of quality in the nasals did not (cf. Smjadovski 1980), so the way was

open for ѧ to be applied to one of the nasal vowels.
Thus we have: ѧ for /ę/;
ѫ for /ǫ/ (with a 90° turn through confusion with ѧ);

A letter would still have been needed for *jat'*, since it differed in alternations at least from /a/; we should expect some form based on ѣ/a/, and possibly with a *jod*, since it was after palatals that /ě/ and /a/ were identical. Simple *jod* + *a* was not likely, however, since the alternation would have been lost; *jod* + ѣ/e/ is also unlikely, at least for the Bulgarian area, though it might have been possible, in say, Serbia; we also need to postulate a 90° rotation to give ѣ (cf. Preslav ѣ), which would match the postulated development of ѫ /ǫ/ (above); lastly, ъ + ѣ has been suggested (Ščepkin 1967): while this mixture seems unlikely, it would have been a way of representing the different sort of /a/-type sound which was *jat'*.

Jotation

The jotated vowels can be seen as imitating the Glagolitic formation of *iota + vowel*, though this need not imply that this principle of construction was known.

/ju/ is particularly interesting in that its form (ю) is apparently not simply a ligature of *iota* and /u/ - which would have given юу or ию; it seems to be more directly influenced by the Glagolitic form (viz.: ⰞⰨ). To account for it rather as an imitation we would have to postulate an original ию being "shortened" to low size ю for whatever reason; such a change would not have been prevented by potential confusion with a sequence /jo/, since this was not a possible sequence. However there is no textual evidence for such an original form ию. Simple derivation from the Glagolitic form would have given first a form like ⰉⰨ, which could then be reinterpreted as a ligature with Ⰹ (jod).

Consonants

1. The three voiced stops come from the Greek voiced fricatives, as with Glagolitic:

ѥ Greek Β, a variant form of B. This seems more likely than simplification of Glagolitic Ⰲ, though some influence is possible, cf. the Preslav (unclear) form

ѧ Greek Δ

ґ Greek Γ. A fricative pronunciation also existed in Slavonic, including in Moravia.

2. The Slav palatals can mostly be seen as based on Glagolitic, plus Greek influence:

ѫ Glag. via (cf. Preslav)

ѯ/ѕ Most likely is the interpretation of Glag. and as variants, via cross-dialectal identity in alternations and cognates, producing ѯ as a variant of ѕ. Then ѕ, from the Greek numerical symbol ϛ (=6) acquires the sound value /dz/ from its place (by numerical value) preceding ѕ.

The formal influence of Glag. on ѯ might be visible in the Preslav form .

ѡ/ѿ As described elsewhere (Cubberley 1982:302), we believe that ѿ most likely originally meant /k'/ or /t'/ (i.e. from CS *tj), in alternation with /t/.
 would have been converted to ѡ in Cyrillic, as a typical simplification, and in that area where /št/ was the common result of *tj, namely Bulgaria, this was interpreted as a ligature of ш and т, whether or not ш was the original symbol for /š/ (we believe not). In the case of the latter being a new symbol, support would have been found in the Semitic letter , also standing for /š/. The evidence of the numerical value is of some interest here too (see below).
Also described elsewhere (*ibid.*: 299) is the notion that Glagolitic probably had symbols like for /č/ and for /c/. In the creation of Cyrillic there entered the Greek influence of the numerical forms , (both = 90); we might see ч as the basic derivative

from Glag. Ⱋ, acquiring the numerical value 90 from the similar Greek symbol; the letter ⱏ (even without the influence of Gk. Ϟ) gives ⱌ, retaining the sound value /c/, and only later acquiring the numerical value of 900, held at first by ⱍ from Greek Ϡ.

3. The Greek-only letters were used for Greek words in unchanged form, viz.: Ⱁ, Ⱇ, Ⱌ, Ⱏ

Ⱁ and Ⱇ would become confused as native /f/ started to develop, with both being used for this sound, even in Greek names. At this point Glagolitic may have acquired both of these, but more likely it then lost its original version of Ⱇ (cf. ibid.:302).

Ⱌ and Ⱏ, which are early often replaced by ⱄⱏ, ⱂⱏ, do not appear in Glagolitic, presumably since the sounds are perceived as sequences. Of interest is the later use of Ⱏ for native /ps/ after the loss of the *jers*, e.g. ⱏⰰⰾⱏ for ⱂⱏⰻⰰⰾⱏ.

