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Revisiting *jīng* 椋 on the ancient Korean Peninsula

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Abstract

This article presents relevant data on the usage of the sinograph *jīng* 椋 and revisits its origin and lexical form on the basis of textual examination, using primary sources from China, Korea and Japan. The authors conclude that *jīng* 椋, and its variants *jīng* 㮍, *jīng* 㯟 and the miscopied form *lüè* 掠, originated from its radical character *jīng* 京, meaning "warehouse, granary", and that *jīng* 椋 was widely used in Koguryŏ, Paekche, Silla and Japan. Historical documents during the Koryŏ period also attest to the use of *jīng* 椋. The authors have reconstructed the lexical form of *jīng* 椋 as the disyllabic pre-Old Korean **kuᴸ.raᴴ in Paekche and **koᴸ.raᴴ in Silla, and the monosyllabic Old Korean *kolᴿ as a Sillaic substratum that underwent the syllabic contraction and liquid change **-r- > *-l, that is **koᴸ.raᴴ > *kolᴿ. The Western Old Japanese kun'yomi of *jīng* 椋, *kura*, is a loan from pre-Old Korean **kuᴸ/koᴸ.raᴴ that took place before the eighth century.

Keywords: *jīng* 椋; *jīng* 京; Korean sinograph; *mokkan* in Korea and Japan; *kura* "warehouse, granary"; Han (韓)-type languages in Paekche and Silla

Previous studies and relevant data on *jīng* 椋

Historians and linguists from Korea, Japan, and China have discussed at length the origin and early-period usage of the sinograph *jīng* 椋[1] on the Korean Peninsula and in Japan, especially after many pieces of *mokkan* (木簡, "wooden slips/tablets/documents") were unearthed in Korea and Japan.

Initially, Inaba (1936), utilizing various primary sources from China, Korea, and Japan, argued that the vernacular Japanese reading (kun'yomi 訓読み, "semantic reading") of *jīng* 椋 was *kura* (クラ [ku.ra]) in ancient Japan as a *kokuji* (國字 コクジ, "Japanese national kanji") meaning "warehouse, granary". Inaba further pointed out that the occurrence of *jīng* 椋 in *jīngbù* 椋部, the name of the Paekche bureau recorded in Chinese and Korean chronicles and historical documents, was related to the word *fújīng* 桴京 from Koguryŏ, as recorded in the "Account of Eastern Barbarians" (Dongyi zhuan 東夷傳), in the "History of the Wei" (Wèishu 魏書) of the *Records of the Three Kingdoms* (*Sanguozhi* 三國志, *c.* 280–90 CE, Chen 1962). Table 1 summarizes the various sources from China, Korea and Japan discussed below.

Specifically, the word *fújīng* 桴京 occurs in the sentence 無大倉庫, 家家自有小倉, 名之為桴京 ("People [in Koguryŏ] do not have a large warehouse. Every family has a small granary, it is called *fújīng*"). In Chinese lexicology, the character *fú* 桴 means "ridge pole,

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[1] In this article, Chinese, Korean and Japanese data are transcribed separately in pinyin, McCune-Reischauer Romanization, and Hepburn Romanization. However, for convenience, we always use pinyin to transcribe all words related to the sinograph *jīng* 椋.

Table 1. Primary sources for *jīng* 椋 from China, Korea, and Japan

Transcription	Sources	Time period	State	Text type
桴京	*Sanguozhi*	c. 280–90 CE	Koguryŏ	Chinese chronicles
外掠部	*Zhoushu*	636 CE	Paekche	
外庌部	*Beishi*	659 CE	Paekche	
外椋部	*Hanyuan*	c. 660 CE	Paekche	
京屋	Anak Tomb No. 3	357 CE	Koguryŏ?	Mural painting
椋	Tŏkhŭng-ri Tomb	408 CE	Koguryŏ?	Epitaph
椋食, 下椋, 仲椋	Hwangnam-dong site No. 376	8th century CE	Unified Silla	Korean *mokkan*
仲椋	Nŭngsan-ri Monastery site	Late 6th century CE	Paekche	
外椋	Ssangbuk-ri site No. 280-5	7th century CE	Paekche	
白日椋	*Inoue yakusidō iseki* site	7th century CE	Japan	Japanese *mokkan*
椋直	*Nishigawaramori no uchi iseki* site	7th century CE	Japan	
椋垣	*Shinsenshōjiroku*	815 CE	Japan	Japanese document
椋司	Anabji	c. 8th~9th century CE	Unified Silla	Inkstone inscription
椋	Mujin old fortress site	c. 9th~10th century CE	Unified Silla	Flat tile inscription
外庌部	*Samguk sagi*	1145 CE	Paekche	Korean chronicle
庌谷縣			Koguryŏ	
椋嵒城				
椋	*Susŏnsa Hyŏngji'an*	1230 CE	Koryŏ	Korean ancient document
椋公	*Tae'ansa Hyŏngji'an*			
椋柱, 京主	*Mahāprajñāpāramitā Sūtra* in the Korean Tripitaka	1237 CE		Buddhist text
椋公卜重	*Chosatang Tongnyang ki*	1377 CE		Korean ancient document

raft", a meaning that could potentially allude to the wooden structure of a granary. Consequently, *fújīng* 桴京 may either be a semantographic Chinese literal translation which has a vernacular reading in the language or languages of Koguryŏ, or a phonetic rendering of an underlying disyllabic word or phrase as a Chinese loanword.

However, the Paekche bureau attested as *jīngbù* 椋部 in the *Records of the Three Kingdoms* was written with several variations in later sources. These include: as *wàilüebù* 外掠部 in the *History of the Zhou* (*Zhoushu* 周書, Linghu 636 CE [1971]), where this *lüe* 掠 ("to rob") could be an incorrect form of *jīng* 椋 since the radicals *mù* 木 ("tree, wood") and *shǒu* 扌 ("hand") were frequently mixed in Chinese calligraphy,

especially in the cursive script; as *wàijīngbù* 外椋部 in a Chinese reference book called *Literature Garden* (*Hanyuan* 翰苑, *c.* 660 CE); and as *wàijīngbù* 外庼部 in the *History of the Northern Dynasties* (*Beishi* 北史, Li 659 CE [1974]). This rendering of *wàijīngbù* 外庼部 was also adopted in the later Korean source, the *History of the Three Kingdoms* (*Samguk sagi* 三國史記, Kim 1145 CE [1928]). Certainly, this *jīng* 庼 could be another variant (*yitizi* 異體字) of *jīng* 椋 widely used on the Korean peninsula.

