On the terms for "goat" recorded in Khitan and Jurchen scripts

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For "goat", there are two forms recorded in Khitan microscript and one in Khitan macroscript, together with some probable derivation in Jurchen recordings. The different Khitan recordings reflect the analogous Turkic etymology and become the Jurchen derivative by means of the nominal derivational suffix *-la/e*. Furthermore, the comparative study of Khitan macroscript and the earliest Jurchen logogram both for "goat" could indicate their probably graphic etymology.

Keywords: Khitan macroscript, Khitan microscript, Jurchen script, goat, nominal suffix *-la/e*, graphic etymology

1. Introduction

EDAL (2003: 1003-4) gives PA. **ńàme* "goat, deer", with the derivations of PTung. **ńamī-*, PTurk. **jimga-*, and PKor. **jə́m-sjó*. Shortly, Blažek (2005: 246) adds the Khitan word **ema* "sheep" to this etymological item according to Chinggeltei (2002a: 107) and Vovin (2004: 121). As the deeper decipherment of Khitan and Jurchen scripts[1], there

1) Khitan scripts include the logographic **macroscript**(大字, also called "large(r) script") and the phonetic **microscript**(小字, also called "small script" or "lesser script"), of which the latter is composed of several graphic components – called **protoscript**(原字, also called "original character"). As the composition of protoscripts has some special types in a single

are more precious data involved to support the reconstruction of this PA. root.

2. Terms for “Goat” in Khitan Language

In the extant Khitan indigenous recordings, there is more than one graphic expression for “goat” as below:

KHITAN SCRIPTS	CHARACTERS	LOCATIONS	STATISTICS
MACROSCRIPT	𘟙	EYCy 10	1
MICROSCRIPT	𘟙力	LEEXz 1	5
	𘟙𘠽	LEEXy 4; ILY 25; EHGs 19; EJX 16	
	𘟙𘠊	EHDl 22; EPLS 5, 15	3

First of all, it must be noted that the only appearance of 𘟙力 recorded in Khitan microscript comes, as a matter of fact, from a copyist’s error in the copy of LEEXz. In fact, its corrected form should go to 𘟙𘠽.

Then, let’s go to the most frequented form 𘟙𘠽, of which the earlier phonetic reconstructions are diverse: **em-a* >**ema* (Chinggeltei et al. 1978: 165), **ima* (Liu 1983: 255), **iam-a* (Nishida 1984: 89) as equivalent to Mo. *imayan*; later Aisin Gioro (2004a: 15) reconstructed **æma* and **æmja*, equivalent to Dag. *jamaː* (< *imaya*).

The other variant 𘟙𘠊 also recorded in Khitan microscript has been interpreted as the protoscript 𘠊 (Kane 2009, No. 335) to be pronounced same to the protoscript 𘠽 [ɑ] (Wan et al. 2008: 130). In fact, 𘠊 has been reconstructed as **ya*, separated from 𘠽**a* (Kane 2009, No. 189).

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microscript character, all the cited microscripts in this paper should be treated as a linear type for the convenient printing. And there are the whole capital letters for logograms and the whole italic letters for phonograms together with the Khitan- Jurchen scripts’ co-appearance in my own reconstructions, except for the direct citations from references.

The first protoscript 丞 (Kane 2009, No. 270) was reconstructed as **em* based upon the Chinese loanwords in Khitan such as 八丞**k-em* : 檢*jian*, 八文丞**k-ie-em* : 兼*jian*, 八斗丞**k-ia-em* : 監*jian* (Chinggeltei 2002b: 80); but this phonetic reconstruction seems far from the subsequent reconstruction **a* or **ya* in a single indigenous word, against the vowel harmony. According to some another Altaic words in Khitan spelling with this protoscript 丞, i.e. 丞尒**em-či* “to drink”, 屮丞方 **l-em-a* “official academist” (Chinggeltei 2002b: 80), this protoscript should hold a more indeginous phonetic reconstruction **im* than **em*.

