

# Khitan Studies

## 1. The graphs of the khitan small script

### 3. The consonants. 3.3 The oral velar and uvular consonants\*

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#### ABSTRACT

In the fifth part of this series of papers the authors investigate the way how the Khitan Small Script (KSS) rendered the oral velar and uvular consonants stops in initial position.

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#### KEY WORDS

Khitan, Khitan Small Script, Khitan velar and uvular consonants.

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In this paper we continue our former investigations<sup>1</sup> on the Khitan Small Script (KSS). As a point of departure we accept the readings of Chinggeltei, Wu Yingzhe and Jiruhe as they are given in their newly published three volumes monograph (CWJ, 2017), but give the most important earlier readings and make remarks in cases where the readings of CWJ are or may be problematic. Our procedure is the same as in our earlier papers. First we give examples of the Khitan transcription in KSS of Chinese words (titles, personal names, geographical names). This is followed, if extant, by Chinese loanwords in Khitan, and finally some examples are introduced from the Khitan original lexical stock<sup>2</sup>. A discussion of the nasals will follow in one of the next papers.

## VELAR AND UVULAR CONSONANTS IN INITIAL POSITION

In volume 64 (2011) of *Acta Orientalia Hung.*, Yasunori Takeuchi published an important paper with the title ‘Kitan Transcriptions of Chinese Velar Initials’ (Takeuchi 2011), where he also summarized some of the earlier researches. Our approach is somewhat different and follows a system started in 2016 (see Róna-Tas 2016, 2017, Wu and Róna-Tas 2019, Wu and Róna-Tas 2020). Takeuchi only dealt with a restricted number of initials, we will treat all known ones and will try to place the oral velars and uvulars in the system of Khitan graphs and the sound system reflected by it. Our approach is also different from that of Shimunek (2017).

The system of Romanisation accepted by the Research Group in Höhhot includes the following Latin letters: <g>, <k>, <q> and <x>, <h>. We have, however, call the attention, to the fact that the Latin letters used in the process of Romanisation are not phonetic symbols. In the best case we have to use them as code letters. This is the reason why we put them into <angle brackets>

We distinguish *glyphs*, *alloglyphs* and *heteroglyphs*. An *alloglyph* is a variant, very similar to the basic glyph, which represents the same value as the basic glyph. A *heteroglyph* is a different symbol which represents the same value as the basic glyph. For instance ‘e’ is represented by <e> 𐰽 (348), <e<sub>2</sub>> 𐰽 (109), <e<sub>3</sub>> 𐰽 (264.1) all three are alloglyphs, while in case of ‘en’ the glyphs <en> 𐰽 (140) and <én<sub>2</sub>> 𐰽 (100) and <ēn> 𐰽 (073) are all heteroglyphs.

Let us first have a look to all glyphs or graphs<sup>3</sup> beginning with velars or uvulars:

### G:

<g> 𐰽 (334)<sup>4</sup>, <ge> 𐰽 (349), <ge<sub>2</sub>> 𐰽 (112),<sup>5</sup> <go> 𐰽 (319)<sup>6</sup>, <gor> 𐰽, <gor<sup>o</sup>> 𐰽 (166, 167, THREE, earlier <gur>), <gu> 𐰽 (165)<sup>7</sup>, <gu<sub>2</sub>> 𐰽 (165.1, earlier 451), <gú> 𐰽 (297)<sup>8</sup>, 9 glyphs out of which three are alloglyphs,

Earlier the following glyphs were read with an initial <g>- but corrected by CWJ: <gi> 𐰽 (146, CWJ: <es>), <gi<sub>2</sub>> 𐰽 (336, CWJ: <ul<sub>2</sub>>), <go<sub>2</sub>> 𐰽 (304, CWJ: <du<sub>2</sub>>), <giu> 𐰽 (160, CWJ has no reading).

<sup>1</sup> See the papers cited in the References under Róna-Tas, as well as Wu and Róna-Tas.

<sup>2</sup> The authors are grateful for the various useful suggestions of Marc Miyake.

<sup>3</sup> Earlier Róna-Tas used the term *graph*, which he changed to *glyph* to be in accordance with the usage of other colleagues.

<sup>4</sup> C read <k>.

<sup>5</sup> A read <ba>, K read <ge>.

<sup>6</sup> A read <g<sup>wo</sup>>, C read <k>.

<sup>7</sup> C read <ol>.

<sup>8</sup> WJ <pú>, C <po>, K <pú>, A <gui>, Sh17 <pu>.



## H:

<h> 夂 (340, former <x>), <ha> 𠂇 (051), <har<sub>3</sub>> 𠂇 (006, earlier MOUNTAIN and <har<sub>2</sub>>), <har> 虫 (321), <har<sub>2</sub>> 虫 (321.1), <heu> 介 (250), <hoi> 一 (001 earlier NORTH), <hoii> 𠂇 (010), <hong> 主 (075), <hor> 尙 (047), <hu> 𠂇 (151), <hu<sub>2</sub>> 𠂇 (014, former <húr>), <hul> 𠂇 (048<sup>9</sup>), <hut> 𠂇 (259, former <hur>), 14 glyphs.

The following changes were made: <ha> 主 (066 CWJ no reading), <har<sub>4</sub>> 虫 (287 CWJ: <xar>), <ho> 𠂇 (076, CWJ: <or>), <hó> 田 (309, CWJ: <bod>). Earlier Kane read <hoid> 𠂇 (009) as a contraction of <hoi> and the plural <d> (Kane 2009: 36), <hon<sub>2</sub>> 主 (328, CWJ: <kei>), <hon<sub>2</sub>\*> 主 (035.2 former number (381), CWJ new number, no reading), <hor> 尙 (046, CWJ no reading).

## K:

<k> 𠂇 (283), <kei> 主 (328)<sup>10</sup>, <ki> 𠂇 (163)<sup>11</sup>, <ku> 几 (178), 凡 <ku<sup>o</sup>> (178.1, earlier 419), <kú<sub>2</sub>> 𠂇 (233), <kus> 主 (042)<sup>12</sup>. 7 glyphs, out of which one is an alloglyph. Interesting is 𠂇 (233), where the right side is the same as 几 (178), and the left occurs in other glyphs.

Earlier 𠂇 (039) was read by Kane as <kai><sup>13</sup>, CWJ has no reading.