2. ORDER OF LETTERS

During the Proto-Glagolitic stage there would have been no need for any fixed alphabetical order. If such existed it would have followed that of Greek.

During the second stage (Constantine) the need would have arisen in the first place for teaching purposes. Assuming that Greek is, or remains, the model for the common letters, the question is what happened with the new ones. The basic possibilities, those adopted by other new alphabets, are the following:

a) add them all on at the end of the nuclear ones;
b) add them in next to the "nearest" (phonetically) nuclear ones;
c) add them on or in according to the order in a/the donor alphabet.

In addition to one of these, rather than as a separate principle of ordering, might come the numerical value of equiva-

lent letters in another alphabet. It is in fact the numerical value of the letters in the alphabets in question that gives us the most reliable, though limited, evidence of the original order of letters, though another source is the "acrostic" (alphabetically ordered) prayers. Written alphabets as such are few for the early period and mostly of doubtful value (see below).

The two Slavonic alphabets seem to have followed a combination of (a) and (b): certain of the "Slav" letters, namely the voiced consonants, were inserted, while others, namely the voiceless consonants and the vowels, were appended.

Inserted were:

/b/: apparently before the "nearest", i.e./v/; but why before?

/ž/ and /dz/ before the nearest, /z/; same question.

/d'/: if this represented a Slav sound, none of its values, as reflexes of CS *dj, place it next to /k/; if it represented Greek /g'/(γ before front vowel) (=[j]), its position could be explained as a variant of /i/, as /j/ would have been in Slavonic (cf. the parallel treatment of /j/ in alphabets derived from Latin). However, it never represents Slav /j/, only Greek γ + front vowel. We believe this letter began as Slav /d' ~ g'/, then was reapplied to Greek /g'/ in the Bulgarian period (see below).

Appended were (not here in any definite order) letters for:

/š/, /c/, /č/, perhaps a letter for /t' ~ k'/; and the vowel symbols for /ъ/, /ь/, /ě/, /ju/, /ę/, /ǫ/, /jǫ/.

Of the Greek-only letters, ϗ and ψ were certainly not included, while ϡ remained formally, but - in Glagolitic by numerical value and application - in the position of Greek Φ, and ⰹ (Cyr. ѵ) retained the Greek position and value of *upsilon* (= [i] or [ü]) at least until ⰻ (= Gk ou) took over this position, thus reasserting the original (classical) place and value of *upsilon* ([u]).

If, as noted above, ⰳ is Greek /g'/, it is possible that Gk. /k'/ and /x'/ were also retained, that is, allotted separate

letters. However the phonetic similarity between the latter two and the hard counterparts would have been close enough for separate letters to be unnecessary, while /g'/(=[j]) is quite distinct from at least a plosive /g/. Moreover the varying Slav pronunciations of /g/ - fricative as well as plosive - would have contributed to uncertainty. We believe it is possible that Glag. ⱍ represented Greek /k'/ and ⱈ /x'/. At any rate, Cyrillic clearly followed Greek practice in not creating separate letters for any of these three sounds. Also it is possible that Gk. Φ ([ph]) - as opposed to Θ for the embryonic Slav /f/ - was represented in the letter referred to as "pe" and depicted in the acrostic prayers by words like *pěsn-* (see below).

However, we envisage the following scenario for the letters in question: letters like ⰳ, ⱍ and ⱈ represented the Greek soft variants (/g'/, /k'/, and /x'/ respectively), and there were letters for the reflexes for *tj and *dj, viz. *tj: ⰾ, ⱍ (= /t'/, /k'/), *dj: ⰿ, ⱑ (= /d'/, /g'/), all formed from Armenian. In Moravia the letter ⱈ was applied to Moravian /h/, (cf. Mareš 1971:181), while the variants of /g/ and /k/ were lost, not being in any case very different from each other (ⰳ / ⰴ ; ⱍ same. In Bulgaria, where *tj/*dj gave the sequences /št/ and /žd/, the letters for /d'/, /g'/ were reallocated to Greek /g'/, along with the ⰾ version of /t'/; the remaining version of /t'/ - ⱍ - was reinterpreted as being a ligature of ⰻ and ⰵ (in its Cyrillic form ⱏ), and thus survived as Bulgarian's *tj, while no parallel development could have occurred for /žd/.