Therefore, the extant Kmi. recordings offer us two different spellings for “goat” (Aisin Gioro 2004a: 69): 丞方**im-a*; 丞斗**im-ya*. This bifurcation of Khitan lexical forms is analogous to that in Turkic languages: Osm. *ima/imä* “chèvre sauvage” ~ Uy. *yïmγa* “das Weibchen des Steinbockes” ~ *ïmγa* “chèvre sauvage”, of which the prototype should be *yïmγa* (Bazin 1957). This attested Turkic form – *ïmγa* – can be lent into Khi. 丞斗**im-ya* through an unattested Proto-Mongolic intermediary, whereas the other Turkic one in Anatolia cannot. The similar form of Khi. 丞方**im-a* should develop itself from the Mongolic evolution. Accordingly, the former form in Khitan microscript is more archaic than the latter genetically.

As for the Kma. 𘟙, Liu et al. (2004: 83) reconstructed **ema* (Kane 2009, No. 87) according to the relevant Kmi. decipherment, but Kane (2009: 180) mistreated its equivalent Kmi. spelling as 方方 (Kane 2009, No. 5.087). It is obvious that their reconstruction should be based upon a unique phonetic form. However, there come two different phonetic forms for “goat” recorded in Khitan microscript, and the analogous reconstruction for the Kma. 𘟙 must be renewed.

As the extant first national Siniform in the Inner Asian nomadic languages, Khitan macroscript should be connected directly both with the Vulgar Chinese characters, original, and with the Jurchen script, derivative. The detailed reconstruction will be finished together with the following Jurchen logogram.

3. Terms for “Goat” in Jurchen Language

In the recorded Jurchen language, there are three items to be found as below:

JURCHEN SCRIPTS	CHINESE TRANSCRIPTIONS	LOCATIONS
𘟙	—	GJS 1:9, 6:3
南元夭	一馬剌*yi-ma-la*	YLYY No. 173
—	亦木阿*yi-mu-a*	HTGYY No. 331

Among these Jurchen items for “goat”, the syllabic spelling 南元夭 has a precious reconstruction: **i-ma-la* (Kiyose 1977: 106). Grube (1896: 103) compare it (“Ziege”) with Ma. *imahū* “Steinbock” (Hauer 1952-1955: 497) improperly. It seems that Khi. 丞为**im-a* was lent to Jur. 南元夭**i-ma-la* through the nominal derivational suffix *-la/e*, since there will be more proofs between Mongolic and Tungusic languages as below:

Example I: Khi. 兮*U “river” > Jur. 孛*ULA “large river”

EDAL (2003: 1494) dealt with this Jurchen-Manchu item – *ula* – etymologically from the PTung. **ula-* “to soak, wet; river”; and all the related proofs have only one form – *ula* – referring to “river”, far from more evidences.

Aisin Gioro (2004a: 9) connected Kmi. 兮 with the Chinese transcription: 烏*wu* (SQF), which had been mentioned by Ramstedt (1952) as original to Mo. *usun* “water”. Thereupon Jur. **ula* “large river” should be derived from Khi. **u* through the suffix *-la* together with the masculine vowel, hidden from both logographic recordings. There are two decisive factors to determine such a masculine “a” harmonious to the preceding “u”: 1) **u* and **ö* > *u* in Tungusic (Poppe 1960); 2) contrastive to Mo. *üsün* “hair”, Mo. *usun* “water” includes a masculine “u”.

Besides, Orch.-Ud. *uli* “water”, cognate with Jur.-Ma. *ula* “large river”, might reflect some vocal alternation between “a” and “i”

throughout the Tungusic languages, just as Jur. **amin* and Ma. *ama* "father", etc.

