

LONG VOWELS IN PROTO-JAPANESE

The goal of this article is to provide internal and partial external evidence that Proto-Japanese had both vowel length and pitch accent. The author examines the evidence from Ryukyuan dialects of Japanese and from prehistoric Japanese loan-words in the Ainu language. This combined evidence demonstrates that the majority of Pre-Proto-Japanese words with initial vowel length may be associated with an initial low pitch. However, there are also certain words which combine initial high pitch and initial vowel length. Comparative data from Tungusic and Korean are also used.

The goal of this article is to provide internal and partial external evidence for the reconstruction of long vowels in Proto-Japanese (PJ).¹ It is widely accepted *de facto* that the oldest variety of Japanese, attested by texts of the Nara period (712–794 AD), does not demonstrate the difference between long and short vowels, and that most long vowels in different modern Japanese dialects represent the result of a later development, mostly due to loss of intervocalic consonants with the following monophthongization of two vowels: $cv_1cv_2 > cv_1v_2 > c\bar{v}$.

There are two attempts to reconstruct long vowels for PJ, one by Hattori Shirô (1978–79), the other by Samuel E. Martin (1987). Hattori proposed the reconstruction of long vowels in some words belonging to PJ accent classes 2.3, 2.4, 2.5 and also in a couple of words from PJ accent classes 2.1 and 2.2 on the basis of correspondence between primary long vowels² in Shuri and Onna dialects, both located on Okinawa island (Hattori (1979, 21–22)). However, he cites many words with inconsistent reflexes, e.g., Shuri *haai* ‘needle’ versus Onna *p'ai* ‘needle’ (Hattori (1979, 21, 104)) or Shuri *numi* ‘chisel’ versus Onna *nuumii* ‘chisel’ (Hattori (1979, 21, 105)).

Martin’s proposal is far more consistent and logical. He eliminates the pitch distinction from PJ and proposes to reconstruct PJ long vowels in place of the first low-pitched mora in accent classes 2.3 and 2.4 as well as for both first and second moras in accent class 2.5 (Martin (1987, 250–252)). If none of the Japanese dialects really preserves PJ long vowels, then this approach seems the only possible one since it provides a rational explanation for the origin of pitch accent in Japanese. Martin explains long vowels in Shuri and Onna as a result of sporadic lengthening (Martin (1987, 253)). In many cases, especially when words with long vowels in

Shuri and Onna do not coincide, it seems to be a reasonable explanation. However, one problem remains: how does one explain the cases when Shuri and Onna both exhibit long vowels in the same words? If it is possible to compile a list of such words longer than, say, four or five words, then the probability of simultaneous sporadic lengthening in two dialects will be quite low. This probability will be even lower if it is possible to extend such a list to include other dialects. The best results certainly would be obtained if there were some dialects outside Ryukyu that have long vowels in the same words.

I suggest that the four Ryukyuan dialects Shuri, Omu [oomu], Nakijin, and Onna³ preserved Proto-Okinawan (PO) vowel length in the first syllable of the words included in the following chart. It seems that there is no supporting evidence from dialects outside Ryukyu. Some of these words also have long vowels in other Ryukyuan dialects, most frequently in the Ora [oorā] dialect of Miyakojima, but their reflexes are not consistent; and in order to maintain the strictness of the comparative method, I do not include these data. Since we already have four dialects it is natural to assume that vowel length does not result from sporadic lengthening, and that it must go back to the proto-language. However, it is methodologically difficult, though not impossible, to claim that these PO long vowels go back to Proto-Ryukyuan or Proto-Japanese, because there may be cases when only one group of a language family preserved some feature lost in other groups. It is necessary to note that the data on Omu and, especially, on Onna dialects which are at my disposal are quite scarce. In most cases I tried to include data from at least three dialects. Moreover, there are also many words with long vowels in Shuri and/or Nakijin, but their counterparts in other sources are lacking. I am planning to do field work in order to fill in these gaps, so the list of fourteen words shown in Table I should be considered a preliminary one.

There is also another source which, I believe, provides evidence for PJ long vowels. There are PJ loanwords in Proto-Ainu (PA) with long vowels. I will discuss this evidence later.