The central problem in the "new" order is why only the voiced consonants were inserted. /b/, /d'/ and /dz/ may be seen as variants of /v/, /i/ (if = Greek /g'/) and /z/ respectively, with no further explanation being necessary, but the problem is /ž/; if it is seen as "close" to /z/, whether phonetically or morphonologically, then surely /š/ is in the same relationship to /s/? The other three voiceless consonants - /c/, /č/, and /t'/ - need not have suggested direct relationships with any basic sounds, so that addition would have been normal (there

were of course morphonological ones, but these were confused); and the insertion rather than addition of vowels would no doubt have been rejected as overburdening the vowel "sections", as well as presenting the problem of identifying similarities. One observation which may be significant is that the insertion of only four letters, along with the exclusion of ѕ, ѱ, and ѳ, caused the minimum upset to the Greek (numerical) order, while any attempt to insert the other Slav letters would have meant a radical change in this order, and it seems clear that Cyrillic at least considered this important.

As to the order of the appended letters, there is considerable uncertainty: only /c/ and /č/ have more or less clear numerical values, and the alphabets and acrostic prayers frequently give contradictory evidence. Let us consider some of these sources:

a) Alphabets

MA (Glag. part): appears to have the following "letters" - using arbitrary sound values for clarity, and question marks for obscure letters - in order after /ō/: /t'?/, /c/, /č/, /š/, /ъ/, /št?/, /y?/, /ь/, /ě/, /x'?/, /jǫ?/, /ju/, /ę/, /ję/. However really only /c/ and /č/ are undisputed.

MA (Cyrillic part): appears to have the following list: /t'?/,/c/, /č/, /š/, /ъ/?, /št/, /ь?/, /ě/, /x'?/, /ju?/, /ǫ/, /ę/, /ję?/. This time in addition /št/ seems clear (!). In neither part is /š/ clear: The Cyrillic part has Ш, while the Glagolitic part has ⰔⰔ. The form of /t'?/ is Glag. ⰒⰔ, Cyr. Ѧ.

PA (Glag.): lacks a letter for /d'/, and after Ф/f/ has the following: /x'/, /c/, /č/, /š/, /ъ?, x?/, /ь?/, /ě/, /ju/, /jǫ/.

RAD (Glag.) has, after /ō/: /t'?/, /c/, /č/, /š/, /ъ/, /ě?/, /ju/, /ę?/. Here /t'?/ looks very like Greek ϕ (Ⱕ); however so also does the letter at the spot after /u/ - Ⱕ.

From these the most likely consonant order seems to be: /t'?/, /c/, /č/, /š/; it seems unlikely that /št/ should appear amongst the vowels - more likely it was not present at all in the earliest alphabet.

The order of the vowels is quite unclear, but is roughly /ъ/, /y/(?), /ь/, /ě/, /ju/, /ǫ/, /ę/.

(See Appendix 2 for a full list of these alphabets. See also Vrana 1976:168-9 for similar comparisons of the main disputed letters.)

b) Acrostic prayers ("Azbučnye molitvy")

The evidence of the acrostic prayers (see Appendix 1 for details of the acrostic prayers; see also Demkova/Droblenkova 1968, Ivanova-Konstantinova 1971 and Mareš 1971) is at least more consistent, if not necessarily clearer. They virtually all have the following order after/ō/:

/p/, /c/, /č/, /š/, /š-št/, /i-e/, /ě/, /x/, /ǫ-jǫ/, /ju/, /ę-ję/.

The oldest of these - Const - has the words *pečalь* for /p/ and *xvalu* for /x/, that is Slavonic words, both of which call to mind the "extra" letters mentioned in one version of Chrabr's *O pismeněxъ*: пѣ., хлъ., and тъ. This tradition may be evidence for the early retention of the Greek letters ф and χ as distinct from Greek ѳ and Slav /x/.

The other point of interest in these acrostics is the apparent double /š/, only in later versions the second line having /št/; I prefer Vaillant's explanation (1955), that the second /š/ represents the back *jer*, which could not of course begin a word, and which is "described" as "ъ širokъ" ("wide jer"), as opposed to "ь menii" ("smaller jer"), the latter then being represented by the word *imeni*.

If this is correct, then, along with the alphabet evidence, it is clear that /št/ was not part of the original alphabet, at least in the Bulgarian area, where it could easily be written in digraph form. (The same would go for /žd/ from *dj.)