Moreover, another Koguryŏ toponym from the "Geography Treatise" (*Chiri-ji* 地理志) of the *Samguk sagi* used *jīng* 庼 in the phrase 庼谷縣,一云首乙吞 ("*Jīnggǔ* county was called *shǒuyǐtūn* [during the Koguryŏ period as its previous name]"). This *jīng* 庼 is attested in the rime book called *Collected Rimes* (*Jiyun* 集韻, 1037 CE), 《廣雅》：'倉也.' 音 '居卿切,' 與'京'同音 ("The *Expanded Erya*[2] [*Guangya* 廣雅, 227–232 CE] recorded the meaning granary as *cāng* 倉. Its *fanqie* 反切 spelling[3] is *jūqīng qiè* 居卿切, the same as the phonetic reading of *jīng* 京"). Thus, we can infer that *jīng* 庼 was still used during the Koryŏ period (918–1392 CE) when the *Samguk sagi* was completed, with the meaning of "granary". Additionally, another Koguryŏ toponym recorded as *Kyŏng'am-sŏng* (椋嵒城, *Kyŏng'am* fortress) in the "*Chiri-ji*" used *jīng* 椋.

Later, after more and more excavations and decipherment of *mokkan* in Korea and Japan during the 1970s, Yi Sŏng-si (1997, 2005) deemed *jīng* 椋 as a sinograph originally from the Koguryŏ area on the Korean peninsula, which had then spread to Paekche, Silla, and finally Japan. Shortly after, Kim (2008), Lee (2013), Dai (2016), Kwon (2018, 2021b), and Lee (2019) further agreed with Yi's assessment. Among these, Dai (2016) argued that *jīng* 椋 had originated from the character *jīng* 京, based on two pieces of evidence. One being the word *jīngwū* 京屋 as the earliest attestation, referring to a warehouse for meat occurring in a mural painting from Anak Tomb No. 3 (安岳三號古墳, 357 CE) in South Hwanghae province. The other one being *jīng* 椋, which occurred in the epitaph from the Tŏkhŭng-ri Tomb (德興里古墳, 408 CE) in South P'yŏng'an Province (see Figure 1(a) and Table 1).

Generally, previous studies on *mokkan* from Korea and Japan agreed that *jīng* 椋 meant "warehouse, granary" in Old Korean (hereafter OK). There are several well-established Korean *mokkan* fragments bearing the sinograph *jīng* 椋. The first piece (Figure 1(b)) is from Unified Silla around the eighth century, and was excavated at Hwangnam-dong (皇南洞) site no. 376, Kyŏngju, in 1994. According to the *Dictionary of Korean Sinographs on Mokkan* (Son 2011), the text on the front was determined to read 五月廿六日, 椋食□內之, 下椋有 ... ("On 26th May, the grain in the warehouse [?] inside, there are ... in the warehouse below") and on the back 仲椋食有廿? 二石 ("The warehouse in the middle has twenty-two? *dan* 石 (Chinese units) of grains"). In total, *jīng* 椋 occurred three times, separately, in the words *jīngshí* 椋食 ("the grain in the warehouse"), *xiàjīng* 下椋 ("the warehouse below") and *zhòngjīng* 仲椋 ("the warehouse in the middle"). The second piece (Figure 1(c)) is from Paekche dating to around the end of the sixth century, excavated at the Nŭngsan-ri (陵山里) Monastery site, Puyŏ, in 2002. The specific part of the inscriptions was 三月 仲椋... ("In March, the warehouse in the middle ..."). That is, *jīng* 椋 occurs once in the word *zhòngjīng* 仲椋 ("the middle warehouse"). The third piece (Figure 1(d)) is also from Paekche and dates from around the seventh century. It was

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[2] Regarding the author of the *Guangya*, Zhang Yi 張揖 (*c.* early third century CE), in Inaba (1936: 5), the name was wrongly written as Zhang Ji (張楫) from the Northern Wei dynasty (386–534 CE). However, Zhang Yi lived during the Wei State of the Three Kingdoms (220–265 CE) period before the Jin (266–420 CE) dynasty. Meanwhile, according to the collation of Zhang (2019), the variant of *jīng* 京, *jīng* 庼 is not attested in the *Guangya* as cited in Inaba (1936: 5). As far as we know, *jīng* 庼 is only attested in the *Jiyun*; however, it is possible that the *Jiyun*'s editors had cited an earlier version of the *Guangya*.

[3] Where pronunciation is indicated using two characters the first indicates the initial consonant, and the second indicates the rhyme.
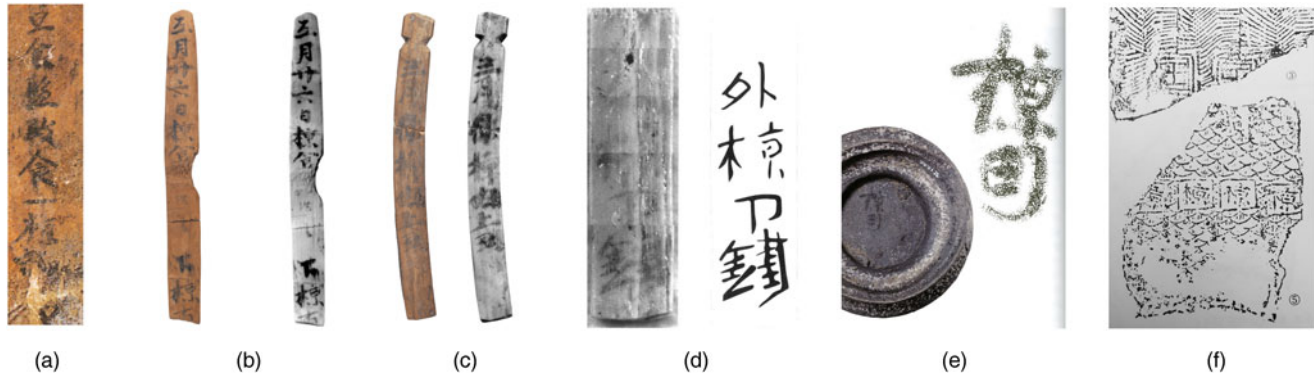
Figure 1. *Jīng* 椋 in different types of sources from China, Korea, and Japan
Sources:
(a): Chu 1972: Fig. 59
(b) Ch'angwŏn Research Institute of Cultural Heritage 2006: 200, fig. 281
(c) Ch'angwŏn Research Institute of Cultural Heritage 2006: 218, fig. 300
(d) Pak, Chŏng, and Yun 2008: 185, fig. 2
(e) Kyŏngju National Museum. (eds) 2002: 48, fig. 61
(f) Lim 1989: 104, fig. 5

excavated in Ssangbuk-ri (雙北里) site No. 280-5, Puyŏ, in 2008. The front inscription was 外椋 卩鐵 ("outside warehouse bureau, iron"). *Jīng* 椋 is attested in the name of the Paekche bureau *wàijīngbù* 外椋卩. The simplified sinograph *bù* 卩 is a vernacular variant of the *bù* 部 ("bureau").

