The Phonemes of the Kikaijima Dialects

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1 Introduction

The dialects on Kikaijima are made up of those from the northern and southern areas, and these two areas have quite different characteristics. For example, the northern dialects have seven vowels (/i/, /ï/, /u/, /e/, /ë/, /o/, and /a/), while the southern dialects have five (/i/, /u/, /e/, /o/, and /a/). Moreover, *hana* '*flower*' is pronounced as [pana] (or [ɸana]) and [hana] in the northern and southern dialects respectively. Considering the difference, Nakamoto and Nakamatsu (1984) define Northern Kikaijima as a Northern Amami dialect, along with the Amamiōshima and Tokunoshima dialects, and Southern Kikaijima as a Southern Amami dialect, along with the Okinoerabujima and Yoronjima dialects.

This section provides a broad overview of the phonemes and phonetics of nine sites (Onotsu, Shitōke, Shiomichi, Aden, Kamikatetsu, Sakamine, Wan, Nakasato, and Araki) based on the research data of these Kikaijima dialects, taken from elicitation in September 2010.

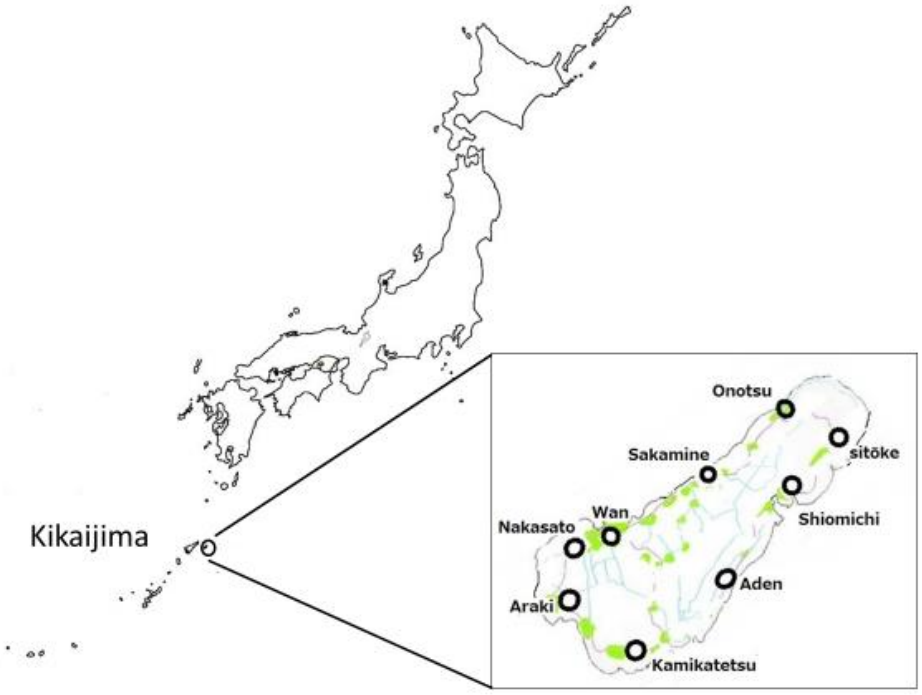


Figure 1 Map of Kikaijima island

2 About the Notation

In this paper we will look at the phonemic characteristics, with examples, of the Kikaijima dialects, but first the notation used will be defined here. The data are described using the International Phonetic Alphabet (IPA).

The following are important points. The details and variations of each sound as well as the phonological interpretation are explained in each section.

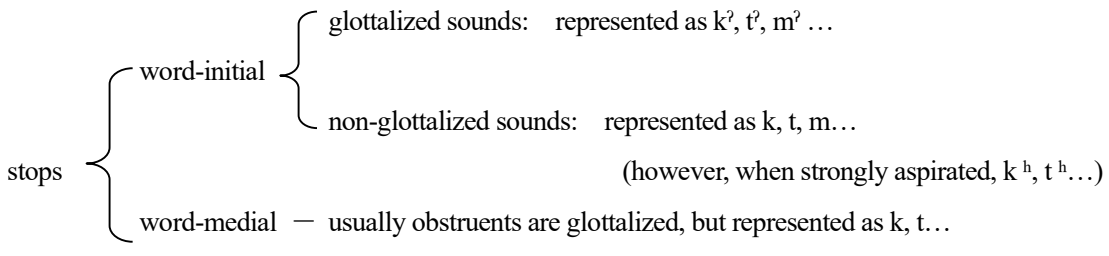
[1] Conventionally, the vowels of Kikaijima dialect are described as [i], [ï], [u], [e], [ë], [o], and [a], but [ɪ] is used instead of [ï] in this paper. This is because central vowels in words like '*eye*', '*hand*', and '*root*', are not really "central", so we consider the sound to be the lax vowel [ɪ].