One further point on the question of lost letters: if the letter ѓ/Ѓ, our /d'/, was originally the native (Macedonian) /d'-g'/ from *dj, then there should have been a parallel letter for /t'-k'/ from *tj. As argued above, we believe this is what ѱ originally signified, but it lost its place in the alphabet during the Cyrillic (Bulgarian) period, when the equivalent sound was /št/; while ѓ/Ѓ found itself reapplied to Greek /g'/, ѓ was not reapplied and found itself confused with /p/ - possibly through association with Latin P? (cf. the Cyrillic equivalent in MA looks like Ғ, not unlike Greek π.

3. NUMERICAL VALUE

Glagolitic and Cyrillic are radically different in the application of numerical values to letters. (See Appendix 3)

a) Glagolitic

Having added in the Slav-only letters - for /b/, /ž/, /dz/, and probably also for /d'/, /t'/ - and accepting one Greek letter for /f/, but not letters for /th/, /ks/, /ps/, Glagolitic allotted numerical values to all in the new order, at least as far as necessary, that is possibly only to 1000, but conceivably further than that (see below).

The two letters for /i/ - ⰻ and ⰸ - if they represent Greek ι and η respectively, have swapped their order from Greek. This is better taken as evidence that they do not simply represent ι and η : Glagolitic ⰸ is best derived from ϊ and ⰻ from ῑ, while ⰸ is from the diphtong ει, which of course would have no alphabetical place in Greek.

Note too that for /u/ the Greek value of 400 is allotted to the digraph ⰱ (= Gk. ου) rather than ⰲ (= Gk. υ); indeed the latter seems not to have been used at first, but was probably developed later by analogy with Cyrillic ѵ from оѵ.

The exclusion of ϕ, ϡ and ψ, surely by coincidence, brings the later letters into line with the Greek values, and so also with the Cyrillic ones: from /r/ to /x/ are identical (100-600).

The new added letters, after /ʒ/ = 700, seem to have had the values ⰳ (or ⰴ) = 800, ⰵ = 900, and ⰶ = 1000; possibly values of 2000-9000 were allotted to the next letters, possibly in the following order: ⰷ - 2000, ⰸ - 3000, ⰹ - 4000, ⰺ - 5000, ⰻ - 6000, ⰼ - 7000, ⰽ - 8000, ⰾ - 9000. However there is no clear evidence of any such usage, and the question of the order of these letters must be decided on other criteria. (See on this esp. Trubeckoj, also Mareš, Vaillant). Most vague of all in this area is the possible order and value of the Slav vowel letters (cf. Tkadlčík 1972:391). The notion that there were originally 36 letters arranged in groups of 9 to provide the required numbers (Trubeckoj) is attractive, but

as yet has not been demonstrated. Likewise the notion that the numerical function of the letters preceded the alphabetic is not convincing (Žukovskaja 1964).

b) Cyrillic

Cyrillic, with its clear Greek-uncial derivation, adopted accordingly also the numerical value of the Greek letters; however it appears that the alphabetic order remained that of Glagolitic, with a few possible exceptions, viz.:

1) и and і retain their Greek order and value (8 and 10 respectively); but if our derivation of the Glagolitic forms is correct, this is not really a change for Cyrillic (see above);

2) the order of the jers and /y/ may have changed;

3) possibly also that of the letters for /x/ (ⱈ and ⱐ) through confusion;

4) the position of ѱ may have gone through more than one change; however, whether it originally represented /š/ or /t'/, we cannot say whether it would have been placed before or after the letters for /c/ and /č/; the numerical value is of no help in Cyrillic, but under the Glagolitic system, ⰾ (/ō/) would have had the value of 700, so the following two letters should have had the values 800 and 900; while the letter ⱍ (/c/) regularly has the value 900, it is not clear which letter had that of 800: it is sometimes ѱ, and sometimes ш. We might postulate that the letter occurring in that spot was the one reflecting *tj, viz. ⱛ or ѱ; this would explain the use of ѱ in this value. The Cyrillic reinterpretation of ѱ as a digraph would have caused an association between ѱ and т, causing ѱ to be placed after т; of course neither of these two letters had any numerical value in Cyrillic.

Note that two of the valueless Slav letters - ѕ and ж - retain their place, while the Greek-only letters - ѕ, ѧ, ѵ, ѳ - are placed at the end inspite of having numerical values; this at least means that we should not automatically identify order and numerical value.