COMMENTARIES TO RECONSTRUCTIONS

1. PO **paatu* B 'pigeon'. OJ *patwo* (Igarashi (1969, 115)). I propose PJ **paatwo* 3.4 instead of PJ **patwo* 2.3 'pigeon' (Martin (1987, 402)). Cf. well-known MK *pitwuli* LLH 'pigeon' (Yu (1964, 411)), Seoul *pitwulki* 'pigeon' (Martin (1967, 851)), Kyengpuk *pidilgi/pidulgi*, Kyengnam *pidalkhi*, Cennam *pida:lgi/pidu:lgi* 'pigeon' (Choy (1978, 887)) < PK **pitVl=i* LLH 'pigeon'. Notice that PK word has a low-pitched first syllable.

TABLE I

gloss	Shuri	Omu	Nakijin	Onna	Proto-Okinawan
'pigeon'	hotoo B	hotoo B	p'oootuu ¹ B	?	*paatu B
'mold'	kaabui B	?	haabui A	?	*kaabui A
'shadow'	kaagaa B	kaagi B	k'aagaa A	k'aagi B	*kaagai B
'bet'	kaakii B	?	k'aakii A	?	*kaakii B
'tortoise'	kaamii B	kaamii B	haamii B	?	*kaamii B
'spider'	kuubaa B	koobu= B	hubu C	k'uubaa B	*kuubu/*koobu C
'carp'	kuu?juu B	?	kuu?juu B	?	*kuu?juu B
'hard red soil'	niibi B	?	niibi ² B	?	*niibi B
'rainbow'	nuuzi A	noozi A	t'iNtoo-nooziri C	?	*nuuzi A
'monkey'	saaru B	saaru B	saaru C	saaru B	*saaru C
'heron'	saazi A	?	saazai A	?	*saazi A
'girdle'	?uubi B	?uubi B	hicuubi B	?	*?uubi B
'mortar'	?uusi B		?usi C	?uusu B	*?uusu C
'axe'	uuN B	uuN B	uunuu B	?	*wuunu B

¹ Aspiration in Nakijin and Onna is rendered by a sign ['] after a consonant.

² Nakijin: "sandstone".

2. PO **kaabui* A (accent class B in Shuri is irregular) 'mold'. OJ *kabiy* (Ono (1974, 319)). I propose PJ **kaanp[u/o]*=Ci 3.1 instead of PJ **kanp[u/o]*=Ci 2.1 (Martin (1987, 431)). Martin suggests the possibility that the word may be from the verb infinitive 'sprout' (Martin (1987, 431)). However, OJ *kabyi* 'sprout', though it belongs to the same accent class, shows a different vowel in the second syllable. Taking into consideration this plus the semantic difference, it is safer to assume that 'sprout' and 'mold' are not related. Moreover, we have MK *kwomphuy*=RL 'to become moldy', Early Modern Korean *kwom* 'mold' (¹Yu (1964, 72)), *kwomphuy*=LH (Nam (1960, 52)), Seoul *kwo:mphangi* 'mold' (Martin (1967, 162)), Kyengnam *koompheni*, Kyengpuk *komsagu* 'mold' (Choy (1978, 476)). The accentual data from ¹Yu (1964) and Nam (1960) are conflicting, but a long vowel in Seoul and Kyengnam supports the accentuation given in ¹Yu (1964). Thus it is possible to reconstruct PK **kwomV* LH 'mold' and compare it with PJ **kaanp[u/o]*= 'mold' (Martin (1966, 236)). Consequently, we have no need to connect 'mold' and 'sprout' in Japanese. Notice that PK word has a low-pitched first syllable.

3. PO **kaagai* B ? < C 'shadow'. OJ *kagey* 'shade', 'shadow' (Igarashi (1969, 41)). Martin reconstructs PJ **kanka*=Ci 2.5 and proposes also that **kanka*=Ci < **ka nfi* ka (Martin (1987, 432)). It seems that **ka nfi* ka is quite tentative and is not supported by any crucial internal evidence. I suggest PJ **kaanka*=Ci 3.7 'shade', 'shadow'.