Additionally, one inkstone unearthed from Anabji (雁鴨池) in East Kyŏngju was inscribed with *jīngsī* 椋司 ("official of the warehouse") (Figure 1(e)). And one flat tile from the Unified Silla unearthed at the Mujin (武珍) old fortress site in Kwangju was inscribed with the variant of *jīng* 椋 (Figure 1(f)).
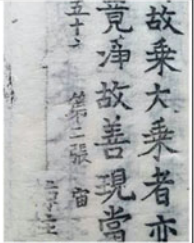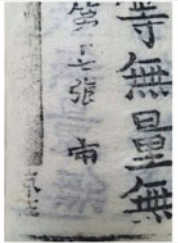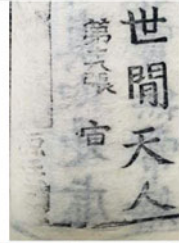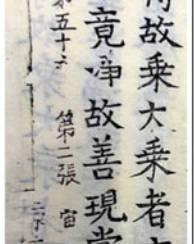
Regarding the Japanese *mokkan*, 22 pieces contain the sinograph *jīng* 椋[4]. For instance, according to Inukai (2011), a piece of *mokkan* bearing *jīng* 椋 was unearthed in the *Inoue yakusidō iseki* (井上藥師堂遺跡) site, Ogori, Fukuoka prefecture, and probably made in the seventh century. The inscription is deciphered as 寅年白日椋稻遣人 ("in the year of *yin* [the third of the twelve earthly branches], white sun warehouse sent people"). Here the word *báirìjīng* 白日椋 ("white sun warehouse") is interpreted as a name for that warehouse, which combines the word *báirì* 白日 and *jīng* 椋.
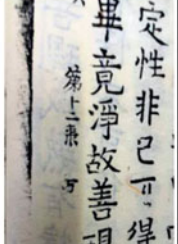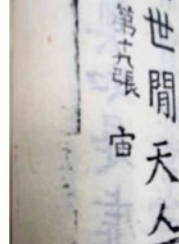
Another important piece, unearthed in the *Nishigawaramori no uchi iseki* (西河原森ノ內遺跡) site, Shiga prefecture, was inscribed in the latter half of the seventh century and on the front reads 椋直伝之... ("the official of the warehouse said..."). Regarding the word *jīngzhí* 椋直 ("the official of the warehouse"), Kim (2008) argued that it corresponded to the OK word *cāngzhí* 倉直, which has the same meaning – "official of the warehouse". Certainly, not only this word *cāngzhí* 倉直, but also, as mentioned in Inaba (1936: 7), a similar family name probably originated from the Korean peninsula called *kura kaki* (椋垣, クラカキ >クラガキ, > *kuragaki*; via *rendaku* 連濁, "sequential voicing") which was recorded in the *New Selection and Record of Hereditary Titles and Family Names* (*Shinsen shōjiroku* 新撰姓氏錄, Fujiwara et al. 815 CE [1981]), and has the same kun'yomi as *kura kaki* (倉牆, クラカキ), *kura kaki* (倉垣, クラカキ) and *kura kaki* (藏垣, クラカキ). *Jīng* 椋 in the family name *kura hito* (椋人) in Western Old Japanese (WOJ) corresponds to its *Man'yōgana* (万葉仮名)[5] form *kura* (久良, クラ) in *kura hito* (久良毗登, クラヒト). Meanwhile, according to Tsukishima (2007, vol. 3: 174), the *kunten* (訓點) glossing of different kinds of kanji (漢字, カンジ) such as *sō* (倉, ソウ), *zō* (蔵, ゾウ), and *kyō* (京 キョウ), *ko* (庫, コ) are all attested by reading the same kun'yomi, *kura* (クラ), meaning "warehouse, granary".

Importantly, according to Kwon's (2018, 2021b) textual field work on Buddhist texts and various Korean historical documents during the Koryŏ period, *jīng* 椋 was deemed as a variant of its radical character *jīng* 京, while having the same Sino-Korean reading as *jīng* 京. Specifically, according to Kwon (2021b), *jīng* 椋 occurred in two different versions of the Buddhist text *Mahāprajñāpāramitā Sūtra* (大般若波羅蜜多經), in the Korean Tripitaka (高麗大藏經, *c.* 1237 CE). Figure 2 (a-e) shows how the character appears in the Wŏljŏng Temple (月精寺) version, which was reprinted in 1856, and the Tong'guk University (東國大學校) version, which was reprinted in 1963. We can note that the same carver's name on different pages was written as *jīngzhù* 椋柱 in both versions, such as page 56:02, 56:12 and 56:20; however, they were corrected as *jīngzhǔ* 京主 on pages 56:17 and 56:19. Thus, we propose that the alternation between *jīngzhù* 椋柱 and *jīngzhǔ* 京主 is the core piece of evidence to consider the Sino-Korean pronunciation of

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[4] For further details, see the publications of Nara National Research Institute for Cultural Properties on the website <https://www.nabunken.go.jp/publication/index.html>.

[5] *Man'yōgana* refers to the subset of sinographs used to write Japanese phonographically (not logographically), not only in the poetry anthology *Man'yōshū* but also in other texts in the Middle Japanese period. For further details, see Frellesvig (2010).

Version	56:02	56:12	56:17	56:19	56:20
Wŏljŏng Temple					
Tongguk University					
	(a)	(b)	(c)	(d)	(e)

Figure 2. *Jīng* 椋 in two different versions of the Korean Tripitaka
Source: Taken by the author Kwon In-han (In Kwon 2021b: 218–19)

jīng 椋 and *jīng* 京 during the Koryŏ period as being the same. Meanwhile, we infer that *jīng* 椋 was used consistently until the end of the thirteenth century.

Furthermore, according to Kwon (2021b), *jīng* 椋 is well attested in the Korean documents *Investigation Report of Susŏn Temple* (*Susŏnsa Hyŏngji'an* 修禪寺形止案, *c*. 1230 CE; Lee 1987: 62) and the *Investigation Report of Tae'an Temple* (*Tae'ansa Hyŏngji'an* 大安寺形止案, *c*. 1230 CE). In the former, *jīng* 椋 occurred in the Literary Sinitic sentence 鍮銅樓椋參間丙向 ("There are three brass warehouses in the building, and the direction is *bing* [the third heavenly stem]"). In the latter, it occurred as its variant *jīng* 稤 in the sentence 稤公房梗四間 ("Four rooms for the official of the warehouse"). The left radical *hé* 禾 ("rice plant") of variant *jīng* 稤 is either a scribal error or variant of the radical *mù* 木, by adding one stroke at the top. In addition, this *jīnggōng* 稤/椋公 occurred in the Korean name *jīnggōng-bǔzhòng* (椋公卜重) in *A Crossbeam Memo at the Josadang Shrine* (*Chosdang Tongnyang ki* 祖師堂棟樑記, 1377 CE; see Lee 1987: 236), which was discovered in the Pusŏksa Monastery (浮石寺), Yŏngju (榮州), North Kyŏngsang province. We propose that the initial word *jīnggōng* 稤/椋公 is a title referring to the official of the warehouse in this monastery during the Koryŏ period, and *bǔzhòng* 卜重 is likely his name.