[2] When vowels come at the beginning of a word, a glottal stop usually appears immediately before them. This is represented as [ʔ] (e.g. [ʔa], [ʔi]). However, glottal stops might be only weakly pronounced at the beginning of a word. In this case, the vowels are represented as [a] or [i], where [ʔ] is omitted.

[3] Obstruents (stops and affricates) in word-initial position are either glottalized (unaspirated) or non-glottalized (aspirated). Nasals such as [m] may also be glottalized. Glottalization is represented with the auxiliary symbol [ˀ] to the upper right of consonants (e.g. [kˀ], [tˀ], or [mˀ]), while non-glottalization is represented without the symbol (i.e. [k], [t], or [m]). Since non-glottalization is accompanied by a degree of aspiration, some researchers use the auxiliary symbol [ʰ], but it is complicating to write all non-glottalized obstruents with [ʰ]. As non-glottalization can be distinguished from glottalization, by the presence or absence of [ˀ], non-glottalization will be represented without [ʰ] and the symbol [ʰ] is added to the upper right (e.g. [kʰ] and [tʰ]) only when aspiration is strong.

[4] Word-medially, there is no distinction between glottalized and non-glottalized consonants, and usually only the glottalized versions are used. Therefore, although the auxiliary symbol [ˀ] should be added to any stops in the middle of a word, this symbol is omitted in order to avoid complication. The auxiliary symbol is added only when glottalization is strong. As a result, stops in the middle of a word are represented with or without the symbol, but they are not phonologically distinctive.

[3] and [4] are summarized in the following figure.



[5] The following symbols are used to represent the tone contours: "[" (rise in pitch), and "]" (fall in pitch). Additionally, the following notations are used when we get no answers or multiple answers.

[6] "—" indicates an item which was not asked due to lack of time, while "NR" indicates an item which was asked but not answered.

[7] When we get multiple answers or variations in the word form, word forms are separated by " / " when they are taken from the same speaker, and by " // " when they come from different speakers. In case of a regional difference, forms are separated with ",".

[8] Item numbers of examples are the same as those of the "Basic Vocabulary 1" in the materials. As for the examples taken from "Basic Vocabulary 2", "2-" is added to the front of the number (e.g. 2-11).

3 Kikaijima Dialect Vowels

3.1 Earlier Research

In previous research it is noted that Northern Kikaijima has 6 or 7 vowels, and South Kikaijima has 5 vowels. According to Nakamoto (1976), this vowel system was formed as follows: first, Nakamoto (1976) explains that the vowel system in Ryukyu dialects originally had 5 vowels (*i, *u, *e, *o, and *a). Then, the vowel sequence [au] merged to become [ɔ:], which triggered the change [o] > [u]. In parallel to this, the front vowel sequence [ai] merged into [ɛ:], which triggered the change [e] > [ë] > [ï]. Subsequently, [ɔ:] and [ɛ:] become established as [o:] and [e:] so that six vowel system ([i], [ï], [u], [e], [o], and [a]) is s formed. Additionally, in the Northern Amami dialects the vowel sequence [ae] changed to [ë] resulting in the seven vowel system. Later, in Southern Amami the central vowels were lost: [ï] and [ë] merged into [i] and [e] respectively, and thus the five vowel system ([i], [u], [e], [o], and [a]) was formed (see Figure 1).

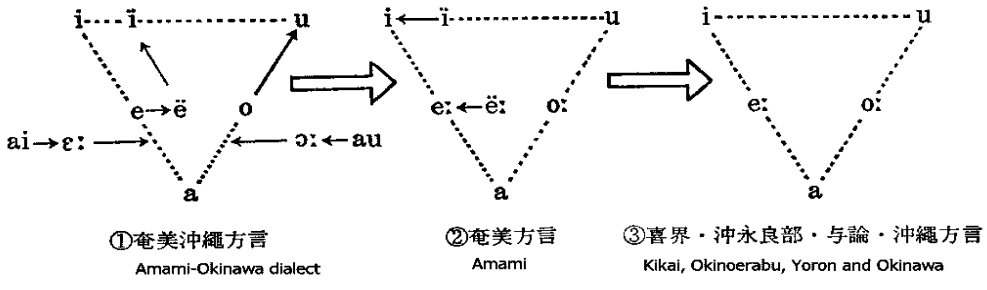


Figure2 Vowel changes in Amami/Okinawa dialects (from Nakamoto 1976)

3.2 Characteristics of Vowels

The number of vowels is respectively 7 and 5 in Northern and Southern Kikaijima. But, as explained in section 2, central vowels in '*eye*', '*hand*', and '*root*' are not really "central". Therefore, [ɪ] is used to represent this sound. Moreover, even in the same area, pronunciation of vowels might depend on the immediately preceding consonant. The following describes the different kinds of vowels ((1) high vowels, (2) mid vowels, (3) low vowels), comparing the vowels of the nine sites.