4. PO **kaakii* B (Nakijin has irregular accent A) 'bet'. In the meaning 'to bet' it is attested only in MJ *kake*= (lower bigrade conjugation) < **kakey*= (Ono (1974, 282)). The word is listed in Martin (1987) within the entry for 'hang it' (Martin (1987, 702)). I am doubtful about this semantic unification of 'hang it' and 'bet' and suggest PJ **kaka*=Ci 2.3 < **kaaka*=Ci 3.4 'bet' (T *kake* 2, K 2, KA B; Hirayama (1989/1960, 123)).

5. PO **kaamii* B 'tortoise'. OJ *kamey* 'tortoise' (Igarashi (1969, 47)). Martin reconstructs PJ **kama*Ci 2.3 (Martin (1987, 435)). I suggest PJ **kaama*=Ci 3.4. Cf. MK *kepwap* LH 'tortoise' (Martin (1966, 244)). Notice that PK word has a low-pitched first syllable.

6. PO **kuubu*/**koobu* C 'spider'. Nakijin *hubu* has a short vowel. Nevertheless, the other three dialects exhibit a long one, and external evidence also points to a long vowel (see below). There is a parallel Shuri form *kubu* B 'spider' with a short vowel, but it belongs to the written language (OGJ (1963, 324, 344), Ahagon (1983, 172)). OJ *kumo* 'spider' (Igarashi (1969, 54)). Martin (1987, 463) reconstructs PJ **kunpo* < **konpo* 2.5. I suggest PJ **kuumpo* < **koompo* 3.7.

7. PO **kuu?juu* B ? < C 'carp'. OJ *kwopyi* 'carp' (Ono (1974, 511)). Marin (1987, 454) reconstructs PJ **kwopi* 2.5. Since there is *kô-rui* [wo] in the OJ word, a long vowel in PO may seem secondary, and it probably corresponds to PJ **aCu* or **uCa*. Internal reconstruction can add nothing more in this case. I suggest PJ **kaaCu*=pi 3.7 'carp' on the basis of external evidence (see below).

8. PO **niibi* B 'hard red earth'. OJ *ni* 'earth' (Igarashi (1969, 107)). Martin (1987, 496) reconstructs PJ **ni* ?1.3b 'earth', 'dirt', 'red clay', 'red', 'beautiful'. The correspondence between OJ [Ø] and Okinawan [-b-] is strange. There is a possibility that the Okinawan word is a compound with an unclear second component. However, there is no evidence to support this. I suggest PJ **nii*Ci 3.4 'earth', 'red', 'red clay'.

9. PO **noozi*/**nuuzi* A 'rainbow'. OJ evidence is only from EOJ *nozi* 'rainbow' (M 3414), thus there is no basis to decide whether we have OJ **nwozi* or **nozi*. MJ *nizi* 'rainbow' (Ono (1974, 981)). Martin (1987, 498–499) reconstructs PJ **ni(i)nsi* ?2.2a < ?3.3 'rainbow'. I believe that EOJ and Ryukyuan provide evidence for PJ non-front vowel in the first syllable and suggest PJ **noonsi* 3.3. 'rainbow'. While EOJ /u/ occurs as a reflex of OJ *iy* < **uCi* (e.g. EOJ *tuku*,⁴ OJ *tukiy* 'moon'), there is not much evidence that EOJ /o/ occurs as a reflex of PJ **oCi*. Moreover, Okinawan [u] or [o] is not a regular reflex for PJ **uCi* or **oCi*. Thus it seems unlikely that the word in question might have a trisyllabic source **noCinsi* or **nuCinsi*. MJ and T *nizi* may be accounted for by regressive vowel assimilation. Whitman (1985, 34) proposed that all OJ syllables *ni*