1. A new analysis of the origin of *jīng* 椋

In order to analyse the origin of *jīng* 椋, initially, it is necessary to examine its status in Chinese historical lexicology. According to the "Explaining Trees" (Shimu 釋木) section in the first surviving Chinese dictionary *Approaching Elegance* (*Erya* 爾雅, *c*. third century BCE, Zong, Chen, and Xiao 2003: 1122), *jīng* 椋 was glossed as 椋, 即來 ("*Jīng* is called *jílái*"). In other words, *jīng* 椋 was defined as a disyllabic word (i.e. *lianmianci* 連綿詞, "binding word") *jílái* 即來, the name of a tree.[6] Shortly after, during the Jin dynasty Guo Pu 郭璞 (276–324 CE) annotated the *Erya* as 椋, 材中車輞也 ("The wood of *jīng* was used for making the rims of wheels").

Meanwhile, the earliest sinograph dictionary *Explaining Graphs and Analyzing Characters* (*Shuowenjiezi* 說文解字, 121 BCE) also stated that 椋, 即來也 ("*Jīng* meant *jílái*."). In the rime book *Broad Rimes* (*Guangyun* 廣韻, 1008 CE, Yu 2008), *jīng* 椋 was recorded as 椋, 木名 ("*Jīng* is a tree name"). However, *jīng* 椋 was arranged in the small rime group of *liáng* 良 which implies that its *fanqie* spelling should be *lǔzhāng qiè* (呂張切; The consonant of *jīng* 椋 follows the consonant of *lǔ* 呂, the vowel and tone follow those of the character *zhāng* 張). That is, *jīng* 椋 and *liáng* 良 had the same pronunciation during the Middle Chinese (MC) period (Yu 2008: 171–2). Hereafter, the *Jiyun* adopted the same definitions from the *Erya* and the *Shuowenjiezi*.

In sum, as a tradition in the Chinese historical lexicology, *jīng* 椋 referred to "the name of a tree", not "warehouse, granary", and it had the same pronunciation as *jīng* 京, later being pronounced the same as *liáng* (良 MC [ljaŋ]; Schuessler 2009: 84).

However, according to *Collections of Glosses of Sinographs* (Zong, Chen, and Xiao 2003: 72), we can confirm that the radical character *jīng* 京 has four main meanings: "artificial hill, high mound"; "large square granary"; "grand, big"; "capital, metropolis". Focusing on the second meaning, in the *Shuowenjiezi* it states that a round granary is called *qūn* 囷, and a square one is called *jīng* 京. According to Inaba (1936: 18), the usage of the *jīng* 京 meaning "large square granary" was attested in the *Writings of Master Guan* (*Guanzi* 管子, 475–221

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[6] Both Inaba (1936: 6) and Kwon (2021b: 215–7) misunderstood *jí* 即 as an adverb meaning "that is; namely" in the word *jílái* 即來. It should be rejected since the grammatical usage of *jí* 即 did not apply to the whole text in the *Erya*; additionally, the adverb *jí* 即 rarely co-occured with *yě* 也 in a judgement sentence in the history of Literary Sinitic syntax.

BCE), and in the "Biography of Canggong" (*Canggong zhuan* 倉公傳) of the *Records of the Grand Historian* (*Shiji* 史記, *c.* 90 BCE). Additionally, in the *Annotation and Proofs of the expanded Erya* (*Guangya shuzheng* 廣雅疏證, Wang 1795 CE), the pre-eminent scholar Wang Niansun (王念孫, 1744–1832 CE) deemed that *jīng* 京, *yú* 庾, *lǐng* 廩, *lù* 廘, *kuài* 廥, *gòng* 匭, *xiān* 廯 and *qūn* 囷 occurring in the "Explaining Buildings" (*Shigong* 釋宮) section of the *Guangya* had the same meaning as *cāng* 倉, that is, "warehouse, granary" (Zhang 2019: 503–4).

Hence, in the present article we further argue that *jīng* 椋 meaning "warehouse, granary" was independently created from its radical character *jīng* 京 on the ancient Korean Peninsula, probably Koguryŏ. First, if *jīng* 椋 was borrowed from Chinese, there should be some evidence of *jīng* 椋 referring to a tree on the peninsula or in Japan, but there is no such evidence. Second, if *jīng* 椋 was created from its radical character *jīng* 京, then *jīng* 椋 should not refer to a tree on the peninsula, but rather to a granary or warehouse, and it does. More importantly, during the Koryŏ period it was interchangeable with *jīng* 京 "granary", as argued in Kwon (2021b). Third, it is reasonable to address why *jīng* 椋 was created, or reinvented, on the Korean Peninsula. Adding the radical *mù* 木 to *jīng* 京 "granary" could serve to disambiguate the two meanings of "granary" *jīng* 京 and "capital" *jīng* 京. Based on the contemporary occurrence of *jīngwū* 京屋 from Anak Tomb No. 3, and *jīng* 椋 from the inscription 食一椋記之 ("The grains recorded in one warehouse") of the Tŏkhŭng-ri Tomb (Figure 1(a)), we propose that *jīng* 京 and *jīng* 椋 coexisted as variants in the fifth century in Koguryŏ and possibly other areas of the Korean Peninsula. Besides, Holm (2013: 66) refers to the phenomenon of non-Chinese creating "new" sinographs resembling pre-existing obscure sinographs as "reinvention". This obscure *jīng* 椋 denoting the name of a tree in the *Erya* is thus a mere coincidence with the reinvented "granary, warehouse" *jīng* 椋.

In summary, *jīng* 椋 originated from its radical character *jīng* 京 "warehouse, granary", and it was widely used in Koguryŏ, Paekche, Silla, Japan and Koryŏ. *Jīng* 椋 had its mis-copied form *lùe* 掠 and its variant *jīng* 凉.

2. A lexical reconstruction of *jīng* 椋

Regarding the lexical reconstruction of *jīng* (椋), we consider three aspects: whether *jīng* 椋 is related to Old Chinese (OC) readings; how to reconstruct *jīng* 椋 in OK internally; and how to reconstruct *jīng* 椋 in OK externally by utilizing the kun'yomi of *jīng* 椋 in WOJ *kura* (クラ).

First, it is certain that the OK lexical form of *jīng* 椋 and its phonological reconstruction are not related to OC. In OC, the initial of *jīng* 京 has been reconstructed as the consonant cluster *kr-, and the whole syllable was OC *kraŋ (Schuessler 2009: 76). By Later Han Chinese (LHan) this OC consonant cluster *kr- simplified to consonant *k-. The potentially relevant initials of *jīng* 椋 should be either [k-] or [l-]. In Chinese historical phonology, there were two groups of characters that share the same phonological series as *jīng* 京. One group had the onset [k-] in the *Groups of the Initial Jiàn* (*jianmu* 見母) in MC, including characters such as *jǐng* 景 ("scenery"), *jīng* 鯨 ("whale"), *jīng* 鶄 ("a bird name"), *jīng* 婛 ("a character used for female names"), *jīng* 猄 ("a deer name") and *jīng* 麖 ("black deer"). The other group had the onset [l-] in the *Groups of the Initial Lái* (*Laimu* 來母) in MC, such as *liáng* 涼/凉 ("cool"), *liàng* 諒 ("excuse"), *liàng* 晾 ("sun-dry"), *lùe* 掠 ("rob"), *liáng* 䃤 ("mixed starch") and *liàng* 鍄 ("a percussion instrument"). However, [l-] is unlikely the consonant of *jīng* 椋, because *jīng* 椋 and *jīng* 京 were interchangeable and both of them had the same initial consonant [k-]. In spite of this, the vowel of *jīng* 椋 is still

not certain since Sino-Korean readings in pre-OK[7] could be different from Modern Standard Sino-Korean (MSSK),[8] in which *jīng* 椋 and *jīng* 京 have the same reading *kyŏng* (경 [kjəŋ]; MC [kjɐŋ]).