Of the added Slav letters, ѵ, perhaps as the basic inheritor of the sounds [c/č], and with this own name *(črvь)*, is given the value of 90, making it clearly to be seen as derived from

Greek ϟ, ϙ, while the newer ѱ (Glagolitic ⱍ) has the remaining required value of 900, held at first by ѧ, corresponding to Greek ѯ (900), but transferred to ѱ partly by the order (after /ō/) and partly by the Glagolitic value of ⱍ (900). (It is possible that in Cyrillic too the two letters in question had a single, or confused, origin, namely the Greek variants of the symbol for 90 - ϟ and ϙ. Note too the subsequent "repeated" confusion of the two letters in Russian and the other Cyrillic alphabets.)

The number 6 was in Greek also a non-alphabetic symbol - ϛ - and this was continued in Cyrillic; however the letter ѕ (/dz/), which occurred immediately before ꙁ (/z/) (in Glagolitic order), acquired also the value 6, and in turn the symbol ϛ acquired the sound value /dz/.

Lastly, the sound /u/, represented in Glagolitic at first (we believe) by the digraph ⰱⱁ (from Greek ου), had to compete in Cyrillic with the letter ѹ (Greek υ, with the value 400), in spite of its sound value in Greek, and hence in Cyrillic, of /i/. It would certainly not have been long before the value 400 was passed to the new letter for /u/, viz. оу, which takes its place from the Glagolitic order.

In the same way, even if there were originally two letters for /x/, the value of 600 (from Greek) would have gone to the uncial ѫ, whatever the Glagolitic situation was.

4. NAMES OF THE LETTERS

There is no certainty about when the letters were given names (see Appendix 2), but most likely is during the Moravian period as part of the teaching process. It has also been pointed out (L'vov 1971:53) that the name *buky* itself was not South Slav in the meaning of "letter", the equivalent term there being *kъniga*. The mnemonic principle is much more likely than any philological motive or the copying of some other model - like Semitic or Runic. It is possible that there was an initial stage in which the letters had simple syllabic names, as in

Latin, which were then expanded into words for mnemonic purposes, or from the need for inflected forms (Vaillant 1955:29). This is one way of explaining those letters which "still" have only syllabic names, that is which have no recorded word-names (/c/, /š/, /št/, /ju/); however it is just as possible to argue from original words to "remnant" syllabic names (Tkadlčík 1972:389).

At any rate, to support the mnemonic principle, we should assume that initially all letters had full names. In "normal" circumstances simple high-frequency words would be most likely, as was the case with the original Semitic names (ox, house, door, hand, water, etc.) and the Runic ones (hail, ice, birch, sun, etc.); however this was clearly not the case in Slavonic, where all the recognizable names are abstract, e.g. *vědi, živěte, myslite, pokoi, oukъ*, and include secondary parts of speech, e.g. *iže, kako, dobro, dzělo, našъ, onъ*. Given the religious nature of the teaching involved, such abstraction is not surprising, however if religious content were the only criterion we would expect different names in many cases, e.g. *nebo* alongside *zemlja, otъcъ* (or *otъče*) rather than *onъ*. One is led to the thought that the names *in order* had a meaning also, that the alphabet could be recited as a set of sentences, or at least phrases, with religious significance, perhaps actual prayers. This notion has been advanced often, but it it still elusive, and even if one imagines different endings on the words, it is really not possible to make out more than one or two phrases (cf. Hamm (1974:24), who tries to make up a whole sentence, which is unsatisfactory even up to *tvrъdo*, but then he claims that the letters following *tvrъdo* were thereby introduced as the "hard" ones! Tkadlčík (1972:389) tries to arrange the letters into twelve groups of three, but can claim success with only seven of these groups.) Possibly each word, separately or in phrases, was the beginning of an important prayer or section of the Gospel (cf. the acrostic version of Chrabr, from the 13th C., in such phrases, though the initial words there are different from the traditional names). No solution to this problem seems to be in sight, even if the origins of the unknown names is discovered.