(1) High Vowels

Three high vowels ([i], [ɪ], and [u]) are reported in the Northern Kikaijima dialects of Onotsu and Shitōke, while elsewhere has only two ([i] and [u]). First, words which have [i] in both Northern and Southern dialects are listed in Tables 1.1 - 1.5.

[i], listed here, corresponds to / i / in the Tokyo dialect. However, Shitōke has variation where [ɪ] appears after the bilabial [m], such as in '*fruit*' and '*net*' in Table 1.1. Also, [i] in '*sweat*' and '*wind*' in Table 1.5 corresponds to / e / in the Tokyo dialect (shaded part).

Table 1.1 [i]

number / word / point	7	6	101	118	162	131	177
	sun	*fruit*	*ear*	*net*	*miso*	*wave*	*sea*
Onotsu	[pi	[mi]:	mi[mi	a[mi	mi[su	na[mi	ʔu[mi
Shitōke	ti[da	[mɪ]:	mi[mi	ʔa[mɪ	mi[su	na[mi	[ʔu]mi
Shiomichi	[ti]da	mi[:	mi[mi	a[mi	mi[su	na[mi	[ʔu]mi
Sakamine	[pi]:	[mi]:	mi[mi	ʔa[mi	mi[su	na[mi	[ʔu]mi
Aden	[ti]da	mi[:	mi[mi	a[mi	mi[su	na[mi	[ʔu]mi
Kamikatetsu	çi	na[ɾi	mi[mi	ʔa[mi	mi[su	na[mi	[ʔu]mi
Wan	--	mi[:	mi[mi	ʔa[mi	mi[su	na[mi	[ʔu]mi
Nakasato	çi[: / [çi]:	mi[:	mi[mi	ʔa[mi	mi[su	na[mi	[ʔu]mi
Araki	çi[:	mi[:	mi[mi	a[mi	mi[su	na[mi	[u]mi

Table 1.2 [i]

number / word / point	83	48	199	2	66	76
	paper	*neck*	*Japanese sock*	*blood*	*road*	*bee*
Onotsu	[ha]bi	[nu]bu[i	ta[bi	[tɕʔi]:	[mi]tɕi	[pa]tɕi
Shitōke	ha[bi	[kʲu]bi	[ta]bi	[tɕi]: / [tɕi:	[mi]tɕi	[pa]tɕi
Shiomichi	ha[bi	kʲu[bi	[ta]bi	tɕʔi[:	mi[tɕi	pa[tɕi

Sakamine	ha[bi	kˀu[bi	[ta]bi	tɕi[:	--	--
Aden	ha[bi	nu[bi]:	[ta]bi	tɕi[:	mi[tɕi	pʰa[tɕi
Kamikatetsu	ha[bi	kˀu[bi	[tʰa]bi	tɕi[:	mi[tɕi	[ha]tɕi[:
Wan	--	kˀu[bi	[tʰa]bi	tɕˀi[:	mi[tɕi	--
Nakasato	ha[bi	kˀu[bi	[tʰa]bi	tɕˀi[:	mi[tɕi	[ha]tɕi[:
Araki	ha[bi	kˀu[bi	ta[bi	tɕi[:	mi[tɕi	[ha]tɕi[:

Table 1.3 [i]

number / word / point	16	36	153	38	64
	load	*crab*	*goblin*	*ant*	*nail*
Onotsu	[nʲi]mu[tsu	ga[nʲi]:	ʔu[nʲi	[a]:[nʲi]:	[kˀu]nʲi
Shitōke	nʲi[:	ga[nʲi]:	[ʔu]nʲi	[ʔa]:[nʲi]:	kˀu[nʲi
Shiomichi	nʲi [:	ga[nʲi]:	ʔu[nʲi	[a]:[nʲi]:	kˀu[nʲi
Sakamine	nʲi[:	ga[nʲi]:	ʔu[nʲi	[ʔa]:[nʲi]:	kˀu[nʲi
Aden	--	[gai]ɴ	u[nʲi	[a]:[ĭ]:	kˀu[gi
Kamikatetsu	nʲi[:	ga[i]:	ʔu[nʲi	ʔa[i	kˀu[gi
Wan	nʲi[: / nʲi[mu]tu	ga[nʲi]:	o[nʲi	ʔa[nʲi	--
Nakasato	nʲi[:	ga[nʲi]:	ʔu[nʲi	a[nʲi	kˀu[nʲi
Araki	nʲi[:	ga[nʲi]:	o[nʲi	a[nʲi	ku[gi / ku[ŋi