## Q:

<qa> 𠂇 (053), <qid> 𠂇 (365), <qo> 力 (168), <qó> 欠 (169), <qu> 余 (246), <qú> 𠂇 (118), 6 glyphs.

Earlier the following glyphs were read with <q>, but were changed by CWJ: <qí> 𠂇 (323 CWJ: <te>), <qú> 𠂇 (117 CWJ: no reading), <qur> 𠂇 (014 CWJ: <hu<sub>2</sub>>).

## X:

<xa> 𠂇 (130, former reading: <ha>), <xar> 虫 (287, former reading: <har<sub>4</sub>>), <xe> 𠂇 (268, former readings: <el, il, xi, hai>), <xo> 8 (057 former readings: <xuo, ho>), <xu> # (036, former reading: <hu>), <xua> 𠂇 (143, former reading: <hua>), 6 glyphs.

The first interesting feature is the similarity of the glyphs <g> 几 (334), <ku> 几 (178), <ku> 凡 (178.1) and <ku<sub>3</sub>> 𠂇 (233). Kane (2009: 56–57) wrote a small article on glyph 几 (178), its identification and research history. The glyph is to be read /ku/ or /kü/ and has the meaning ‘man, person’ (Mo *kümün*, MMo *kü’ün*). The glyph 几 (178) has a dotted variant, earlier numbered (427) in WJ, and later as (178.1) by CWJ. This is important, because in case of the dotted pairs it is sure that the dot, in most cases, denotes masculine gender; however, in cases where the dot is absent it may denote feminine or masculin gender or may be due only to negligence. In other words the absence of the dot is ambiguous.<sup>14</sup> The glyph 𠂇 (233) was earlier transcribed <kú>, later by CWJ <ku<sub>2</sub>>. The glyph has on its right side the glyph 几 (178), and on its left side the diacritic sign which we separated in the analysis of the labials. (Wu and Róna-Tas 2019: 49–50).

<sup>9</sup> Kane gave <nen> as mnemonic.

<sup>10</sup> WJ <hong>, K <on>, Sh17 <yon>.

<sup>11</sup> C <x, k>, A <hae, kiae>.

<sup>12</sup> A <man>.

<sup>13</sup> No reading, K treated it as mnemonic.

<sup>14</sup> In the overwhelming majority of the cases it can be shown, that the dot denotes grammatical gender. In a few cases the dot may have other functions.



The glyph 𠃉 (334) <g> seems to have the same basic sign with a small dash above, and denotes the voiced or unaspirated pair of 𠃉 (178).

First we have to analyze a selection of Chinese words transcribed with <g> by the Khitan small script:

### <G> in word and syllable initial position

Table 1. Khitan <g> in transcriptions of Chinese

Romanisation	Glyph	Chinese	LMCh	EMCh	LMCh	Sources, occurrences, frequency
<g.m> <sup>16</sup>	𠃉 又 (334.133)	<i>jīn</i> 金 ‘metal, gold’	<i>kim</i>	<i>kim</i>	<i>kim</i>	DiX19-13/15, +18x
<g.ün> <sup>17</sup>	𠃉 亦 (334.329)	<i>jūn</i> 軍 ‘army’	<i>kyn</i>	<i>kyn</i>	<i>kün</i>	DiX19-13/15
<g.ün>	𠃉 亦 (334.329)	<i>jūn</i> 郡 ‘prefecture’	<i>khyn</i>	<i>gun</i>	<i>gün</i>	DiX10-14. The above and this together +137x
<g.ing> <sup>18</sup>	𠃉 用 (334.303)	<i>jīng</i> 京 ‘capital’	<i>kiājŋ</i>	<i>kiājŋ</i>	<i>king</i>	Lang1-6, Dao 13-1, +18x
<g.u.on> <sup>19</sup>	𠃉 𠃉 𠃉 (334.131.154)	<i>guān</i> 管 ‘to be in charge of, manage’	<i>kuan</i>	<i>kwan</i>	<i>kuon</i>	Zhong33-3 only once
<go.n> <sup>20</sup>	𠃉 公 (319.251)	<i>guān</i> 觀 ‘to watch’	<i>kuan</i>	<i>kwan</i>	<i>kon</i>	Zhong8-13, + 12x
<g.ung> <sup>21</sup>	𠃉 太 (334.106)	<i>gōng</i> 公 ‘prince’	<i>kəwŋ</i>	<i>kəwŋ</i>	<i>küŋ</i>	Zhong4-6, +18x
<g.iu.ung>	𠃉 𠃉 𠃉 (334.019.345)	<i>gōng</i> 宮 ‘palace’	<i>kiwŋ</i>	<i>kuwŋ</i>	<i>kiüŋ</i>	Lang 2-9, +20x, K112,
<g.ui>	𠃉 𠃉 (334.262)	<i>guó</i> 國 ‘state’	<i>kuǎk</i>	<i>kwək</i>	<i>kuj</i>	Lang5-12, +131x, K89,
<g.ui.i> <sup>22</sup>	𠃉 𠃉 𠃉 (334.262.339)	<i>guì</i> 貴 ‘noble’	<i>kyj</i>	<i>kuj</i>	<i>kuj</i>	Gu21-1, Xiang32-8
<g.ung> <sup>23</sup>	𠃉 𠃉 (334.345)	<i>gōng</i> 功 ‘merit’	<i>kəwŋ</i>	<i>kəwŋ</i>	<i>küŋ</i>	Ling5-15 +113x

<sup>16</sup> In: *Jinsujun* 金肅軍, transcribed as 𠃉 又 今 𠃉 亦 (334.133 244.019 334.329) <g.m s.iu g.ün> ‘\*Gimsiugüm, a placename’; Chin *Jinsujun* 金肅軍 a name of a settlement acc. to the *Liaoshi*’ (DiX19-14, WJ 97), mentioned under the year 1050 (WF: 590).

<sup>17</sup> In the same geographical name as above, also in titles for ‘military’ as in ‘military governor’ *tongjun shixiang* 統軍使相.

<sup>18</sup> On <g.ing> ‘capital’, see Róna-Tas 2019.

<sup>19</sup> In: *Guanzhong* 管仲 in the personal name of Xiao Zhonggong 蕭仲恭, transcribed as 𠃉 𠃉 𠃉 [𠃉 太 𠃉] (344.131.154 147.106 273) <g.u.on ju.ung<sub>2</sub> un>, genitive case CWJ 966.