and *ti* contain *otsu-rui* vowels, and, thus, go back to **niy* and **tiy*. I do not intend to discuss this problem in detail here since it is not my topic, but I would like to state that in general I disagree with his theory. Internal evidence cited by Whitman shows that in several cases OJ *ti* < *tiy* and *ni* < *niy*, but this can be expected within the boundaries of the traditional theory according to which pre-OJ **tyi* and **tiy*, **nyi* and **niy* merged into OJ *ti* and *ni* respectively. The internal evidence that pre-OJ **tyi* > OJ *si* and pre-OJ **nyi* > **yi* > OJ *i*, crucial for the proof of this hypothesis, is very weak and largely speculative. It seems also that Whitman did not provide MK etymologies for OJ *si* < **tyi* and *i* < **nyi*. On the other hand, there is certain evidence from Altaic languages in favor of the traditional explanation of *iy* and *yi* merging after coronals. I will provide several examples supporting OJ *ti* < **tyi* and *ni* < **nyi*: PAL **t^hi* ‘blood’ > WM *cisun* ‘blood’ < PM **ti=sun*, OJ *ti* ‘blood’ < PJ **ti* 1.1 (Martin (1987, 545)); PAL **djaka-* ‘be close’ > PT **yak=* ‘be close’, PJ **iika=* B ‘be close’ (Martin (1987, 842)); PAL **nim[aj]=* ‘to boil’ > PMT **nim=* ‘to boil’ (SSTM (1975, 593)), PJ **niCa=* A ‘to boil’ (Martin (1987, 736)); PAL **ni[r/ŋ]ki=* > PMT **ni[r/ŋ]ki=* ‘to make noise’ (SSTM (1975, 599)), PJ **nigyi-yaka* < **ni(n)ki-da-ka* 4.11 ‘lively’, ‘bustling’ (Martin (1987, 496)).

10. PO **saaru* C ‘monkey’. MJ *saru* LH ‘monkey’ (Ono (1974, 578)). Martin reconstructs PJ **saru* 2.5 ‘monkey’. I suggest PJ **saaru* 3.7 ‘monkey’.

11. PO **saazi* A ‘heron’. MJ *sagi* ‘heron’ (Ono (1974, 545)). Martin (1987, 515) reconstructs **sagyi* < **sanki* 2.1 ‘heron’ on the basis of Shuri palatalization. I suggest PJ **saanki* 3.1. Cf. MK *say* R ‘bird’ (Martin (1966, 226)) < PK **saCi* LH, though the semantics and correspondences between PJ **-nk-* and PK **-C-* may be problematic. Notice that PK word has a low-pitched first syllable.

12. PO **ʔuubi* B ? < C ‘girdle’. OJ *myi=obyi* ‘girdle’ (Igarashi (1969, 133)). Martin (1987, 503) reconstructs PJ **onp[a-C]i* 2.4 ‘girdle’. I suggest PJ **oonp[=C]i*⁵ 3.5 ‘girdle’.

13. PO **ʔuusu* C ‘mortar’. Though Nakijin has *ʔusi* with a short vowel, I still decided to include this word in the list, mainly on the basis of Ainu evidence cited below. OJ *usu* ‘mortar’ (Igarashi (1969, 25)). Martin (1987, 564) reconstructs. PJ **usu* 2.4 ‘mortar’. PA has **niisu* HLL ‘mortar’ (Vovin 1992 forthcoming), which I believe comes from PA **nii* ‘tree’ + **uusu* ‘mortar’ (< PJ **uusu*). If the PA form of this compound were **nii=usu* or **ni=usu*, we would now have in Hokkaidō dialects the form **niwsu* HL instead of *nisu* HL, and in Sakhalin dialects **niwsu* instead of *niisu*. I suggest PJ **uusu* 3.5 ‘mortar’.

14. PO **wuunu* B 'axe'. Ono (1974, 2421) cites OJ *wono*, but gives an example from M 3232, where this word is written ideographically. Thus there is no evidence showing whether this word in OJ was *wono* or *wonwo*. Martin (1987, 507) reconstructs PJ **bono* 2.3. He supposes also that this word may be a compound < **bo-* 'small' + **na* 'blade'. However, there is not enough evidence for hypothetical PJ **na* 'blade' (reconstructed on the basis of *-na* in *katana* 'small sword', 'knife' and *kana* 'plane' by Martin (1987, 490)). Moreover, the nature of the second vowel in OJ *wono* is unclear: it may go back to *wo* < **uCa*. I suggest PJ **boon[o/wo]* 3.4 'axe'.

There are only fourteen words in the above list. I can also add four words where vowel length is testified by PJ loanwords in PA:⁶

1. PA **kaani* HHH 'metal' (Vovin (1992) forthcoming, 137)). Martin (1987, 437) reconstructs PJ **kana=Ci* 2.1 'metal'. I suggest PJ **kaana=Ci* 3.1 'metal'.