Certainly the form of the names must have changed, as can be seen in the existing variants of the known ones, for example in PA and CG we have respectively: *bocobi - buky*
uedde - vidi
giuete - zeywyte, etc.
Of course both of these sources may also reflect ignorance of the Slav words themselves. Such changes in form could well be responsible for the obscurity of many names, e.g. *frъtъ, grъvъ, erъ, jęsъ*, that is they may have had clear meanings originally, but these have been lost through corruption of their forms. This is more likely than that "foreign" names were used - on the model of Greek's retention of the Semitic names - since this would defeat the mnemonic intention. As mentioned above, the syllabic names, like *ci, ša, šta, ju*, can be seen either as an early stage, with words for some reason not being developed from them, or as remnants of earlier words lost by the same corruption as in the *frъtъ* type. However they might also point to late inclusion or some confusion in value: if /c/ was seen as a variant of /č/, then only one name need exist until the letters are allotted clear separate values; if the form ѱ originally meant /t'/ or /š/, and then /št/ in one area only, and the form ѫ was established only in the Cyrillic period, then the names for these two might be late also.

APPENDIX 1: ACROSTIC PRAYERS

ORDER	CONST	CHRABR	VSEMU MIRU	ROŽD	BOGOJAV	O PEREVODE
1	аѕъ	аѕъ	аѕъ	аггл҃ьскыѣ	адаѧе	аѕъ
2	боже	вѣ҃	бг҃ъ	вєѕнаѵл'ноу	вєѕ$^{\Delta}$на	вѣ҃
3	видимыѧ имъ	вѣ$^{\Delta}$	вѣдаю	врьт'пе	вифлеѥме	видѣ$^{\kappa}$
4	господа	гл҃	глю҃	горы	горы	гл҃
5	да	доврο	доврο	диволь	дланию	довръ
6	ѥже	есьмь	есть	жєтьствомь	ег$^{\Delta}$а	есъ
7	живоущиимъ	животь	животъ	живоносноѥ	желѣѧ	живо^{т}
8	ѯѣло	вѣло	вло	ѯєѣѯ$^{\Delta}$ѧ	вѣло	вѣлш
9	ѯаконъ	ѯылѧ	ѯылаю	ѯы'лѧ	ѯылѣ	ѯылл
10	иже	иже	иже	ис	іс҃	иже
11	и	и	і	иродє	иѯвавителю	и
12	летитъ	гємоноу		гєѳни	галилеа	
13	иѧ	кое	како	колѣна	колѣноша	кое
14	людие	людие	людіе	лици	людьмь	людіе
15	милости	мисльїѧ	мыслите	михаи	мове	мыслїѧ
16	иѧ	на	на	небо	не	на
17	отъче	шни	огнь	образа	оцѣщение	онь
18	просѧщоуоумоу	пилатоу	покои	придиже	поуто	пилатоу
19	роущѣ	рьцѣтѧ	рече	рьцы	рѧцѣ	рьцѣте
20	силоу	слово	слово	словеса	сьт'цѣы'ся	словомь
21	тѕі	трьпоѣвень	твєрда	трепет'но	трепетомь	тръно^{в}
22	ѵпостасъ	оударень	оуши	оупостасьмь	оупостась	оударень
23	фарасѧа	фарашна	фарашн	фарашновы	фарашна	фарашна
24	херовьскоу	херовъіми	хероуєимы	хероуєимомь	херовимомь	херо҃вїмъ
25	о	ѡ҃	ѡ҃вєроу	отъ	ѡ	ѡ҃, шни
26	печаль	пѣ$^{\widetilde{с}}$ми		пѣ$^{\widetilde{с}}$ми	па$^{\widetilde{с}}$ми	пѣснын
27	цѣломоудрено	цр$^{\widetilde{с}}$тво	ци	цр҃твоуѧи	цр$^{\widetilde{с}}$твоуѧи	цр$^{\widehat{с}}$тво
28	оуодеса	оу҃ѣнолюбьїма	оврѣь	уини	оуодеса	оу҃нш҃любїа
29	шестькрилатъ	шестокрили	шоуюмы	шестокрилати	шестокрилатаа	шестокрилати
30	шьствоую	што	цитомы	шєстиина	шестеїа	уто
31	имени	ерось	ерданъ	игран	игран	ерха
32	маѣ	мако	горы	маноже	мако	мано
33	хвалоу	вже	ересь	хвалѧ	хвалаши	
34	юже			ижє	ѧже	
35	юнъ	юдене		юже	юже	юдеїе
36	ѧѕъіиъ	есте	ѧть	ѧѕъіци	еѕъіци	вже