<sup>20</sup> In: *guanchashi* 觀察使 transcribed as 𠃉 公 𠃉 𠃉 (319.261 375 180) <go.n.ca.šī>, also in: <tai ci.eu.un go.n ca.an cu.n>, Chin *taizhou guan cha yuan* 泰州觀察院 ‘the supervising office of Taizhou Prefecture’ (DiX20-1/5), WJ 97.

<sup>21</sup> In: *gongzhu* 公主 ‘princess’.

<sup>22</sup> In: *Guide Zhou* 貴德州, 𠃉 𠃉 𠃉 今 𠃉 𠃉 𠃉 (334.262.339 247.020 162.067) <g.ui.i t.e.y ci.eu> ‘a place name, the name of the prefecture’.

<sup>23</sup> In: *gongchen* 功臣 ‘meritorious official, a title’.



<g.ui.in> <sup>24</sup>	𠂇火兩 (334.262.018)	Guiyin 瑰引	kuaj jin	kwəj jin	kuj jin	DiX13-8
<g.ia.ém> <sup>25</sup>	𠂇才全 (344.335.270)	jian 監 'supervise'	kja:m	kaim/ kɛ:m	kjam	Xiang10-3

From the above we can conclude that Khitan <g> transcribed always contemporary Liao Chinese unaspirated strong velar stop, mostly /\*k/, but in case of *jun* 郡 'prefecture', the Khitan <g> is reflecting either EMCh /g/ or LMCh /kfi/.

### Loanwords in Khitan with <g>:

**gu** 𠂇𠂇 (334.131) <g.u> 'jade' (K:2, 103, occurs 21 times in Index), *Liaoshi gu-wen* 古穩, cf. *Ju guwen*, *guwu*, *Ma gu* 'jade' (Kane 1989: 351), *Mo ogiu*, *giu*, *oyun*, *oyuu*, *Da guu* 'glass', see also Tib *g-yu* 'turkois', Chin *yu* 玉, MCh *nywk*, EMCh *nuawk*, Old Chin *\*ngjowk* (<*\*ng(r)jok*, Baxter 1992: 806). This word is not a loanword in the narrow sense, rather a cultural Wanderwort borrowed several times. The Khitan word itself is in any case very old.

**gu taulia** 𠂇𠂇无矢力 <g.u tau-lí.a> 'jade hare = moon' (Xuan29-9, K20);

**ging** 𠂇𠂇 (334.303) <g.ing> 'capital' ← Chin *jing* 京, LMCh, EMCh *kiajn*, the Khitan form reflects a LCh *king*;

**uur ging** 𠂇𠂇化 𠂇𠂇 (092.236 334.303) <u.ur g.ing>, 'Supreme capital', Chin *shangjing* 上京' (K:119, 204, 208);

**udur ging** 𠂇𠂇火 𠂇𠂇 (344.097 334.303) <ud.úr g.ing>, 'Eastern Capital', Chin *Dongjing* 東京;

**tele ging** 𠂇𠂇今 𠂇𠂇 (247.093 334.303) <te.le g.ing>, 'Southern Capital', Chin *Nanjing* 南京;

**sei ging** 𠂇𠂇今 𠂇𠂇 (244. 339 334.303) <s.i g.ing>, 'Western Capital', Chin *Xijing* 西京. On the Khitan name of the five capitals, see Róna-Tas 2019.

### Khitan words with <g>

**gür** 𠂇𠂇 (334.097) <g.úr> 'state' (K3, 88, 118, DiX15-3, Xiang5-1, Index 53x), pl. **güres** 𠂇𠂇𠂇 (334.097.244, Index 11x) <g.úr.s>, genitive case is **güren** 𠂇𠂇𠂇 (334.097.140) <g.úr.én> Index 77x. [cf. MMo *gür* in: *gürkan* 'title of the Karakhitan Emperor' (SH), *Mo gü(e)* 'a crowd of people', *Da gurun* 'country, nation', Khitan → *Ma gürün*.] Khitan *gür* is an old Mongolic word and not related to Chin *guo* 國, EMCh *kwək* as was supposed by Kane (K167) and WJ, who wrote: 'Ultimately it cannot be ruled out that there is a connection with Chinese 國 *guo* <*\*kwək* id.' (WJ74).'

**genir** 𠂇𠂇𠂇 (334.140.144) <g.en.ir> 'sad' (K114, DiX38-13, Xiang34-1, Index 56x) [cf. *Mo gunig* 'sadness' <*\*guni-* 'to grieve', *gunira-* 'to be or become sad, grieved', Khal *guni-*, *gunig*. CWJ read (144) as <ir<sub>2</sub>>, and thus the word <g.en.ir> earlier <g.en.un>-.

**genir cawun** 𠂇𠂇𠂇 𠂇𠂇𠂇 (334.140.144 162.197 070.273) <g.en.ir<sub>2</sub> c.ah w.un> 'eulogy, Chin *aice* 哀冊, 'mourning tablet', *wen* 文 'document'.

**jaw ay genir leše** 𠂇𠂇𠂇 𠂇𠂇𠂇 𠂇𠂇𠂇 (015 122 334.140.144 261.315.131) <jau ai g.en.ir<sub>2</sub> l.še.u > 'hundred years sadness/mournig' (DiX38-13).

The word **genire** occurs 24 times in the Index. In 8 cases it ends in <e<sub>2</sub>> 𠂇 (109) and in 16 cases in <e> 𠂇 (348). The two glyphs are alloglyphs and do not occur in the same inscription.

<sup>24</sup> In: Chin *Guiyin* 瑰引 'a name' (DiX13-8).

<sup>25</sup> In: Chin *dujian* 都監 'chief supervisor' (Xiang10-3).



**genire todga'ar** 九和丌券 今市並本 (334.140.144.348 247.016.051.123) <g.en.ir<sub>2</sub>.e t.od.ha.ar> 'participated at the funeral' (Xiang43-4).