2. PA **paakari* HLLL 'to measure', 'to weigh' (Vovin (1992) forthcoming, 171)). Martin (1987, 683) reconstructs PJ **paka* 2.3=*ra*= 'to measure', 'to calculate'. I suggest PJ **paaka* 3.4=*ra*= 'to measure', 'to weigh'.

3. PA **tuuki* HLL 'sake cup' (Vovin (1992 forthcoming, 207)). Martin (1987, 554) reconstructs PJ **tuki* 2.2b 'cup'. I suggest PJ **tuuki* 3.3 'cup'.

4. PA **tuuti* LLH 'large wooden hammer' (Vovin (1992 forthcoming, 208)). Martin (1987, 557) reconstructs PJ **tutifyj* < **tutu=Ci* 2.4 ? < 3.5 'hammer'. I suggest PJ **tuutu=Ci* 3.5 'hammer'. The Ainu word is probably a loanword from early EOJ, which as we know lost the contrast between *kô-* and *otsu-rui* vowels before eighth century.

Following Hattori (1967) I reconstruct PA vowel length according to the Sakhalin Ainu data, since it is not preserved in any Hokkaido dialects. The distinctive vowel length for PA can be reconstructed only in first syllables.⁷ In several cases the reconstruction of vowel length is also supported by Kuril Ainu data, which preserve it occasionally (Vovin (1992 forthcoming)).

One can doubt whether PJ loanwords in PA would preserve original vowel length. However, the examples above also show that PA accent of these loanwords coincides with PJ accent as reconstructed in Martin (1987). It would be a linguistic miracle if both vowel length and pitch accent in PJ loanwords in PA happened to be the same as in PJ due to simple coincidence.

We get the following distribution of these words by PJ accent classes:

	3.1	3.3	3.4	3.5	3.7
total: 18	3	2	5	3	5

The combined evidence comprises only eighteen words, which constitutes less than one percent of the PJ vocabulary reconstructed in Martin (1987). This fact obviously endangers the proposed reconstructions of words with long vowels. However, I prefer to propose the following solution. There are cases when it is impossible to solve a problem exclusively by means of internal reconstruction. I believe that Martin is right in a broad sense: the majority of pre-PJ long vowels are probably hidden under low-pitched syllables. Meanwhile, Hattori is right in a narrow sense: there is internal evidence allowing us, in a limited number of cases, to reconstruct long vowels without reference to pitch distinctions. Thirteen of the proposed reconstructions with long vowels are in low register (accent classes 3.4, 3.5, and 3.7). Low pitch is certainly a good phonetic condition for vowel length to be preserved. However, five of the reconstructions with long vowels are in high register (accent classes 3.1 and 3.3). I believe that it is not necessary to eliminate pitch distinctions in PJ. It may have had pitch distinctions as well as vowel length, since one does not necessarily preclude the other. I would say that PJ lost most of its long vowels; at least, internal reconstruction provides evidence only for a few of them. If we look for pre-PJ long vowels, the majority of them are probably hidden in words belonging to PJ low register accent classes. However, some long vowels, as the above evidence shows, might also be hidden in PJ high register accent classes.

In order to support my reconstructions, I provide below additional external evidence for two of the reconstructed words with long vowels, based on comparisons with Proto-Manchu-Tungus, where it is also possible to reconstruct long vowels (Tsintsius (1949, 95–109)). This is a different kind of external evidence from previously cited Ainu data, since it relies not on loanwords but on data from genetically related Altaic languages.⁸

PJ **kuumpo*/**koompo* 3.7 ‘spider’. Cf. PMT **kææm[p]V* ‘water spider’; Ewenki *keem=kaan* ‘crayfish’, Ewen *qææm=qaar* ‘water spider’,⁹ Oroch *kææpi* ‘tick’ (SSTM (1975, 388)). Notice that the well-known parallel to this Japanese word, MK *kemuy* LH ‘spider’ (‘Yu (1964, 41)), has a low-pitched first syllable.