Example II: Khi. 伏力**ńa-qa* "dog" ~ Ma. *niohe* "wolf" > Jur. **ńuhile* "wolf"

In Chinese transcription of Khitan vocabulary there is 捏褐*niehe* for "dog", which is equivalent to Kmi. 伏力**ńa-qa*[2] and, no wonder, cognate with Ma. *niohe* "wolf". Some other derivatives in Tungusic languages include: Evk. *ńēkē* "sable", Evn. *ŋö/ōke* "male of Canidae" (EDAL 2003: 1030), Ma. *nuhere/nuheri* "junger Hund von 7-8 Monaten" (Hauer 1952-1955: 722), etc. The last Manchu item is, in fact, indicative of the agglutination of some diminutive suffix *-re/i* to a nominal stem, such as Ma. *bukdan* "Krümmung, Falt, Kniff" > *bukdari* "beschriebener Faltbogen, Bericht" (Hauer 1952-1955: 120)[3], Ma. *hengke* "Gesamtbezeichnung für kürbisartige Früchte" > *hengkeri* "kürbisartig"[4] (Hauer 1952-1955: 430), Ma. *pinggu* > *pingguri* "Apfel" (Hauer 1952-1955: 748), etc.

The Chinese transcription 女奚烈*nüxilie* or 女奚列*nüxilie* (HJD) of Jurchen "wolf" is cognate with Na. "wolf" and Ma. *Niohuru hala* with Chinese transcription 鈕祜祿*niuhulu* (Jin 1989: 74), also derived from it probably through the suffix *-le*. Sun (2004: 240) cited Na. *niuheli* erroneously and reconstructed Jur. **niohilie* incorrectly. It can be reasoned, accordingly, that this Jurchen suffix transcribed by the Chinese character 烈 or 列, as short of the diminutive meaning, could

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2) Cf. Jur. 仵 **ŃALMA "human" equivalent to the Chinese transcription 捏兒麻 *nie'erma* (YLYY, No. 273, 281, 299, 315, 331, 332, 333, 336, 337) and referring to Ma. *niyalma*, suggests that the Chinese character 捏*nie* was used to transcribe an Altaic syllable including some masculine vowel in 10^{th}–13^{th} centuries. On the other hand, someone suggested that the vowels in this Kmi. recording could be identified with its succeeding accusative ending; however, the Kmi. recording of an accusative-instrumental ending can be deciphered only as 奴 **ur* (Aisin Gioro 2004a: 135-7), difficult to acknowledge its affixation to a stem of whether masculine or feminine vowel.

3) Ji et al. (1986: 111) regarded it as derived directly from the verbal stem: *bukdambi* "krümmen, falten, kniffen" roughly.

4) Ji et al. (1986: 107) noted it with the Chinese character 瓞*die* referring to "young melons just forming".

be reconstructed as **-le/i* rather than **-re/i*.

On the other hand, the Jurchen recording 奋尚臾**ńen-gu-hei*[5] (YLYY, Supplement No. 19), with the Chinese transcription 嫩果黑*nenguohei*, seems another Tungusic derivative far from Khitan etymology.

Example III: Khi. 苻九伏**be-g-in* "a proper name" ~ Jur. 禺刘 *BEGIN-in "Jurchen chieftain" > 禺佗*BEGIN-le "Jurchen minister"

Aisin Gioro (2004a: 272; 2004b: 90-1) picked up this Khitan proper name from EYRx 2 and referred to its Turkic etymology of *bäg* "nobleman". And in the meanwhile, she thought Turk. *bäg* "nobleman" and *bäglär* "noblemen" as the intimate origins of Jur. 禺刘*BEGIN-in (normalized: **begin*) "Jurchen chieftain" and 禺佗*BEGIN-le (normalized: **begile*) "Jurchen minister" maybe questionably; for the historical conditions barred the Jurchen language of direct loans from the Turkic languages. In fact, this lexical item – *bäg* (Chinese transcription: 匍*pu*) – might well be an earlier Turkic loanword ultimately from Chi. 伯*bo* "Chinese peerage of the second grade", with its inner derivation in Orkhon inscriptions: *bo/uyla* (Kotwicz 1950: 356-7)[6], and lent into the neighboring Khitan language with the Kmi. recording: 苻九伏**be-g-in*. Kotwicz (1950: 362) suggested that Turk. *bäg* > Mo. *begi* > Jur.-Tung. *bögin*, in which the *n*-suffixation should be moved up to Khitan, the so-called Para-Mongolic language.