APPENDIX 2: ALPHABETS

ORDER	SOUND	MA1	MA2	PA	RAD	TOURS	PA	CG	TO(1)	TO(2)	BAN
1	/a/						aʃ	az	az	ⱑⵣⵏ	ⴰⵣ
2	/b/						bôcobi	buki	bouki	ⲃⲟⲩⲕⲓ	ⴱⴽⵓⴷⵅⵉ
3	/v/						uêdde	widi	vidi	ⲃⲓⲇⲓ	ⴼⵉⵜⵓ
4	/g/						glâgoli	glagole	glagoule	ⲅⲗⲁⲅⲟⲗⲉ	ⵖⵍⴰⴳⵓⵍⴻ
5	/d/						dôbro	dobro	dobro	ⲇⲟⲃⲣⲟ	ⴷⵓⴱⵔⵓ
6	/e/						hiêʃt	gest	iest	ⲉⲥⲧⲏ	ⵢⴻⵙⵜⵏ
7	/ž/						gîueta	zeywyte	siwite	ⲍⲏⲃⲓⲧⲉ	ⵣⵏⴱⵉⵜ
8	/dz/						zêllo	zelo	zelo	ⲍⲉⲗⲟ	ⵣⴻⵍⵓ
9	/z/						zêmia	zemla	zemlia	ⲍⲉⲙ'ⲗⲁ	ⵣⴻⵎⵍⴻⴰ
10	/i_1/					+	iʃe	yzze	ise	ⲓⲙⲉ	ⵉⵥⵉ
11	/i_2/						iʃei	i	i	ⲓ	ⵉ
12	/d'/								ge	ⲅⲉ	
13	/k/						câco	kako	kakou	ⲕⲁⲕⲟ	ⵅⴰⵅⵡ
14	/l/						lûddie	ludy	loudi	ⲗⲩⲇⲓ	ⵍⵓⴷⵉⴰ
15	/m/						muʃtlite	myslyte	mislite	ⲙⲩⲥⲗⲏⲧⲉ	ⵎⵉⵙⵍⵏⵜⴻ
16	/n/						naʃ	nass	na	ⲛⲁⲥⲥ	ⵏⴰⵙⵙ
17	/o_1/						on	on	on	ⲟⲛ	ⵄⵏ
18	/p/						pôcoi	pokoy	poquoy	ⲡⲟⲕⲟⲩ	ⵠⵓⵅⵓⵢ
19	/r/						recî	rczy	rci	ⲣ'ⲥⲓ	ⵔⵜⵥⵉ
20	/s/						oʃlôuo	slowo	slowo	ⲥⲗⲟⲩⲟ	ⵙⵎⵍⵓⵡ
21	/t/						tôrdo	trdo	tardo	ⲧⲣ'ⲇⲟ	ⵜⵔⵜⵎⵓ
22	/i_3/						hic				ⵀⵅ
23	/u/							uet	ouq	ⲟⲩⲕⲏ	ⵓⵇ
24	/f_1/						fort	frt	frt	ⲫⲣ'ⲧⲏ	ⴼⵔⵜ
25	/x_1/			(32)				chyr	chire	ⲭⲓⲣⲏ	ⵅⴻⵔ
26	/o_2/						ot	ot	oth	ⲟⲧ	ⵄⵜ
27	/t'/f_2/						pe				
28	/c/			(27)				ci	ci	ⲥⲓ	ⵜⵛⵉ
29	/š/						ʃaraue	czrw	czrf	ⲥⲣⲃⲏ	ⵜⵛⴻⵔⴱⵏ
30	/ǎ/						ʃa	ssa	scha	ⲥⲁ	ⵙⵙⴰ
31	/št/							sstya	schtsa	ⲥⲧ'ⲥⲁ	ⵙⵙⵜⵢⴰ
32	/ь/						hier	ger	ger	ⲉⲣⲩ	ⵢⴻⵔ
33	/ъ/						peller				ⵢⴻⵔ
34	/ɣ/										ⵢⴻⵔⵏ
35	/ě/						hiet	yat	iath	ⲓⲁⲧⲏ	ⵢⴻⴰⵜ
36	/x_2/			(26)							

APPENDIX 2

ORDER	SOUND	MA1	MA2	PA	RAD TOURS	PA	CG	TO(1)	TO(2)	BAN
37	/ǫ/		(39)							
38	/jǫ/					iusz	yus	jouzz	ꙗoch	γέους
39	/ju/			(38)						γ̌ou
40	/ę/							jest		
41	/ję/					hie		je		γέα

Note: Forms under TOURS are the only ones given in source.
A microfilm of the manuscripts proved unreadable.