PJ **kwopi* 2.5 < **kaaCu=pi* 3.7 ‘carp’. I suggest PJ **kaaCu=pi* 3.7 exclusively on the basis of external comparison with PMT **xaangu* ‘crucian carp’; Neghidal *xangu*, Oroch *xaangu*, Ulchi *xangu*, Nanai *xango* (SSTM (1975, 462)), because internal reconstruction is unable to show further progress here. Proto-Altaic (PAL) **ŋ/g/* is preserved in PMT, but not in PJ: PAL **bango* ‘main’, ‘foremost’, ‘prominent’ > PMT **bongo* ‘first’, ‘main’, ‘foremost’, ‘forward’ (SSTM (1975, 94)), PJ **pwo* ‘prominent one/thing’ (Martin (1987, 402)) < **paCu*; PAL **tuŋña* ‘horn’ > PMT

(Ewen)¹⁰ **taŋña* ‘horn’ (SSTM (1977, 163)), PJ **tunwo* ‘horn’ (Martin (1987, 556)) < **tuna=Cu*; PAL **ŋinV* ‘dog’ > PMT **gina-* ‘dog’ (SSTM (1975, 661)), PJ **inu* ‘dog’ (Martin (1987, 425)).

Japanese-Korean comparative evidence may be combined with Japanese-Tungusic comparative evidence in Table II:

TABLE II

	PJ	PK	PMT
‘pigeon’	*paatwo 3.4	*pitVI= LL	—
‘mold’	*kaanp[u/ɔ]= 3.1	*kwomV LH	—
‘tortoise’	*kaama= 3.4	*kepwup LH	—
‘spider’	*koompo 3.7	*kemu= LH	*kææm[p]i
‘carp’	*kaaCu=pi 3.7	—	*xaangu
‘heron’	*saanki 3.1	*saCi LH ‘bird’	—

I would like to make the following hypothetical conclusions on the basis of this chart:

1) There is a probable correspondence between long vowels in PJ and PMT. However, before more Ryukyuan data are obtained it is difficult to find further evidence to allow more PO reconstructions with long vowels.

2) It seems that vowel length, but not the L pitch in PJ, corresponds to L pitch in PK, since we have two PJ words belonging to class 3.1. I believe that this possibility deserves further investigation.

3) It is easy to notice that the vowel correspondences in the chart above are far from ideal, with the exception of the last two examples. Is it possible that vowel length in these cases is due to some mysterious “laryngeals”? Or should we have to reconstruct diphthongs?

All these are questions to be answered by future research.

NOTES

¹ The following abbreviations are used in this article:

- A Tonic accent in Shuri, all-high in Nakijin
- B Atonic accent in Shuri, low-high in Nakijin
- C High-low accent in Nakijin
- EOJ Eastern Old Japanese
- H High pitch
- K Kyôto dialect
- KA Kagoshima dialect

L	Low pitch
M	“Man’yôshû”
MJ	Middle Japanese
MK	Middle Korean
OGJ	Okinawa go jiten
OJ	Old Japanese
PA	Proto-Ainu
PAL	Proto-Altaiic
PJ	Proto-Japanese
PK	Proto-Korean
PM	Proto-Mongolian
PMT	Proto-Manchu-Tungus
PO	Proto-Okinawan
PT	Proto-Turkic
R	Rising pitch
SSTM	Comparative dictionary of Manchu-Tungus languages
T	Tôkyô standard Japanese
WM	Written Mongolian

² By primary long vowels I mean the vowels which can not be explained as a result of different contractions typical to Shuri and other Ryukyuan dialects.

³ Shuri data are cited according to the OGJ (1963); Omu data according to Hirayama (1967), and Nakijin data according to Nakasone (1983). Onna data are borrowed from Hattori (1978–79).

⁴ It may be that the EOJ form just did not have the suffix =*ci*, which together with the stem-final =*u* yielded =*iy* in the OJ form.

⁵ Martin reconstructs inherent vowel *-a* after all consonant stems Martin (1987, 668). I disagree with this point of view for several reasons, and prefer to reconstruct pure consonantal stems.

⁶ PA reconstructed in Vovin (1992 forthcoming) on the basis of modern dialects and historical sources must be younger than PJ at least for five hundred years. This means that PJ loanwords in PA actually may go back not to PJ proper, but to late PJ or even early OJ spoken in North-Eastern Japan.