Second, the correspondence between *jīnggǔ* 㝵谷 and *shǒuyǐtūn* 首乙吞/呑 in the same toponym of Koguryŏ is the only piece of evidence that could be utilized to reconstruct the lexical form of *jīng* 椋 in OK internally. Here, the phonogram *tūn* 吞/呑 ("to swallow") should be a variant of character *gǔ* 谷 ("valley"), which due to the similar shapes, were frequently mixed in OK texts. This is explicitly stated in the case of another toponym of Koguryŏ in the "*Chiri-ji*" (vol. 37) of the *Samguk sagi*, 習比谷, 一作吞 ("*Xíbǐ-gǔ*, *gǔ* 谷 is also written as its variant *gǔ* 吞"). The exact meaning of *gǔ* 谷/呑 in OK is still undeciphered, but scholars generally agree that it had a similar meaning to Chinese "valley" (Lee and Ramsey 2011: 78, and Vovin 2010: 25, 142).

Regarding the phonological relation between *jīng* 㝵 and *shǒuyǐ* 首乙, Inaba (1936: 20) reconstructed *shǒuyǐ* 首乙 as *sulr; Beckwith (2004: 81, 150) reconstructed as *śur~śuir, and Lee (2019: 13) deciphered as *sul (술 [sul]). However, they should all be rejected. We argue that the *shǒu* 首 (MC [śjəuB/C]) of *shǒuyǐ* 首乙 was not a phonogram, but a semantogram meaning "head",[9] and *yǐ* 乙 (the second of the ten Celestial Stems) represented a coda [-l] as a common phonogram in OK. This *shǒuyǐ* 首乙 corresponded to the Korean word *kol* (골, [kol], "head") and *kori* (고리, [ko.li], "head"), as well as in the compound words *mŏlidkol* (머릿골, [mə.lit.k'ol], "head") and *kolch'i* (골치, [kol.tʃʰi], "head"). *Kori* (고리) is attested as a Late Middle Korean (LMK) word in the *Translation of "Old Cathayan"* (*Pŏnyŏk Nogŏldae* 翻譯老乞大, 1517 CE; 1: 28) and *kol* [kol] is attested in the word *kolch'i* (골치) in the *Collection of Sinographs to Enlighten the Ignorant* (*Hunmongjahoe* 訓蒙字會, Ch'oe 1527 CE [1971]: 54, 206). Hence, the phonological reading of *jīng* 㝵 in OK could be reconstructed as *kol.

Separately, the Korean word *kotjip* (곳집, [kos.tʃʰip]) meaning "granary" is attested in the *Translation of "Interpreter Pak"* (朴通事諺解 *Pak T'ongsa ŏnhae*, 1677 CE; 2:56). We propose that *kotjip* is a compound from *kol-s-chip by combining the native Korean words *kol* (골, [kol], "warehouse, granary") and *chip* (집 [tʃip], "house"), while undergoing the elimination of the lateral coda [-l] and the addition of a possessive -ㅅ- [-s-]. This is in opposition to a compound from *kù (庫, 고 *ko, "storehouse")-s-chip by combining the Chinese loanword *kù* 庫 and the Korean word *chip* (집), because in the history of Korean morphology, there is no evidence that *kù* 庫 was ever a monosyllabic word. Besides, if the sound change *kol-s-chip > ko-s-chip had existed, the tone of *ko-* in *ko-s-chip* is still unknown. However, theoretically LMK *kol* and OK *kol with a rising tone reflecting an earlier disyllable pre-OK **ko^L.ra^H would be highly possible.

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[7] Generally speaking, Old Korean (marked with one asterisk) is defined as the language of the Unified Silla state (676–935 CE) (Lee 1998; Lee and Ramsey 2011). In the present article, we refer to the period before OK during Three Kingdoms period as pre-OK (marked with two asterisks). We consider that two distinct types of languages existed during the pre-OK period. One is Puyŏ (夫餘)-type languages from the North, such as the languages in Koguryŏ; the other one is Han (韓)-type languages from the Southern Korean Peninsula, such as the languages in Paekche and Silla.

[8] Miyake (2018), reconstructs *e as a source of Korean *yŏ* in his system. Thus, the reading of *jīng* 椋 would be pre-OK Sino-Korean *keng. However, we should notice the Sino-Korean pronunciations recorded in the rime book *Standard Rhymes of the Eastern States* (*Tongguk Chŏngun* 東國正韻, 1448 CE), which was utilized in Miyake (2018), did not totally reflect the practical LMK pronunciations during the fifteenth century.

[9] According to Wang (2018: 94–107), in Chinese historical lexicology there were three words meaing "head" including *yuán* 元, *shǒu* 首 and *tóu* 頭, all of which were used during the OC period. However, *yuán* 元 was replaced by *shǒu* 首 in much earlier time and *shǒu* 首 is attested in the words inscribed on oracle bones, and it was used frenquently during the OC period. *Tóu* 頭 initially occurred in the text *Zuo Tradition* (*Zuozhuan* 左傳, c. late fourth century BCE), and it had replaced *shǒu* 首 in spoken Chinese during the Western Han dynasty (206 BCE –24 CE).

Third, the kun'yomi of *jīng* 椋 in WOJ is *kura* (クラ [ku.ra]). It is uncertain whether WOJ *kura* was from a pre-Old Japanese (OJ) **ku.ra* or a pre-OJ **ko.ra*, because there is no pre-raising (i.e. pre-OJ **o > u*) attestation of the word in Japanese sources. As a result, we suppose that WOJ *kura* should be a simple and direct borrowing from the reading of *jīng* 椋 in pre-OK, either **ku^L.ra^H or **ko^L.ra^H. However, there is need for further discussion on two points: whether externally the first vowel of pre-OK **Cu/o.Ca (C = consonant) was **u or **o; and how pre-OK **Cu/o.Ca changed to OK **CoC (i.e. pre-OK **ku^L/o^L.ra^H > OK *kol^R). Fortunately, we have two related words to consider as valid arguments: "bear" and "crowd".