APPENDIX 3: ORDER & NUMERICAL VALUE

	STAGE 1: CONSTANTINE			STAGE 2: MORAVIA		STAGE 3: BULGARIA		CYRILLIC	
ORDER	FORM	SOUND	NUMBER	FORM	SOUND	FORM	SOUND	FORM	NUMBER
1		/a/	1		/a/		/a/	а	1
2		/b/	2		/b/		/b/	в	-
3		/v/	3		/v/		/v/	в	2
4		/g/	4		--4		/g/	г	3
5		Gk.γ	-						
6		/d/	5		/d/		/d/	д	4
7		/e/	6		/e/		/e/	е	5
8		/ž/	7		/ž/		/ž/	ж	-
9		/dz/	8		- 8		/dz/	ѕ	6
10		/z/	9		/z/		/z/	з	7
11		/i/	10		/i/		/i/	і, ї	10
12		/i/	20		/i/		/i/	и	8 (Θ = 9)
13		/d'/	30		- 30		Gk.γ'		-
14		/k/	40		/k/		/k/	к	20
15		Gk. k'	-						
16		/l/	50		/l/		/l/	л	30
17		/m/	60		/m/		/m/	м	40
18		/n/	70		/n/		/n/	н	50
19		/o/	80		/o/		/o/	о	70 (Ξ = 60)
20		/p/	90		/p/		/p/	п	80
21		/r/	100		/r/		/r/	р	100 (Ϙ = 90)
22		/s/	200		/s/		/s/	с	200

APPENDIX 3

ORDER	FORM	SOUND	NUMBER	FORM	SOUND	FORM	SOUND	FORM	NUMBER
23		/t/	300		/t/		/t/	T	300
24		/u/	400		/u/		/u/	ⱱ,ŏ	(400 (b))
25							Gk.ū,i	ⱱ	400 (a)
26		/f/	500		/f/		/f/	ⱡ	9
27		Gk. f	-				/f/	ⱷ	500
28		/x/	600		/x/		/x/		-
29		Gk. x	-		/h/		/x/	ⱨ	600
30		(Gk.) o	700		/o/		/o/	ⱳ	800 (ψ = 700)
31		/t'/	800		- 800		/št/	ⱳ	
32		/c/	900		/c/		/c/	ⱬ	(900 (b))
33		/ǰ/	1000		/ǰ/		/ǰ/	ⱱ	90
34	?/	/š/	2000	?/	/š/		/š/	ⱳ	
35		/ƀ/	3000		/ƀ/		/ƀ/	ⱬ	
36		/ƀ/	4000		/ƀ/		/b/	ⱱ	
37	?/	/ɣ/	-		/ɣ/		/ɣ/	ⱬⱡ	
38		/ŏ/	5000		/ŏ/		/ŏ/	ⱱ	
39		/ju/	6000		/ju/		/ju/	ⱱ	
40		/ǫ/	7000		/ǫ/		/ǫ/	ⱱ	
41		/ǰǫ/	8000		/ǰǫ/		/ǰǫ/	ⱱⱱ	
42		/ę/	9000		/ę/		/ǰę/	ⱱⱱ	
43							/ę/	ⱱ	900 (a)

ABBREVIATIONS AND SOURCES

ABBREVIATION	means	SOURCE
Ban	Banduri's Alphabet	Lavrov 1928:150
Bogojav	Bogojavlenski akrostix	Ivanova-Konstantinova 1971:359
CG	Codex Giganteus	Lavrov 1928:150
Chrabr	Bălgarskaja peredelka skazanija o pismenax	Lavrov 1930:166
Const	Azbučnaja molitva Konstantina presvitera	Lavrov 1930:199
MA MA1 MA2	Munich Alphabet = Glagolitic part = Cyrillic part	Vajs 1932; Hamm 1974:10
O perevode	Skazanie o perevode svjaščennogo pisanija	Lavrov 1930:171
PA	Paris Alphabet	Vajs 1932; Hamm 1974:10
Preslav	Preslav graffiti	Gošev 1961
Rad	Radosav's Alphabet	Hamm 1974:20
Rožd	Roždestvenski akrostix	Ivanova-Konstantinova 1971:350
Tours TO(1) TO(2)	Tours Alphabet = Latin names = Cyrillic names	Kos 1924
Vsemu miru	Tolkovaja azbuka "Az esmь vsemu miru svet"	Demkova/Droblenkova 1968:54

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