It is more possible that this Khitan proper name should be cognate with the Jurchen administrative term 禺刘*BEGIN-in "Jurchen chieftain", equivalent to Chinese transcription 孛堇*bojin*, simultaneously through the nominal suffix *-le* deriving another Jurchen administrative term 禺佗*BEGIN-le "Jurchen minister", equivalent to Chinese transcription 勃極烈*bojilie*. Both these Chinese transcriptions of Jurchen administrative terms were recorded earliest in the Jurchen-Jin Muzong (金穆宗) period (1053-1103 AD), near to the inscribed year of EYRx – about 1072 AD (咸雍八年 *Xianyong banian*). Thus, it seems indicative of the

5) Kiyose (1977: 148) reconstructed it as **niyongehe* analogous to the Manchu spelling.

6) Kotwicz (1950: 357) cited it as *Bujla*; hereupon some more precise Romanization of this Turkic word is made according to the later decipherment of Orkhon Turkic.

fact that Jur. **begin* & **begile* could be borrowed both from Khitan, with the derivation of adding *-le* having occurred in Khitan language. And the co-appearance of both Jurchen loanwords lies in some semantic differentiation until the Jurchen-Jin Aizong (金哀宗) period (1198-1234 AD). Later, Ma. *beise* (< **bei* + *-se*) "Manchu peerage of the third grade" & *beile* "Manchu peerage of the fourth grade" are historical descendents from Jurchen (Kotwicz 1950: 359).

Example IV: Khi. 丙*OMO ~ WMo. *eme* "wife, woman" > Ma. *emile* "feminine"

Kane (2009: 108) reconstructed it as **mó* (No. 3.133) questionably in that the equivalent Chinese transcription 耨斡麼*nou-wo-me* was truncated mechanically. As the Khitan word "earth" transcribed by Chinese character 耨 is obviously equivalent to Jur.-Ma. *na* "earth", the suceceeding Chinese transcription 斡麼 should become equivalent to **omo* "mother" in Khitan (Sun et al. 2008: 88). Actually, it cannot be easily disapproved that Khi. **omo* could be cognate with WMo. *eme* "wife, woman". In the extant Jurchen vocabulary there is no such derivative, and the Manchu successor – *emile* – seems derived from it through the same suffix *-le* including a feminine vowel.

The relevant Manchu form including the masculine vowel – *amila* – represents the semantic item "masculine", probably derived from the above feminine form, just analogous to Ma. *hūwašan* "bonze, Buddhist monk", borrowed from Chi. 和尚*heshang*, derived into Ma. *huwešen* "Buddhist nun", the feminine equivalent. The other probable derivation could be due to Jur. 乃*AMIN "father" > Ma. *amila* "masculine". Whatever its etymology is, the nominal derivational suffix *-la/e* can hold its very grammatical function as is indicated hereupon.

Example V: PMo. *ilama* > Jur. 圭元天**im-ma-la* "mulberry"

As for the Jurchen item, Grube (1896: 104) gave the earliest transcription: *yīn-mà-láh* (YLYY, No. 108), cognate with Ma. *nimala*. EDAL (2003: 239) is based on this old-time reference to reconstruct the relevant PTung. **ńamńi-kta* (EDAL 2003: 1004) questionably, to let alone this transcribed Jurchen proof changed as *hin-ma-lar* (EDAL 2003: 1004).

Later it is Ligeti (1961: 10) who first gave this precise Jurchen reconstruction **immala*, corresponding to the Altaic spelling, which Kiyose (1977: 103) renewed with **inmala* (YLYY, No. 108) incorrectly. And it is noticed that this three Jurchen characters hold a syllabic spelling, indicative of the originally intervocalic *-l-* assimilated to the successive *-m-*.

On the other hand, the later Manchu recordings – *imalan* "Färbermaulbeerbaum" ~ *nimala(n)* "Maulbeerbaum" (Hauer 1952-1955: 497, 700) – could come from a loan of the Mongol cognate – *ilama* – through a phonetic metathesis between the penult and the ultimate syllables[7] and an initial *n*-augmentation[8], rather than from a direct inheritance of the earlier Jurchen recording; for it is evident enough that the recorded Jurchen language and the later written Manchu language might well have no direct genealogical relationship (Kiyose 2000).