Table 1.4 [i]

number / word / point	49	125	32	252
	wound	*time*	*right*	*rabbit*
Onotsu	[kˀi]zu	[tu]ki	nʲi[nʲi]:	[u]sa[gi
Shitōke	[kˀi]zu	tu[ki	[mi]ŋi	[ʔu]sa[ŋi
Shiomichi	kˀi[zu	NR	[mi]gi	u[sa]gi
Sakamine	kˀi[ʣu	tʰu[ki	[mi]gi	--
Aden	tɕi[du	tu[ki	[mi]gi	ʔu[sa]gi
Kamikatetsu	tɕi[du	[du]tɕi[:	[mi]gi	ʔu[sa]gi
Wan	tɕi[du	NR	[mi]gi	u[sa]gi
Nakasato	tɕi[zu	--	mi[gi	[ʔusagi
Araki	ki[zu	tu[ki	mi[gi	u[sa]gi

Table 1.5 [i]

number / word / point	161	31	197	96	75
	soup	*lower back*	*sweat*	*elbow*	*wind*
Onotsu	ɕi[ɾu	[hu]ɕi	a[ɕi	[pi]ʑi / [ɸi]ʑi	[ha]ʑi
Shitōke	ɕi[ɾu	[hu]ɕi	ʔa[ɕi	pi[ʑi	[ha]ʑi

Shiomichi	ɕi[ɾu	hu[ɕi	a[ɕi	pi[ʑi	ha[di
Sakamine	ɕi[ɾu	hu[ɕi	ʔa[ɕi	pi[ʤi	--
Aden	ɕi[ɾu	hu[ɕi	ʔa[ɕi	çi[ʑi	ha[di
Kamikatetsu	ɕi[ɾu	[ɸu]ɕi	ʔa[ɕi	çi[ʑi	ha[di
Wan	ɕi[ɾu	hu[ɕi	ʔa[ɕi	çi[ʑi	--
Nakasato	ɕi[ɾu	ɸu[ɕi / hu[ɕi	ʔa[se	çi[ʑi	ha[di
Araki	ɕi[ɾu	ɸu[ɕi	a[ɕi	çi[ʑi	ha[ʑi

Next words which have [ɪ] in Onotsu and Shitōke in Northern Kikaijima, but [i] in the other areas, are listed.

Table 2.1 [ɪ, i]

number / word / point	14	12	203	114	122
	fart	*eye*	*rain*	*bean*	*jar*
Onotsu	pɪ[: / ɸɪ[:	mɪ[:	a[mɪ	ma[mɪ	ha[mɪ
Shitōke	pɪ[:	mɪ[:	ʔa[mɪ	ma[mɪ	ha[mɪ
Shiomichi	pi[:	mi[:	a[mi	ma[mi	[ha]mi
Sakamine	ɸi[:	mi[:	ʔa[mi	ma[mi	[ha]mi
Aden	pi[: / ɸi[:	mi[:	a[mi	ma[mi	[ha]mi
Kamikatetsu	çi[:	mi[:	ʔa[mi	ma[mi	ha[mi
Wan	çi[:	mi[:	ʔa[mi	ma[mi	[ha]mi
Nakasato	çi[:	mi[:	ʔa[mi	ma[mi / ma[mɪ	[ha]mi
Araki	çi[:	mi[:	a[mi	ma[mi / ma[me	[ha]mi

Table 2.2 [ɪ, i]

number / word / point	11	233	73	259	247	148
	hand	*front*	*brush*	*centipede*	*compassion*	*injury*
Onotsu	tɪ[:	[u]mu[tɪ	pu[di	[mu]ka[ʑi	[na]sa[kɪ	kɪ[ga
Shitōke	tɪ[:	[u]mu[tɪ	[ɸu]dɪ	[mu]ka[dɪ	[na]sa[kɪ	kɪ[ga
Shiomichi	ti[:	[u]mu[ti	pu[di / ɸu[di	mu[ka]di	na[sa]ki	ki[ga
Sakamine	ti[:	[ʔu]mu[ti	--	nu[ka]de	--	kɪ[ga
Aden	ti[:	[ʔu]mu[ti	ɸu[di	[a]mi[da]:	NR	--
Kamikatetsu	ti[:	[ʔu]mu[ti	ɸu[di	mu[ka]de	na[sa]ki	kʰi[ga
Wan	tʰi[:	[ʔu]mu[ti	ɸu[de	mu[ka]di	NR	--
Nakasato	tʰi[:	[ʔu]mu[ti	ɸu[di	[mu]ka[di	--	ki[ga / kɪ[ga
Araki	ti[:	[u]mu[ti	ɸu[di	mu[ka]de	--	ke[ga