2.1 *"Bear"*

The Chinese chronicle *History of the Liang* (*Liangshu* 梁書, 636 CE; Yao 2020: vol. 54), records the phonograms *gùmá* 固麻 (MC [kuo^C-ma]) occurring in the name of the Paekche capital *xióngjīn* 熊津 ("bear ferry") as corresponding to the semantogram *xióng* 熊 ("bear"). Subsequently, in the *Chronicles of Japan* (*Nihon shoki* 日本書紀, Toneri et al. 720 CE (1994); vol. 14, 26), compiled in the eighth century under Toneri Shinnō 舍人親王 and Ō no Yasumaro 太安萬侶, the word "bear" was recorded as phonograms *jiŭmá* 久麻 in the same toponym of Paekche, *kuma nori* (久麻怒利, クマノリ) and *komu nari* (久麻那利, コムナリ).[10] This word "bear" in WOJ was a simple and direct borrowing from pre-OK (Vovin 2005: 128; 2010: 32, 143).

However, in the *Nihon Shoki*, *jiŭmá* (久麻) has two kinds of katakana reading, glossed *kuma* (クマ [ku.ma]) and *komu* (コム [ko.mu]). If we treat the phonogram *jiŭ* 久 as a preserved Paekche spelling, it could represent a Paekche pre-OK **kwə or **ko (cf. The Lhan reading **kwuə^B* in Schuessler (2009: 95)). Such a Paekche pre-OK [kwə] or [ko] would be borrowed into pre-OJ as **ko*, which then became OJ Go-on (吳音) reading *ku* after raising of **o* to u. The raising of Proto-Japonic (PJ) **o > u* in pre-OJ before the Suiko period (592–628 CE) has been convincingly demonstrated by Miyake (2003), who provides philological evidence. Meanwhile, the other reading *kuma* may be considered as a later reading from Paekche that was incorporated into WOJ as a loanword without sound change.

Alternatively, Kōno (1987: 77) argues the first reading *komu* to be a later form that developed from the Korean (Silla?) borrowed into pre-OJ in the monosyllabic form *kom* after the Korean had already dropped the final vowel *a*. However, this word was preserved as *koma* (고·마, [ko.ma^H]), an earlier disyllabic form in the Korean alphabet *hangul* (한글), in the *Song of the Dragons Flying Through Heaven* (*Yongbi ŏch'ŏn ka* 龍飛御天歌, 1445~1447 CE, vol. 3: 15. See Han'gŭl hak-hoe 1992: 4866), but as a monosyllabic form *kom* (:곰, [kom^R]) in the *Hunmongjahoe* (Ch'oe 1527 CE [1971]: 45, 187). *Komu* could be from a dialect reading while corresponding to pre-OK **koma in Silla.

Hence, regarding the "bear" in pre-OK and OK, we propose that there are two possible diachronic sound changes. First, vowel **o of pre-OK **koma raised to **u in Paekche, and then changed to monosyllabic OK *kom diachronically, as a result of undergoing the contraction of two syllables, as the formulation pre-OK **Co.Ca > **Cu.Ca > OK *CoC. Second, pre-OK **ku.ma in Paekche and pre-OK **ko.ma in Silla had coexisted as different dialect readings on the ancient Korean Peninsula and both were borrowed into pre-OJ. In

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[10] The *Nihon Shoki* cited three chronicles of Paekche which no longer exist as sources. They include the *Records of Paekche* (*Kudara ki* 百濟記) occurring from Empress Jingū (神功 47, 367 CE) in Chapter 9 to Emperor Yūryaku (雄略 20, 476 CE) in Chapter 14 of the *Nihon Shoki*; the *New Selection and Record of Paekche* (*Kudara shinsen* 百濟新撰) occurring mainly during the Emperor Yūryaku (雄略) period in Chapter 14; and the *Basic Annals of Paekche* (*Kudara honki* 百濟本紀) occurring from Emperor Keitai (繼體 3, 509 CE) in Chapter 17 to Emperor Kinmei (欽明 17, 556 CE) in Chapter 19. For more details, see Mori (1991) and Lyu (2000).

Table 2. Phonographic renderings of "crowd, throng, group"

Transcription	Sources	Time period	Country	Text type
牟盧	*Sanguozhi*	c. 280–90 CE	Mahan	Chinese chronicle
模盧	*Kwanggaet'o wangnŭngbi*	414 CE	Paekche	Korean epigraph
牟羅	*Ul-jin pongp'yengli Shillabi*	524 CE	Silla	
	Liangshu, Nanshi, Xin Tangshu; Suishu, Beishi	c. 656–1060 CE	Silla, Jeju	Chinese chronicles
	Nihon shoki	720 CE	Paekche, Imna, Silla	Japanese chronicle
毛羅	Pok'am-ri *mokkan*	Early 7th century CE	Paekche	Korean *mokkan*
	Sŏngsan sansŏng *mokkan*	Mid- to late 6th century CE	Silla	
毛良	*Samguk sagi*	1145 CE	Paekche	Korean chronicle

other words, Paekche was a pre-OK dialect with **u[11] corresponding to Silla **o in Han-type languages. And the pre-OK **ko.ma in Silla survived and experienced syllabic contraction, that is pre-Ok **Co.Ca > OK *CoC. In the present article, we suppose that the later one is simpler and more elegant. By analogy, we infer that *jīng* (椋) probably could be read as pre-OK **ku^L.ra^H in Paekche and as pre-OK **ko^L.ra^H in Silla.

2.2 "Crowd, throng, group"

The other word, we speculate, has the meaning of "crowd, throng, group" (Table 2 lists five phonographic renderings). Initially, in the toponyms of Mahan (馬韓) from the *Sanguozhi*, this word was recorded with the phonograms *móulú* 牟盧 (Lhan *mu-lɑ > MC [mjəu-luo]) in the name of the polities, *zīlí-móulú-guó* 咨離牟盧國 ("*zīlí*-throng?-state") and *móulú bēilí-guó* 牟盧卑離國 ("throng?-community-state"). *Móulú* 牟盧 further occurs in the toponym of Paekche *móulú-chéng* 牟盧城 ("throng?-city") in the *Gwanggaeto Stele* (*Kwanggaet'o wangnŭngbi* 廣開土王陵碑, 414 CE. See Hŏ 1984: 6–7). The same inscription separately attests phonograms *mólú* 模盧 (LHan *mɑ-lɑ > MC [muo-la]) in fortress names of *jiù-mólú-chéng* 臼模盧城 ("*jiù*-throng?-city") and *gè-mólú-chéng* 各模盧城 ("*gè*-throng?-city"). This *mólú* 模盧 is likely a variant of *móulú* 牟盧.