**genire huajua** 九和丌券 列艾为 (344.140.144.109 151.082.1.189) <g.en.ir.e hu.aju.a> 'sadness and pain' (Xuan24-8).

### <K> in word and syllable initial position

Table 2. Khitan <k> in transcriptions of Chinese

Romanisation	Glyph	Chinese	LMCh	EMCh	LCh	Sources
<k.ai>	𐰇𐰏 (283.122)	kai 開 'open, begin' <sup>26</sup>	khaj	khaj	khaj	Ling6-17 +9x (K17)
<ki.ēn>	𐰇𐰏 (163.073)	xian 縣 'district, county' <sup>27</sup>	xhijyan	ɣwen	kyen	Lang2-6 +13x (K264, 7.057)
<ki.ēn>	𐰇𐰏 (163.073)	xuan 玄 'black, dark' <sup>28</sup>	xhijyan	ɣwen	kyen	Nan5-20
<ku.ung>	𐰇𐰏 (178.345)	kong 孔 <sup>29</sup>	khəwŋ	khəwŋ	khūng	Yu15-51, Di1-6
<ku.ung>	𐰇𐰏 (178.345.)	kong 控 <sup>30</sup>	khəwŋ	khəwŋ	khung	Xiang52-38 K56
<k.ey>	𐰇𐰏 (283.020)	kai 開 'open, begin' <sup>31</sup>	khaj	khaj	khaj	Nan1-34

As we see the <k-> is rendering in most cases an aspirated strong velar stop /k'/, or an aspirated strong velar fricative, the aspiration of which may be voiced /xh/. From this we can learn that KSS <k> stood for a /k'/.

<sup>26</sup> In the title *kaifu yitong sansi*, *Chin* 開府儀同三司 <k.ai pu ŋgi.i tu.ŋg s.am.si> 'commander unequalled in honour', (Ling6-17, Zhong21-40) see K17, a variant: Zhong5-16, Pu4-16: <k.ai fu ŋgi.i tung s.am.si>. In Nan1 we find <k.ei> for *kai* 開 see below. According to K68-69 also in the title *kaiguobai* 開國伯 <k.ai g.ui b.ai>, but this title occurs only with 𐰇𐰏 <h.ai> in Gu2-22 and Zhen22-30 as <h.ai g.ui b.ai>, see below. See also in the title *qishui xian kaiguo nan* 漆水縣開國男 (K263, 7.037) <s.i š.oi ki.ēn k.ai g.ui na am> (Hong8-17), in Xian1-17 a part of this title occurs as: <[l.a.an l.ing] ki.ēn h.ai g.ui na.am>.

<sup>27</sup> In such expressions as <s.in c.ing ki.ēn> *Chin Xincheng xian* 新城縣 'District of Xincheng' or <ta.ang.en ki.ēn> 'District of Tang' (Lang2-5), <ú s.ing k.ien> 'the district of Wuqin' (Yu14-33/34, see also K264 No7.055), etc.

<sup>28</sup> In *Xuanzu* 玄祖 'name of an emperor' (Nan5-20, K193n, WF399).

<sup>29</sup> In the Chinese name *Kongning* 孔寧 (K123) 𐰇𐰏 𐰇𐰏 <ku.ung.iŋ> (178.345.222) occurring in the following places: <xu.ur qid.un.i ku.ung.iŋ mo.u s.in.iŋ l.bl.uh> (Yu15-51), <ya deu.un s.in ong on go.er.en ku.ung.iŋ t.il.e tai.ba.en n.ra.de RECORD.ge.en>(Di1-6, also in Di2-7).

<sup>30</sup> In the name *Kongguli* 控骨里 transcribed as 𐰇𐰏 𐰇𐰏 (178.345.097) <ku.ŋj.úr> occurs in Xu52-38, further in Yu10-39,12-49, 17-8., 19-27, 20-14, Guang22-5, Gao16-28, Di20-26, Chao7-13, Wu10-38, Hu4-28 as a name or as a part of a name, see also K56. The word which occurs 12 times, in some cases seems to be a personal name. If so, see Mong *qonggur* 'fallow, chesnut (of a horse)' or *qonggur* 'dear, darling, openhearted', DaE *kəŋg:r* 'fallow', see also Turkic *qongur* (WOT: 560-562). The word for colour and for 'kind, nice, darling etc.' are of the same origin, they are the result of a semantic split.

<sup>31</sup> In the title *kaiguogong* 開國公 'dynasty founding duke' transcribed as 𐰇𐰏 𐰇𐰏 𐰇𐰏 Nan1-34 (also K191, note16). The glyph 𐰇 (328), earlier read as <hong<sub>2</sub>> is now read by CWJ as <kei>.



## Khitans words with &lt;k-&gt;

- kem** 敕命 (283.257) <k.em> ‘imperial edict, Chin *chi* 勅 (K94-95, Sh3 267) | Mo. *kem* ‘measure, term’, to *keme-* ‘to speak’, MMo *keè-*, Mo *ge-* ‘to say’, Da no data, Index 67x;  
**kem dairi** 敕命 兩命 (283.257 017.255) <k.em dai.ri<sub>3</sub>> ‘he heard [received] the imperial edict’ (Xing36-17, Ren32-11, Dao3-1, K95);  
**kem tegü** 敕命 令句 (283.257 247.165) <k.em te.gu> ‘the edict says’ (Xu32-9, K69, 95).
- kiú** 叔火 (283.289) <k.iú> ‘younger sister, younger daughter’ (Index 2x, both in Gu12-19, 17-5), also 火丙 (283.019), <h.iu>, Index 8x, and 火火 (340.289) <h.iú> in Xiang13-10 and Index 12x, but see **kiü** 叔火 (283.289) <k.iú> ‘male child, son’ (K24-25, 116 in Gu 17) | Mo *köbegün* >*keü*, Da *keku*, most likely **keü**.  
**kiú em.n** 叔火 丙公 (283.289 021.251) ‘younger sister of the mother (?), *xiao yi mu* 小姨母 (gen.)’ (Gu12-19);
- keli-** 叔北 (283.080) <k.li<sub>2</sub>> (Dao20-16, Zhi19-41) | Mo *kele-* ‘to utter words, speak, say’, Da *hele-*, DaE *xəl-*;  
**keliuji** 叔北 只弱 (283.080.372.152) <k.li2.ü.ji> ‘was said, is named’ Index 49x, with 彘 <u> (131), Index 19x. The suffix **-ji** is written also with <ji<sub>2</sub>> (153) in Index 27x and with <ji<sub>3</sub>> 弱 (337) in Index once;
- ku** 几 (178) <ku> ‘man, person’ (occurs 328 times in the corpus), genitive 几只火 (178.372.273) <ku.u.un> (occurs 151 times in the corpus see also K56, WJ75) | Mo *kümmün* > *küwün* > *kün*, Da *huu*, dial *kuu* ‘person’, DaE *xu*.. The Dahur data show that the Khitan word has been shortened to \**kü*. The glyph 凡 (178.1, former 427) <ku> occurs only four times: Ren16-20, Chao3-27 in isolation, and in the word 凡込並牛 <ku°.ol.ha.ai> (Jue41-30) and 凡込与 <ku°.ol-én<sub>2</sub>> in Yu43-30. The function of the dot here is not clear.
- In some cases one has the impression that 几 (178) <ku> has the function of an emphatic particle:  
**Sui gui ong yadeu gor jieni daudu** 今崇 几崇 杰 斗 为 包 弱 相关 只 分 几 (244.263 334.263 071 335 101 168 152.140.339 204 249 178)  
 <s.ui gu.i ong ia deu gor jieni dau.du ku>  
 [he had the title] Wang of the Sui State, and he was the middle one of the three brothers’ (Xiang2-16/24).  
**em ku** 丙 几 (021.178) <em ku> ‘wife’. Written separately, not in one box. E.g.:  
 又 丙 几 业 关 几 芬 兮 黍 伏 和 化 与 丙 几 又 中 几 芬 兮 黍 伏 <GREAT em ku p.i.g.e pu.ši.ń ci.ur.én em ku š.l g.e pu.iši> ‘[his] first wife was Lady Bige, his second wife was Lady Šelege’ (Xiang12-31/36, 13-1-6). By the way, the two ladies were sisters, <au hiu>, elder and younger sister.