Therefore, this Jurchen item **immala* should be derived from an unexcavated Proto-Mongolic form, represented by the extant Mongol spelling – *ilama*, agglutinated with the nominal suffix *-la*.

Based upon the above examples, it is reasonable that Khi. 丞肖**im-a* > Jur. 南元夭**i-ma-la* through the nominal derivational suffix *-la* conforms to a greater lexical derivational law from Mongolic to Tungusic languages.

The only Chinese transcription 亦木阿, only recorded in the cyclical terminology of twelve zodiac animals, was transliterated as **i-mu-a* (Kane 1989: 200). And its ultimate reconstruction became **imu'a*, which misled Vovin (2004: 120-1) to compare it with Ma. *imaha*, an actually erroneous word. Compatible to Khi. 丞ㅓ**im-ya*, in fact, its better reconstruction might well be **imya*, in that the Chinese

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7) The similar examples are also: Jur. 屯戎夭 **gui-pha-la* ~ Ma. *guilehe* "apricot", which Kiyose (1977: 103) and Kane (1989: 204) both regarded as some syllabic inversion; Mo. *emegel* ~ Jur. 向学伏 **en-MERGE-mei* (Ulhicun's normalized transcription: **əməргən*) > **engemer* ~ Ma. *enggemu* ~ "saddle" (Ulhicun 1998: 240); etc.

8) The similar examples are also: PTurk. **yïmaya(n)* > PMo. *nïmayan* > SMo. *nima'an* (Bazin 1957) > Ma. *niman* "goat" – while EDAL (2003: 1004) seems to reflect an inverted phonetic evolution questionably; etc.

transcription 木*mu* after a vowel should be transliterated as *-*m* and the Chinese transcription 阿*a* often as **ɣa*.

As for the logographic 𘖵, its semantic content could be regarded as “goat”, in contrast with the other logographic 𘖶*XONI “sheep” in the same classified line of GJS (Ulhicun 1998: 234). Furthermore, its phonetic expression might well be connected first with the similar Jurchen character 𘖷**on* (GJS 10a:9, 10b:11, Ulhicun 2001: 205) < 𘖷 *ONON (GJS 7:9, Ulhicun 2001: 202), with the semantic interpretation of “Mongolian gazelle” cognate with Ma. *onon*. Then, its similar phonetic spelling could be **im*, separated from Khi. **imya* or Jur. **imya*. Accordingly, the Jurchen logogram 𘖵 should be reconstructed as *IMΓA, to which the similar Kma. 𘖸 should reconstructed as *IMYA. And to the ultimate origin, the common graphic etymology could be due to the Chinese character 奄**iam* (< 於撿反, according to Kane 2009: 231). Then, there comes a graphically etymological route as below:

Chi.: 奄**iam* > Kma. 𘖸*IMYA > Jur. 𘖵*IMΓA ~ 𘖷*ONON

4. Conclusions

And together with EDAL (2003: 1003-4), the Khitan and Jurchen recordings of “goat” reflect the following lexical derivation, different from the lexical series with the initial *ń*-:

Turk. *ïmɣa* > PMo. > Jur. **imɣa*
∨
Khi. **imya* > Khi. **ima* > Jur. **imala*

The progressive decipherment of Khitan recordings, of two types, and the analytical reconstruction of Jurchen recordings will broaden the middle Altaic lexical research as such.

Abbreviations

Chi.	Chinese	Osm.	Osmanli Turkish
Dag.	Dagur	PA.	Proto-Altaic
Evk.	Evenki	PKor.	Proto-Korean
Evn.	Even	PMo.	Proto-Mongolic
Jur.	Jurchen	PTung.	Proto-Tungusic
Khi.	Khitan	PTurk.	Proto-Turkic
Kma.	Khitan macroscript	SMo.	Mongol in *Secret History*
Kmi.	Khitan microscript	Tung.	Tungusic
Ma.	Manchu	Turk.	Turkic
Mo.	Mongol	Ud.	Udihe
Na.	Nanai	Uy.	Uyghur
Orch.	Oroch	WMo.	Written Mongol

References

Primary Sources:

EHDl	*Epitaph of Han Dilie* (耶律 (韓) 敵烈墓誌)
EHGs	*Epitaph of Han Gaoshi* (耶律 (韓) 高十墓誌)
EJX	*Epitaph of Jushi Xiao* (蕭居士墓誌銘)
EPLS	*Epitaph of Prince of Liang State* (梁國王墓誌銘)
EYCy	*Epitaph of Yelü Changyun* (耶律昌允墓誌銘)
EYRx	*Epitaph of Yelü Renxian* (耶律仁先墓誌)
GJS	*Glossary of Jurchen Script, fragments, excavated in Xi'an Monumental Forest* (西安碑林女真文字書殘頁)
HJD	*History of Jin Dynasty* (金史)
HTGYY	*Huitongguan Yi Yu* (*Hua Yi Yi Yu* without Script)
ILY	*Inscription of the Late Yelü* (故耶律氏銘石)
LEEXy	*Lamentation Epitaph of Empress Xuanyi* (宣懿皇后哀册)
LEEXz	*Lamentation Epitaph of Emperor Xingzong, copying* (興宗哀册)
SQF	*Song Shou's Shang Qidan fengsu, cited in Xu Zizhitongjian*

changbian, Vol. XCVII (續資治通鑒長編 卷九七引宋綬 上契丹風俗)

YLYY *Yongle Yi Yu* (*Hua Yi Yi Yu* with Script)

Secondary Sources:

Aisin Gioro, Ulhicun. 2004a. *Qidan yuyan wenzi yanjiu* (*Studies of Khitan language and scripts*). Kyoto: Tō Ajia Rekishi Bunka Kenkyūkai.

Aisin Gioro, Ulhicun. 2004b. *Liao Jin shi yu Qidan, Nüzhen wen* (*Liao-Jin history and the Khitan-Jurchen scripts*). Kyoto: Tō Ajia Rekishi Bunka Kenkyūkai.

Bazin, Louis. 1957. Noms de la « chèvre » en turc et en mongol. *Studia Altaica – Ural-Altaische Bibliothek – zum 60, am 8, august ; aussi en Les turcs des noms, des hommes.* Budapest : Akadémiai Kiadó · Paris : αρ éditions ARGUMENTS. 1994. 265-270.

Blažek, Václav. 2005. Current progress in Altaic etymology. *Folia Orientalia* 52: 1. 237-254. Kraków: Polska Akademia Nauk. Komisja Orientalistyczna.

Chinggeltei. 2002a. On the problems of reading Kitan characters. *Acta Orientalia Academiae Scientiarum Hungaricae* LV. 99-114. Budapest: Akademiai Kiado.

Chinggeltei. 2002b. *Qidan xioazi shidu wenti* (*On the decipherment of Khitan Microscript*). Tokyo: Ajia Afurika Gengo Bunka Kenkyūjō.

Chinggeltei, Chen Naixiong, Xing Fuli, Liu Fengzhu & Yu Baolin. 1978. Qidan xiaozi jiedu xin tan (A new approach to the decipherment of Khitan Microscript). *Kaogu xuebao* III. 353-387. Beijing: Institute of Archaeology, Chinese Academy of Social Sciences.

EDAL 2003 – Starostin, Sergei, Anna Dybo, & Oleg Mudrak. 2003. *Etymological dictionary of the Altaic languages:* Part One to Three. Leiden · Boston: Brill.

Grube, Wilhelm. 1896. *Die Sprache und Schrift der Jučen*. Leipzig: Kommissions-Verlag von O. Harrassowitz.

Hauer, Erich. 1952-1955. *Handwörterbuch der Mandschusprache*. Wiesbaden: Kommissionsverlag Otto Harrassowitz.

Ji, Yonghai, Liu Jingxian & Qu Liusheng. 1986. *Manyu yufa* (*Manchu grammar*). Beijing: Minzu chubanshe.

Jin, Qicong. 1989. Jing Qi de Manzu (xu): liu, Manzu de hala he guanxing (Manchu people in Peking Banners (to be continued): VI, Manchu Halas and Surnames). *Manzu yanjiu* II. 66-80, 16. Shenyang: Institute of Nationalities, Liaoning Provincial Academy of Social Sciences.