The same underlying word also occurs as *móuluó* 牟羅 (MC [mjəu-la]) in the toponym of Silla, *jūfá-móuluó* 居伐牟羅 ("big community-throng?") from the inscription of the *Ul-jin pongp'yŏngni Silla Stele* (蔚珍鳳坪里新羅碑, 524 CE. See Kwon 2021a). Meanwhile, this *móuluó* 牟羅 occurred in various Chinese chronicles, One is in the pre-OK appellation for the city of Silla, *jiàn-móuluó* 健牟羅 (MC [kjɐn-mjəu-la], "big throng?"; 健 > LMK *k'ŭn* 큰) in the *History of the Liang*, the *History of Southern Dynasties* (*Nanshi* 南史, Li 659 CE [1975]:

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[11] According to Tsukishima (2007, vol. 7: 499), the reading of *jīng* 椋 when occurring in the tree name, *jīngzǐ mù* is *muku* (椋子木; 牟久乃支, ムクノキ, *muku no ki*). Although *muku* is regarded as the kun'yomi of a specific kind of tree, we suspect *muku* could be a pre-OK Sino-Korean pronunciation of sinograph *mù* 木, especially representing the first vowel *u from Paekche. The kun'yomi glossing during the earlier period of the Japanese language could be arbitary, and the Go-on reading of *mù* 木 *moku* (モク, [mo.ku]) and the Kan-on reading *boku* (ボク, [bo.ku]) both have a vowel *o*, not *u*.

vol. 54) and the *New History of the Tang* (*Xin Tangshu* 新唐書, Ouyang, 1060 CE [1975]: vol. 220). The other is in the previous name of Jeju Island, *dān-móuluó-guó* 聃/𣞓牟羅國 ("*dān?*-throng?-state") in the *History of the Sui* (*Suishu* 隋書, Wei 656 CE [2019]: vol. 81) and the *Beishi* (Li 659 CE [1974]: vol. 94).

Importantly, this *móuluó* 牟羅 also occurred in the *Nihon Shoki* (vol. 17, 19) in toponyms of all the southern Korean polities. They are in the toponyms of Paekche, *puna mura* (布那牟羅, フナムラ, "*puna* throng?"); toponyms of Mimana (任那) including *kushi mura* (久斯牟羅, クシムラ, "*kushi* throng?"), *ishiki mura no sashi* (伊斯枳牟羅城, イシキムラノサシ, "*ishiki* throng city"), *kure mura no sashi* (久禮牟羅城, クレムラノサシ, "*kure* throng? Fortress"), *toriki mura* (騰利枳牟羅, トリキムラ, "*toriki* throng?") and *mushiki mura* (牟雌枳牟羅, ムシキムラ, "*mushiki* throng?"); and the toponym of Silla *kuda mura* (久陀牟羅, クダムラ, "*kuda* throng?"). As we know, *móuluó* 牟羅 corresponds to WOJ *mura* (ムラ, [mu.ra]) in *Man'yōgana*, and it is the kun'yomi of sinograph *cūn* 村 ("village"). We consider it reasonable to incorporate a Chinese administrative unit *cūn* 村 into WOJ, while still keeping its pre-OK reading and recording as phonograms *móuluó* 牟羅.

In addition, the same word was attested as *máoluó* 毛羅 (MC [mâu^C-la]) in Korean *mokkan*. Thereupon, one piece is from Paekche around the early seventh century, which was excavated at Pok'am-ri (伏巖里) Tombs in Naju (羅州) in 2008. The other is from Silla around the mid- to late sixth century CE, which was excavated at Sŏngsan sansŏng (城山山城) fortress site in Ham'an (咸安) in 2017 (See Kwon, Kim, and Yun 2015). Furthermore, the word meaning "village" was attested as *máoliáng* 毛良 (MC [mâu^C-ljaŋ]) in the toponym of Paekche, *máoliáng-fūlǐ* 毛良夫里 ("throng? Community"; MC [mâu^C-ljaŋ-pju-lji^B]) in the "*Chiri-ji*" (vol. 36, 37) of the *Samguk sagi*. The phonogram *liáng* 良 represents OK *ra, the same as the phonogram occurring in the *hyangga* (鄉歌, "local songs")[12] and in *Man'yōgana* as *ra* (良, ラ, [ra]) (Lee 1998: 79).

Overall, *móulú* 牟盧, *mólú* 模盧, *móuluó* 牟羅, *máoluó* 毛羅 and *máoliáng* 毛良 could be different phonograms recording the same Korean word. Thus, is it possible to reconstruct their pre-OK pronunciations? Or even what kind of sound change would have occurred among different phonograms before LMK?

First, we deem *móu* 牟 as either pre-OK **mu or **mo.

According to Kwon (2021b: 8), *móu* 牟 occurring in the king's name of Silla inscribed as *móujízhì* 牟即智 from the inscription of the *Ul-jin pongp'yŏngni Silla Stele* mentioned above, corresponds to its variant pseudo-*lìng* 另 ("another, separate") in the queen's name of Silla *lìngjízhì* 另即智 which was inscribed on the *Ul-ju ch'ŏnjŏnni Stele* (*Ul-ju ch'ŏnjŏnli sŏsŏk* 蔚州川前里書石, 525–539 CE). We propose that this pseudo-*lìng* 另 is a graphic error for *móu* 牟 because the real sinograph *lìng* 另 is not attested until the rime book *Collected Rimes of Five Kinds of Sounds* (*Wuyin jiyun* 五音集韻, 1212 CE), and its lexical usage is attested even later, in the Qing dynasty (see The editorial board of *Great Dictionary of Sinographs* 2010: 621). In addition, it is impossible for a Korean word to begin with a liquid as *lìng* 另 if we assume the initial law[13] to have existed in the history of the Korean language.

Importantly, pseudo-*lìng* 另 occurred in the official name of Silla recorded as *lìnglìzhì* 另力智, which is attested both in the inscriptions from the *Land Occupation Monument of Chinhŭngwang in Ch'angnyŏng* (昌寧真興王拓境碑, 561 CE) and *Campaign Monument of*

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[12] *Hyangga* are the 25 oldest poems (including the eleven *Songs of the Ten Vows of Samantabhadra*, i.e. *Pohyŏn sibwŏn'ga* 普賢十願歌) of completely Korean writing and literary composition that are still in existence. The method of transcription in *hyangga* is called *hyangch'al*. See more in Lee and Ramsey (2011).

[13] The initial law refers to the fact that the liquid /l/ did not occur in word-initial position in Korean native words, and in some Sinitic vocabulary the liquid /l/ had changed to the nasal dental /n/ by the fifteenth century. See more in Lee and Ramsey (2011: 152–3).

Chinhŭngwang in Ma'ullyŏng (磨雲嶺真興王巡狩碑, 568 CE) (See Hŏ 1984: 35–36, 40–42). And this pseudo-*lìng* 另 corresponded to the phonogram *wǔ* 武 ("martial"; MC [mju^B]) in the same name *wǔlìzhì* 武力智, which was inscribed on the Silla Chŏksŏng Stele in Tanyang (丹陽新羅赤城碑, before 551 CE, Hŏ 1984: 33–34). Hence, we argue that *móu* 牟, its variant pseudo-*lìng* 另, and their homonymic phonogram *wǔ* 武 might have the same phonological reading.