⁷ Sakhalin Ainu also has vowel length in non-initial syllables, but these are limited to cases where prefixes precede a stem with a long vowel, e.g.: Sakhalin *emiina*, Hokkaido *mina* “to laugh” < PA **E-miina*.

⁸ I am a supporter of the Altaic theory in its broad sense and believe that not only Manchu-Tungus, Mongolian, and Turkic but also Japanese and Korean are related and constitute a linguistic family.

⁹ SSTM gives for the Ewen entry the meaning “water insect’s name”. Personal communication with Ewen speakers revealed that it is a name for a water spider.

¹⁰ Because Ewen occupies quite a peculiar position within Tungusic I consider that a well-attested Ewen word may go back to PMT.

REFERENCES

- Ahagon, Chôshô (1983) *Ryûka kogo jiten* [A Dictionary of Old Language of Ryukyuan Songs], Naha shuppansha, Naha.
- Choy, Hakkun (1978) *Hankwuk pangen sacen* [A Dictionary of Korean Dialects], Hyenmunsa, Seoul.
- Hattori, Shirô (1967) “Ainu go no on’in kôzô to akusento [Phonological Structure and Accent of Ainu].” *Onsei Kenkyû* 13, 207–223.

- Hattori, Shirô (1978—79) "Nihon sogo ni tsuite [About Proto-Japanese]," 1—22. *Gengo*.
- Hirayama, Teruo (1967) *Ryūkyū Sakishima hōgen no sōgōteki kenkyū* [A Comprehensive Study of Southern Ryukyuan Dialects], Meiji Shoin, Tōkyō.
- Hirayama, Teuro (1989/1960) *Zenkoku akusento jiten* [A Dictionary of Pitch Accents in All Dialects], Tōkyōtō shuppan, Tōkyō.
- Igarashi, Jin'ichi (1969) *Jōdai kanazukai jiten* [A Dictionary of Old Japanese Spelling], Shōgakkan, Tōkyō.
- Yu, Changton (1964) *Ico e sacen* [A Dictionary of the Korean Language During Li Dynasty Period], Yensey tayhakkyo chwulphanpu, Seoul.
- Martin, Samuel Elmo (1966) "Lexical Evidence Relating Korean to Japanese," *Language* 42, 185—251.
- Martin, Samuel Elmo, Lee, Yang-ha, Chang, Sung-un (1967) *A Korean-English Dictionary*, Yale University Press, New Haven and London.
- Martin, Samuel Elmo (1987) *The Japanese Language through Time*, Yale University Press, New Haven and London.
- Nakasone, Seizen (1983) *Okinawa Nakijin hōgen jiten* [A Dictionary of the Nakijin Dialect on Okinawa], Kadokawa, Tōkyō.
- Nam, Kwangwu (1960) *Ko e sacen* [A Dictionary of the Middle Korean Language], Thap chwulphansa, Seoul.
- OGJ (1963) *Okinawa go jiten* [A Dictionary of the Okinawan Language], Okurashō insatsukyoku, Tōkyō.
- Ono, Susumu (1974) *Kogo jiten* [A Dictionary of Classical Japanese], Iwanami, Tōkyō.
- SSTM (1975) *Sravnitel'nyi slovar' tunguso-manchzhurskikh iazykov, tom I* [A Comparative Dictionary of the Manchu-Tungus Languages, Vol. 1], Nauka, Leningrad.
- SSTM (1977) *Sravnitel'nyi slovar' tunguso-manchzhurskikh iazykov, tom II* [A Comparative Dictionary of the Manchu-Tungus Languages, Vol. 1], Nauka, Leningrad.
- Tsintsius, Vera (1949) *Sravnitel'naia fonetika tunguso-man'chzhurskikh iazykov* [A Comparative Phonetics of the Manchu-Tungus Languages], Uchpedgiz, Leningrad.
- Vovin, Alexander (1992 forthcoming) *A Reconstruction of Proto-Ainu*, ms., to be published by E. J. Brill, Leiden.
- Whitman, John Bradford (1985) *The Phonological Basis For the Comparison of Japanese and Korean*, PhD dissertation, Harvard.

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