Kane, Daniel. 1989. *The Sino-Jurchen vocabulary of the Bureau of Interpreters*.

Bloomington, Indiana: Indiana University.

Kane, Daniel. 2009. *The Kitan language and script*. Leiden · Boston: Brill.

Kiyose, Gisaburo N. 1977. *A Study of the Jurchen language and script: Reconstruction and decipherment*. Kyoto: Hōritsubunka-sha.

Kiyose, Gisaburo N. 2000. Genealogical relationship of Jurchen dialects and literary Manchu. *Central Asiatic Journal* 44/2. 177-189. Wiesbaden: Harrassowitz Verlag.

Kotwicz, Władyslaw. 1950. Contributions aux études altaïques. *Rocznik Orientalistyczny* XVI. 315-368. Warsaw: Oriental Institute, Warsaw University.

Ligeti, Louis. 1961. Les inscriptions djurtchen de Tyr. La formule *Oṃ maṇi padme hūṃ*. *Acta orientalia Academiae Scientiarum Hungaricae* XII. 5-26. Budapest: Akademiai Kiado.

Liu, Fengzhu. 1983. Qidan xiaozi jiedu zai tan (A second approach to the decipherment of Khitan Microscript). *Kaogu xuebao* II. 255-270. Beijing: Institute of Archaeology, Chinese Academy of Social Sciences.

Liu, Fengzhu & Wang Yunlong. 2004. Qidan dazi 'Yelü Changyun muzhiming' zhi yanjiu (A decipherment of "Yelü Changyun's Tomb Inscription" in Khitan Macroscript). *Yenching Journal of Chinese Studies* (New Series) XVII. 61-99. Beijing: Institute of Yenching.

Nishida, Tatsuo. 1984. Qidan wenzi jiedu de xin jinzhan (Some new progress of the decipherment of Khitan script). Liu Fengzhu, Wang Yunxiang, Wang Bing (tr.), Chinggeltei (rev.). *Minzu yuwen yanjiu qingbao ziliaoji* IV. 75-94. Beijing: Linguistics Bureau, Institute of Nationalities, CASS.

Poppe, Nikolaus. 1960. *Vergleichende Grammatik der Altaischen Sprachen*: Teil I, vergleichende Lautlehre. Wiesbaden: Otto Harrassowitz.

Ramstedt, Gustav Johannes. 1952. *Einführung in die Altaische Sprachwissenschaft: Formenlehre*. Helsinki: Suomalais-Ugrilainen Seura.

Sun, Bojun. 2004. *Jindai Nüzhenyu* (*Jurchen language in Jin Dynasty*). Shenyang: Liaoning minzu chubanshe.

Sun, Bojun & Nie Hongyin. 2008. *Qidanyu yanjiu* (*A study of Khitan language*). Beijing: Zhongguo shehui kexue chubanshe.

Ulhicun. 1998. Xi'an beilin Nüzhenwen zishu xin kao (A new decipherment of glossary of Jurchen script excavated in Xi'an Monumental Forest). Xi'an beilin bowuguan (ed.). *Beilin jikan* V. 230-241. Xi'an: Shaanxi renmin meishu chubanshe.

Ulhicun. 2001. 'Nüzhenwen zishu' de fuyuan (The recovery of glossary of Jurchen script). Xi'an beilin bowuguan (ed.). *Beilin jikan* VII. 186-206. Xi'an: Shaanxi renmin meishu chubanshe.

Vovin, Alexander. 2004. Some thoughts on the origins of the Old Turkic 12-Year Animal Cycle. *Central Asiatic Journal* I. 118-132. Wiesbaden: Harrassowitz Verlag.

Wan, Xiongfei, Han Shiming & Liu Fengzhu. 2008. Qidan xiaozi 'Liang guowang muzhiming' kaoshi (A decipherment of "Tomb Inscription of Prince of Liang State" in Khitan Microscript). *Yenching Journal of Chinese Studies* (New Series) XXV. 123-159. Beijing: Institute of Yenching.

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