## &lt;H&gt; in Word and syllable initial position

Table 3. Khitan &lt;h&gt; in the transcriptions of Chinese

Romanisation	Glyph	Chinese	LMCh	EMCh	LCh	Source
<hor>	𠂇 (046) <sup>32</sup>	<i>helu</i> 曷魯 <sup>33</sup>	<i>xhāt luṣ</i>	<i>γat lɔ</i>	<i>γot</i>	Xiang5-31, 7-30, K40
<hor>	𠂇 (047)	<i>helu</i> 曷魯				Gu5-26, Zhen42-17, Nan8-41, 37-4, K40
<hong>	𠂇 (075)	<i>huang</i> 皇 <sup>34</sup> 'emperor'	<i>xhuan</i>	<i>γwan</i>	<i>γon</i>	Xing2-10, DiX3-23/27 and 131 x, K95
<heu>	𠂇 (250)	<i>hou</i> 后 <sup>35</sup> 'empress'	<i>xhəw</i>	<i>γəw</i>	<i>γəw</i>	Ren4-5, 8-3, 14-4 and in 3 more places
<hu.un>	𠂇 (151.273)	<i>hun</i> 混 <sup>36</sup> 'mix'	<i>xhun</i> ,	<i>γwən</i>	<i>γun</i>	Xu2-3
<h.ai>	𠂇 (340.122)	<i>kai</i> 開 'open, begin' <sup>37</sup>	<i>khaj</i>	<i>khəj</i>	<i>khaj</i>	Gu2-22, Zhen22-30
<h.ung>	𠂇 (340.106)	<i>kong</i> 空 <sup>38</sup>	<i>khəwŋ</i>	<i>khəwŋ</i>	<i>khung</i>	Zhong5-38 K264, 7.042
<h.ui>	𠂇 (340.263)	<i>hui</i> 徽 <sup>39</sup>	<i>xɣj</i> ,	<i>xuj</i>	<i>xuj</i>	Cha8-26, K264, 7.058
<h.iu>	𠂇 (340.019)	<i>xiu</i> 休 <sup>40</sup>	<i>xiw</i>	<i>xuw</i>	<i>xju</i>	Xiang16-33

As we see the glyphs beginning with <h> are used to render contemporary Chinese /xh/ </ /γ/ and /k<sup>h</sup>/ and in special cases, before /i/ also /x/.

<sup>32</sup> For the glyph 𠂇 (046) CWJ gives no reading. It has to have a pronunciation similar to its dotted variant 𠂇 (047).

<sup>33</sup> In: *Heluben* 曷魯本, a frequent name in *Liaoshi*, written in KSS as 𠂇𠂇𠂇 (047.311.222) <hor.b.ñ>, more precisely the Khitan name is transcribed by Chinese. It occurs also as <hor.u> Chin *Helu* 曷魯 'a personal name in the *Liaoshi*, see 𠂇𠂇 (047.131) Xiang5-31 (WJ149).

<sup>34</sup> In: *huangdi* 皇帝 'Emperor', Khitan m.ch (075.037) <hong.di>.

<sup>35</sup> In: *huang taihou* 皇太后 'empress dowager' (K96, WJ 72) 𠂇𠂇𠂇 <hong tai heu> (328.374.250), and in the title *huanghou* 皇后 'Empress', 𠂇𠂇 <hong heu>.

<sup>36</sup> In the title *shangfu huntong junwang* 尚父混同郡王 transcribed as 𠂇𠂇𠂇𠂇𠂇𠂇𠂇𠂇 (028.199.241.151.273.202.345.334.329.071) <š.ang pu hu.un tu.ung g.ün ong> (Xu2-3).

<sup>37</sup> In: the title *kaifu yitong sansi*, Chin 開府儀同三司 <h.ai pu ngi.i tu.ng s.am.si> 'commander unequalled in honour', see above with <k.ai>. According to K68-69 the title *kaiguobai* 開國伯 is spelled <k.ai g.ui b.ai>, but this title occurs only with <h.ai> in Gu2-22 and Zhen22-30 as <h.ai g.ui b.ai>. See also in the title *qishui xian kaiguo nan* 漆水縣開國男 (K263, 7.037) <s.i š.oi ki.ēn k.ai g.ui na am> (Hong8-17), but in Xian1-17 a part of this title occurs as <[l.a.an l.ing] ki.ēn h.ai g.ui na.am>. The part of titles with the meaning 'founding' occurs with <h> many times, also in the title *Qishuixian kaiguo* which is in Gu2-22 <s.i š.ui ki.ēn h.ai g.ui b.ai>, where it is the equivalent of Chin *kai* 開 and in many other cases, where <h.ai g.ui> has the meaning 'founder of the state' 開國 and similar.

<sup>38</sup> In *shou sikong* 守司空 transcribed as <[i.ri] š.eu si h.ung> in: Zhong5-38.

<sup>39</sup> In *xuanhuishi* 宣徽使 transcribed as 𠂇𠂇𠂇𠂇 (244.082.324.340.263.340.263) <s.y.üen h.ui š.ü> (Cha8-26), also in <s.y.üen h.ui xar i> (Guang13-22) and <s.y.üen h.ui po.ju.ii (Liang9-13).