However, we should note that *móu* 牟 had three instances of *fanqie* spellings in the *Jiyun*. They are: *mífú qiè* 迷浮切, LHan *mu; *mòhòu qiè* 莫後切, LHan *mo^B; and *mòhóu qiè* 莫候切, LHan *mo^C. Though the *Jiyun* was completed in 1037 CE and while it is not clear what substratum influence may underlie the different *fanqie* spellings, we could suppose that *móu* 牟 does not necessarily represent pre-OK **mu, but might also represent pre-OK **mo.

Second, the phonogram *wǔ* 武, with its LHan *muɑ^B reading, belongs to the *-uɑ rhyme class that merged with the LHan *-uo rhyme class into the rhyme *yú* (*yuyun* 虞韻; MC [-ju]) in Chinese historical phonology. It is likely that *-uɑ merged with *-uo before raising to [-ju], that is *wǔ* 武 LHan *muɑ^B > *muo^B > MC [mju^B]. Thus, this pre-OK phonogram *wǔ* 武 might also represent pre-OK **mu or pre-OK** mo.

Third, the phonogram *mó* 模 (LHan *mɑ > MC [muo]) in *mólú* 模盧 has an o-vocalism. The phonogram *máo* 毛 (LHan *mɑu > MC [mâu]) in *máoluó* 毛羅 could also have an o-vocalism in early Sino-Korean. Though *máo* 毛 represents *mo* (モ, [mo]) in *Man'yōgana*, we cannot determine for certain its pre-OK and OK reconstruction before the eighth century. However, it is simpler and more elegant to assume that *máo* 毛 was *mo,* as in modern Sino-Korean, since there is no evidence that Korean ever had syllables ending in *-aw. Thus, it is likely that LHan *mɑu was pronounced in pre-OK as **mo and represented pre-OK **mo, as MC [mâu] was borrowed as Sino-Korean *mo*. There is no independent evidence for LHan *-ɑu characters being read with **-u in pre-OK.

Fourth, the reflexes of this word in LMK are attested as well. They are words meaning "group", such as *mure* (무레; < *mul#e* 물에, where *mul* [물] is a noun and *e* [에] is a locative case suffix) in the *Detailed Articles on the Record of Sakyamuni* (*Sŏkposangjŏl* 釋譜詳節, 1446 CE; vol. 51: 5) and *A Vernacular Interpretation of the Sūraṁgama sūtra* (*Nŭngŏm kyŏng ŏnhae* 楞嚴經諺解, 1461 CE; vol. 9: 103), and *mul* (물) in the *Wŏrin sŏkpo* [月印釋譜, a book combining the *Songs of the Moon's Imprint on the Thousand Rivers* (*Wŏrin ch'ŏn'gang jigok* 月印千江之曲) and the *Detailed Articles on the Record of Sakyamuni* together, 1459 CE; vol. 2: 24] and the *Pak T'ongsa ŏnhae* (vol. 1: 41) (See Nam 1997). The latter *mul* (물) should have a rising tone, not a high tone in LMK, if it came from an earlier disyllabic word pre-OK or OK *mu.ra or *mo.ra.

However, in Modern Standard Seoul Korean (MSSLK), this LMK *mul* (물) remained not only as a prefix *mol-* (몰-) "to all in one place" in verbs, such as *molmol-* (몰몰-, "put something all in one place"), *molmil-* (몰밀-, "push all in one place"), *molbak-*(몰박-, "fix all in one place"), but also as a root *mol-* (몰-) in certain compounds, including *molmae* (몰매, "group beating"), *molp'yo* (몰표, "overwhelming vote"), etc. Besides, the words such as *moeho-* (뫼호-, "to gather, to accumulate") in the *Nŭngŏm kyŏng ŏnhae* (vol. 8: 118) and *moho-* (모호-, "to gather, to accumulate") in the *Translation of "Old Cathayan"* (*Nogŏldae ŏnhae* 老乞大諺解, 1670 CE; Ch'o, vol. 1: 13. See Nam 1997) have their reflexes in MSSLK: they are transitive verb *mo'ŭ-* (모으-, "to gather, to accumulate"), passive verb *mo'i-* (모이]-, "to gather, to meet, to get together") and noun *mo'im* (모임, "meeting, get-together").[14]

Regarding the Korean words meaning "crowd, throng, group", we propose that pre-OK **mu.ra and **mo.ra have coexisted as dialect differences in Paekche and Silla. Pre-OK

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[14] Besides, MSSLK words *maŭl* (마을, [ma.ul] < LMK mʌ.ɯlh < mʌ.ʌlh < mʌ.zʌlh) meaning "village" and *maŭl* (마을, [ma.ul] < LMK ma.ʌl, ma.zul < ma.zʌl) meaning "government office" should have different cognates in OK, because their consonants -z- < *-s- or *-c- and vocalism are different.

**mu.ra in Paekche might directly have reflexes in LMK *mul* as a result of the contraction between two syllables, while MSSLK *mol-* could be a substratum from pre-OK **mora in Silla by undergoing the same syllabic contraction as the formulation pre-OK **mu/o.ra > OK *mu/ol.

Therefore, according to the examples of the words "bear" and "crowd, throng, group" discussed above, we infer that the readings of *jīng* 椋 in pre-OK and OK could be reconstructed and they could have experienced similar sound changes by analogy. That is pre-OK **ku^L.ra^H and **ko^L.ra^H both existed while **u in Paekche corresponding to **o in Silla, and OK *kol^R survived as a Sillaic substratum form in Korean language history.

3. Conclusion

In this article, we conclude that the relevant data on the usage of the sinograph *jīng* 椋 have all been collected, and its origin and lexical form have been analysed and reconstructed on the basis of textual examination using various primary sources from China, Korea and Japan. *Jīng* 椋, and its variants *jīng* 庌, *jīng* 秾 and miscopied form *lüe* 掠, all originated from its radical character *jīng* 京 "warehouse, granary", and it was widely used in Koguryŏ, Paekche, Silla, and Japan. Meanwhile, the usage of *jīng* 椋 was attested in historical documents during the Koryŏ period. The lexical form of *jīng* 椋 could be demonstrated convincingly as disyllabic pre-OK **ku^L.ra^H in Paekche and **ko^L.ra^H in Silla, and monosyllabic OK *kol^R as a survived Sillaic substratum by undergoing the syllabic contraction and liquid change **-r- > *-l; that is pre-OK **ko^L.ra^H > OK *kol^R. The kun'yomi of *jīng* 椋, WOJ *kura* (ク ラ, [ku.ra]) is a well-preserved loan from either pre-OK **ku^L.ra^H or **ko^L.ra^H.

Abbreviations

LHan	= Later Han Chinese
LMK	= Late Middle Korean
MC	= Middle Chinese
MSSK	= Modern Standard Sino-Korean
MSSLK	= Modern Standard Seoul Korean
OC	= Old Chinese
OK	= Old Korean
OJ	= Old Japanese
PJ	= Proto-Japonic
pre-OK	= pre-Old Korean
WOJ	= Western Old Japanese

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