<sup>40</sup> In the name *Xiu Ge* 休哥 written as 𠂇𠂇 𠂇𠂇 (340.019.334.348) <h.iu g.e> (Xiang16-33), also glossed by CWJ with *xiu* 秀 (It should be 休, it is a printing mistake), but this only refers to the present pronunciation. Its earlier pronunciations were LCh *siw*, EMCh *suw*.





## Chinese loanwords with &lt;h&gt;

**hongdi** 主理 (075.037) <hong.di> ‘Emperor’ (K 95, D3-23/27, Index 11 times) | ← Chin *huangdi* 皇帝, LMCh *xhuan tiaj*, EMCh *ywanj*. The glyph 主 (075) was earlier mixed up with the glyph 主 (328), which is now read by CWJ as <kei>.

**hongdi-in/en** 主理兩/和 (075.037.018/140) genitive (Index 13x, K95).

**hongheu** 主介 (075.250) <hong.heu> ‘Empress’ (K96) (← LChin \**hongheu*), Chin *huanghou* 皇后, LMCh *xhuanj*, EMCh *ywanj*, LMCh *xhəw*, EMCh *yəw*. See <hong tai heu> (Ren4-5, 8, Guang5-5, Jue23-51), <hong heu> (Ren 14-4).

## Khitans words with h-:

**hewür** 介夾 (250.097) <heu.úr> ‘spring’ (Xiang29-23, Index 29x, K46, 119, 211) | Mo *qabur*, Da *haure* ‘spring’, DaE *xaur*. The word is a strongly palatalized pair of Mo *qabur*. The first <u> ending <xeu> has to represent a semivowel /u/.

**hu’u** 互乎 (014.245) <hu.ú> ‘person in charge of, in control of’ (K24, 89, 102, 192, DiX10-10, Xiang1-25, 35-28). Sh3,267 read <qu.ru>, Index <hu.ú> 74x, Wu Index read (014) <hu>.

**hur** 包包 ‘THREE’, 列他 (151.236) <hu.ur> ‘three’ (only as base of <hu.ur.er/en>) | Mo *gurban*, Da *guarebe*, DaE *g<sup>w</sup>arbə*, *g<sup>w</sup>arbən*, *g<sup>w</sup>arəb*, see Róna-Tas 2016: 127, 130–131<sup>41</sup>. The glyphs 包, 包 ‘THREE’ are read by CWJ as <gor>.

**hurer** 列他茶 (151.236.341) <hu.ur.er> ‘third (masculine)’, Index 30x,

**huren** 列他与 (151.236.100) <hu.ur.én<sub>2</sub>> ‘third (feminine)’, Index 1x,

**huren** 列他当 (151.236.361) <hu.ur.en> ‘third (feminine)’, Index 8x.

**heči** 火柴 (340.162) <h.ci> ‘border, place’ (Index 18x, K86) 火柴伙 (340.162.222) <he.ci.ń> (DiX30-2, Index 2x) | Mo *keče* ‘the edge of a fishing net’, Dah *keči* ‘edge, bank, shore’, DaE *kəč* ‘side’, cf. Ju *hečen(i)*, or Mo *keče* ‘steep, slope’, HN *keče* ‘slope’ (perhaps the two Mo words are originally the same, with a semantical split, cf. Ord *getši* ‘la corde sur laquelle est enfilée le filet à prendre des lièvres et qui constitue le bord’).

**hedün** 火化爻 (340.179.144) <he.du.un> ‘horizontal’ | Mo *köndelen*, *köndülen* ‘across, horizontal’, cf. Da *hedele*- ‘cross (river), ferry, ford’, DaE *xundul* ‘horizontal, rafter’ (the *-nd-* cluster everywhere preserved, in SH once *küdelen* (SH 166, noted by Haenisch 1939: 105), but corrected by Ligeti 1971: 118, and in line 5117 by de Rachewiltz to *köndelen*, also *köndelen* in *Altan Tobči* (ed. Ligeti 1974: 123), to \**kedü-* ‘cross’, see Da, cf. *kedür-* ‘to wear a garment over one’s shoulder (i.e. across)’, *kedürge ogosur* ‘saddle strap (put across the saddle, later other ropes)’).

**hedün ger** 火化爻 曲茶 (340.179.144 319.341) <h.dú.ún go.er> ‘horizontal tents’ (K:102, X1-4/6, 6-28/29), WJ 137, in:

**qahan hedün ger daudu ayen** 壘壘夹 火化爻 曲茶 尺分 中和 <qa.ha.an h.dú.ún go.er dau.dü ay.en> ‘of the khan’s middle uncles of the horizontal tents’ (Xiang1-1/5),

**qahan hedün ger zoqu ay** <qa.ha.an h.dú.ún go.er zo.qu ay> ‘of the younger uncles of the horizontal tents of the khan’ (K102)<sup>42</sup>.

<sup>41</sup> Earlier the glyph (259) was read as <hur>, but is now read by CWJ <hut>.

<sup>42</sup> The graph (188) 州 is treated by CWJ as a logograph for SMALL, Kane (102) mentioned it as mnemonic for Chinese *zhou* 州, it occurs in the word *zoqu*, see K58, Chinggeltei related the word to *ba* of *baga*, Aisin Gioro read \**od* and *odji*. The reading of (188) is uncertain. The adjective form with *-qu/qa* is frequent. Index has SMALL.qó 64 times, SMALL.qu 12 times, see also WJ 316. One expect a word for ‘young’ here, rather than ‘small’ perhaps a word which may be connected to Mongol *jalagu* ‘young’. Anyhow, since we are not sure about the pronunciation of 州, it is difficult to give its precise meaning.



**hese** 兂全 (340.244) <h.se> ‘region, area, side’ (K113, DiX47-19, Xiang29-36, 31-7, Index 23x) | cf. Mo *keseq* ‘part, division, department’, Da *heshe* ‘one part’ < \*kes ‘part, piece’. With the locative suffix -de:  
 兂兂全兂 <HEAVEN h.s.de> (Xuan24-25, Zhong48-20)  
 九兂兂兂兂兂兂兂兂兂兂兂兂 <g.ri h.ui.ir.ge<sub>2</sub>.y h.s.de> (Zhen23-12)  
 兂兂兂兂兂兂 <MOUNTAIN.en h.s.de> (Nu3-18,20-17)  
 兂兂兂兂兂兂兂兂兂 <MOUNTAIN.en h.s.de s.a.ai>(Nu20-17).

### <X> in word and syllable initial position

Table 4. Khitan X in Chinese transcriptions

Romanisation	Glyph	Chinese	LMCh	MCh	LCh	Source
<xa>/<xa.ia>	𐰑 (130)/ 𐰑𐰏 (130.135)	<i>xia</i> 下 <sup>43</sup>	<i>xhja</i> :	<i>ɣai/ɣe</i> :	<i>ɣa</i>	Xu13-25, Nan1-25, 23-22, Song10-12, K264, 7.066
<xa.ia>	𐰑𐰏 (130.135)	<i>Xia</i> 夏 <sup>44</sup>	<i>ɣhja</i> :	<i>ɣai/ɣe</i> :	<i>ɣia</i>	Dao24-20, Yu18-66, Zhen26-25, K50
<xua>	𐰑 (143)	<i>hua</i> 華 <sup>45</sup>	<i>xhwa</i> :	<i>ɣwai/</i> <i>ɣwe</i> ;	<i>ɣwa</i>	Gu7-17, K119
<xu>	𐰑 (036)	<i>hu</i> 虎 <sup>46</sup>	<i>xuǒ</i>	<i>xǒ</i>	<i>xu</i>	Xiang16-33

At present we have not enough material to make any definitive statement. It looks like that Khitan <x> is rendering a Chinese fricative.

### Khitan words with initial x-

**xomu** 𐰑行 (057.220) <xo.mú> ‘coffin of an emperor’ (22 times in Index, K87), <GREAT xo.mú> ‘the great catalpa coffin’ (Xiang33-6, K205) | see Róna-Tas (forthcoming)<sup>47</sup>.  
**xomuen** 𐰑行𐰏 (057.220-140) <xo.mu.en> genitive case,  
**xomuier** 𐰑行𐰏 (057.220.341) <xo.mu.er> accusative case,  
**xomude** 𐰑行兂 (057.220.205) <xo.mu.de> locative case.  
**xuur** 𐰑𐰏 (036.177) <xu.ur> ‘the Khitan name of the Liao river’. On the details see Róna-Tas (forthcoming).

<sup>43</sup> In the title *zhongshu menxia pingzhangshi* 中書門下平章事 transcribed as [𐰑𐰏] 子兂兂兂兂兂兂兂兂兂兂 (Xu13-25). The same title occurs in 𐰑𐰏 𐰑𐰏 兂兂兂兂兂兂兂兂兂兂 𐰑𐰏 兂兂兂兂兂 𐰑𐰏 兂兂兂兂兂 𐰑𐰏 兂兂兂兂兂 𐰑𐰏 兂兂兂兂兂 𐰑𐰏 兂兂兂兂兂 𐰑𐰏 兂兂兂兂兂 (Nan1-25, 23-22). and 𐰑𐰏 𐰑𐰏 兂兂兂兂兂兂兂兂兂兂 𐰑𐰏 兂兂兂兂兂 𐰑𐰏 兂兂兂兂兂 𐰑𐰏 兂兂兂兂兂 𐰑𐰏 兂兂兂兂兂 𐰑𐰏 兂兂兂兂兂 (Song10-12). As we see <xa> and <xa.ia> are interchangeable.

<sup>44</sup> In: *Xi Xia* 西夏 ‘the name of the Tangut state’, transcribed as <Xa.ia g.ur> 𐰑𐰏 九兂 (130.335 334.097) (Dao24-20, Yu18-66, also K50) where <g.ur> is ‘state’. In Zhen 26-25 the expression 𐰑𐰏 公行子兂兂 <xa.ia n.mú.l<sub>2</sub>.ha.ai> has to be an adverbial verbal phrase, but its meaning is unknown.

<sup>45</sup> In: *Huayan Nu* 華嚴奴 ‘a name’ (K119) transcribed as 𐰑 兂 𐰏 公 兂 (143 264.270 251.131) <xua ng.ēm n.u > (Gu7-17). CWJ gives as gloss *hua* 华, Nu is a clan name.

<sup>46</sup> In the expression *long hu* 龍虎, which is an abbreviation of *longhu weishang jiangjun* 龍虎衛上將軍 ‘supreme general of the dragon and tiger guards’ (see K99, WJ174), transcribed as <liúng xu> 𐰑 兂 𐰏 (261.181 036) (Xiang16-33), [former in WJ173 read as <liúng hu>].

<sup>47</sup> The stem is *xomu* and *xomur* is the accusative case, so the former comparison with Mong *qayirčag* has to be abandoned.





### Khitan words with q-

**qa, qa'an, qahan, qatun** see note 49.

**qabu** 𐰇𐰏 (053.196) <qa.bu> 'ancestor?' (Shimunek 2017: 267, in Xuan6-31). Index reads <qa-abu> and it occurs 3 times in: Xu31-14, Yu26-53 and Song23-15. The expression in Xuan6-31 is 𐰇𐰏𐰠 (053.196.356) <qa.abu.te>, and occurs also in Nan29-42, Song7-23 Qing4-13 and 7-60. The meanings of *qabu* and *qabute* are uncertain.

**qahas** 𐰇𐰏𐰠 (053.051.174) <qa.ha.as> 'name of the heavenly branch (Index 9x), equated with Chin *yin* 寅, 'tiger' in the expression 'blue tiger year', Chin *jiayin* 甲寅, where *jia* 甲 corresponds to Mo *köke* 'blue'<sup>57</sup>.

The word occurs in the following places:

**siauqu qahas ai** 𐰇𐰏𐰠𐰇𐰏𐰠𐰇𐰏𐰠 <s.iau.qú qa.ha.as ai> 'blue tiger year' (Lang5-2);

**White qahas ai** 𐰇𐰏𐰠𐰇𐰏𐰠𐰇𐰏𐰠 <WHITE qa.ha.as ai> 'white tiger year' (Zhen38-14);

**liauqu qahas ai** 𐰇𐰏𐰠𐰇𐰏𐰠𐰇𐰏𐰠 <l.iau.qú qa.ha.as ai> 'red tiger year' (Nan13-39).

𐰇𐰏𐰠 𐰇𐰏𐰠𐰇𐰏𐰠𐰇𐰏𐰠 𐰇𐰏𐰠 𐰇𐰏𐰠𐰇𐰏𐰠𐰇𐰏𐰠 𐰇𐰏𐰠 <FOUR GOLD qa.ha.as ai TEN TWO MONTH FOUR GOLD qa.ha.as DAY> 'fourth yellow tiger year twelfth month, fourth yellow tiger day' (Nu3-14)

𐰇𐰏𐰠 𐰇𐰏𐰠𐰇𐰏𐰠 𐰇𐰏𐰠 𐰇𐰏𐰠 𐰇𐰏𐰠 𐰇𐰏𐰠 𐰇𐰏𐰠 𐰇𐰏𐰠 <WHITE qa.ha.as p.ul.uh EIGHT MONTH l.iau.qú t.qo.a or.l.bir > 'white tiger intercalary eight month, red chicken first day of the lunar month' (Tai4-8)

𐰇𐰏𐰠 𐰇𐰏𐰠𐰇𐰏𐰠 𐰇𐰏𐰠 𐰇𐰏𐰠 𐰇𐰏𐰠 𐰇𐰏𐰠 𐰇𐰏𐰠 𐰇𐰏𐰠 <har qa.ha.as ná.qó.ju tai pu.un XX.XX> 'the black tiger dog...'. (Pu24-25).

There are two not clear cases in Jue44-24 and Pu9-36.

Before we summarize our results, some remarks on the glyphs with <q-> are in order.

The glyph <qa> 𐰇 (053) occurs in the various forms of the Khitan name for qagan: <qa> (46x), plural: <qa.as> only in genitive case <qa.as.en> 3x, <qa.an> (26x), <qa.ha.an> (1x), locative-directive <qa.ha.de>; once, its genitive case: <qa.ha.on> once, the plurals <qa.ha.ad> 7x, <qa.ha.as> 9x, its accusative <qa.ha.ad.er> 4x.

The glyph <qid> 𐰇 (365) is used in the name Khitan: <qid> 1x, plural <qid.s> 6x, genitive case <qid.i> 24x. The form <qid.ir<sub>2</sub>> is a collective form with the suffix +r<sup>58</sup>, it occurs 6 times, its genitive case <qid.ir<sub>2</sub>.i> occurs 15 times and the accusative case <qid.ir<sub>2</sub>.er> occurs once.

The glyph <qo> 𐰇 (168) occurs only 9 times in the corpus as initial of a word, but in final position it is very frequent. The glyph <qó> 𐰇 (169) occurs only 3 times as independent item: Xing24-17, Yu35-71 and Wu51-8. Out of the three in the last two they are only orthographically independent, in fact part of other words or names.

The glyph <qú> 𐰇 (118) occurs 15 times as initial, but is also very frequent as suffix. The four glyphs: <qo> 𐰇 (168), <qó> 𐰇 (169), <qu> 𐰇 (246) and the above mentioned <qú> 𐰇 (118)

<sup>57</sup> According to Kane (K41, 122) \**qagan* as 'king of the animals'. The word for 'tiger' is Mo *bars* (← OT *bars* ← Persian). In this place the year of tiger may be perhaps misplaced and used for the year of pig? In the *Secret History of the Mongols* we have *gakai jil* 'the year of the pig'. Khitan 'pig' corresponding to the Chin cyclical period *hai* 亥 is in Khitan *üi* 𐰇 <ui> 'pig'. See Mo *gaqai*, pl. *gaqas*, all QG languages have *q-*, also Mgr, Dgx have *q-* and none of them have a final nasal (see Nugteren 2011: 336). Thus a connection of Khitan *qahas* with Mo *gaqai* has to be excluded. Also Mo *qaqas* 'half' has for the time being to be excluded because of the semantics.

<sup>58</sup> The same suffix may be in *nahaner* <na.ha.án.er> 'uncles', but there are serious problems with the reading of <ir<sub>2</sub>> 𐰇, Róna-Tas thinks now that it has to be rather read <un>.



form adjectives. They form ordinals (see Kane 2009: 143), occur with color names to form adjectives, e.g. <l.iau.qú> ‘red’ etc.

Summarizing our results we can state that there exists an asymmetry in the rendering of the velars and uvulars. We find <g-:k-, h-:x- and q->. The opposition <g>:<k> is clear; we have the same case as with the bilabials and dentals. <g> is frequent and renders an unaspirated stop while <k> is less frequent and used for an aspirated stop. Both /h/ and /x/ are most probably uvular fricatives and <h> may have been voiced or unvoiced lenis /ɸ/, while <x> unvoiced fortis fricative /χ/. While /k/ may have been used in originally front vocalic words and /q/ in back vocalic ones, this distinction seems to have been blurred.

Though our results are not very far from those of Takeuchi (2011), we claim that the basic difference in the opposition of the Khitan oral velar stops is the presence and absence of the post-consonantal aspiration. Of secondary importance may have been that the unaspirated unit was produced as a lenis or lax stop, while the aspirated as a fortis stop. In the case of the fricatives this second feature became relevant.

## ABBREVIATIONS

**A** = Aisin Gioro 2012

**Bur** = Buriat

**C** = Chinggeltei 2002

**Chin** = Chinese

**CWJ** = Chinggeltei, Wu Yingzhe and Jiruhe 2017

**Da** = Dahur, according to Martin 1961

**DaE** = Dahur, according to Enkhbat 1984

**Dgx** = Dongxiang, according to H. Nugteren 2011

**EMCh** = Early Middle Chinese according to Pulleyblank 1991

**Index** = The Index of CWJ

**K** = Kane 2009

**Kalm** = Kalmuck

**KSS** = Khitan Small Script

**LCh** = Liao Chinese

**LMCh** = Late Middle Chinese according to Pulleyblank 1991

**Ma** = Manchu

**Mgr** = Monguor according to Smedt—Mostaert (933

**MMo** = Middle Mongolian

**Mo** = Mongolian

**Ord** = Ordos

**QG** = Qinghai-Gansu languages, see H. Nugteren 2011

**Sh17** = Shimunek 2017

**SH** = de Rachewiltz 2004

**Tib** = Tibetan

**WJ** = Wu Yingzhe – Juha Janhunen (2010)

**WF** = Wittfogel – Chêng (1949)



WOT = Róna-Tas and Berta (2011)

WJ = Wu – Janhunen (2010)

For the abbreviations of the sigla of the inscriptions written in KSS see APATÓCZKY and RÓNA-TAS 2019: 266–268.

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