Table 2.3 [ɪ, i]

number / word / point	24	89	102	105	165	188
	root	*chest*	*bone*	*shin*	*boat*	*seed*
Onotsu	nɪ[:	[mu]nɪ	pu[nɪ / ɸu[nɪ	su[nɪ	pu[nɪ	ta[nɪ
Shitōke	nɪ[:	[mu]nɪ	pu[nɪ]:	su[nɪ	ɸu[nɪ	ta[nɪ
Shiomichi	[hiɴ] pi[nʲi]:	mu[ni	ɸu[ni]:	[muke]zu[ne	[ɸu]ni	ta[ni
Sakamine	ni[: / [mu]tu	mu[ni	[pʰu]ni	[su]ni	[pʰu]ni	tʰa[ni
Aden	ni[:	mu[ni	ɸu[ni	su[ni	[ɸu]ni	ta[ni
Kamikatetsu	[ni]mu[tu	mu[ni	[ɸu]ni	su[ni	ɸu[ni	tʰa[ni
Wan	nɪ[:	mu[nɪ	[ɸu]nɪ	su[ne	[ɸu]nɪ	tʰa[nɪ
Nakasato	nɪmutu	mu[nɪ	[ɸu]nɪ	su[nɪ	[ɸu]nɪ	ta[nɪ
Araki	mu[tu	mu[ne	[ɸu]nɪ	su[ne	[ɸu]nɪ	ta[ne

[ɪ] in Onotsu and Shitōke corresponds to / e / in the Tokyo dialect. As explained above, the vowel is often written as [ɨ] in earlier reports, but [ɪ] in Kikaijima dialect is not really central. This vowel is a lax vowel [ɪ], while [i] in Tables 1.1 - 1.5 is a tensed vowel. From the words surveyed in our fieldwork, the following words can be given as minimal pairs ([i] and [ɪ]) in the Onotsu dialect:

mi: '*fruit*' : mɪ: '*eye*'
ami '*net*' : amɪ '*rain*'
pi '*day*' : pɪ: '*fart*'
(there is a difference between short and long vowels)

As for Shitōke, the front high vowel becomes [ɪ] when it follows [m], as explained above, so it is difficult to find minimal pairs. Instead, we can list pairs like the following:

pɪ: '*fart*' : piɾu '*daytime*'
ʔumi '*sea*' : ʔamɪ '*rain*'
nami '*wave*' : mamɪ '*bean*'

In Shiomichi, Aden, Kamikatetsu, and Sakamine (Central Kikaijima), [ɪ] is rare, and what is pronounced in Onotsu and Shitōke as [i] and [ɪ] is pronounced as [i]. Therefore, Tokyo Japanese *mi* and *me* (and *ami* and *ame*) become homophones and are not distinguished.

			'*net*'	'*rain*'
Onotsu, Shitōke	i	ɪ	ʔami	ʔamɪ
Shiomichi, Aden, Kamikatetsu, and Sakamine	i	i	ʔami	ʔami

[i] in Nakasato (Southern Kikaijima) corresponds to [i] in Onotsu and Shitōke, and [ɪ] corresponds to [i] or [ɪ]. Like '*bean*' in Table 2.1 and '*injury*' in Table 2.2, the same words are pronounced with both [i] and [ɪ], so [i] and [ɪ] in 'bean' and '*injury*' should be considered as variants, and the two vowels do not contrast phonemically. On the other hand, [i] in words like '*net*' is very stable in Nakasato and does not have a variant [ɪ]. Therefore, there are two variations in Nakasato: either stable [i], or variable [i] and [ɪ]. However, after the consonant [n] only [ɪ] shows up (e.g. '*chest*', '*bone*', '*shin*', '*ship*', and '*seed*'). This will be explained later in this section.

			'*net*'	'*bean*'	'*ship*'
Onotsu	i	ɪ	ami	mamɪ	punɪ
Nakasato	i	i / ɪ	ʔami	mami / mamɪ	ɸunɪ

[ɪ] in Onotsu and Shitōke is pronounced as [i] or [e] in Wan and Araki (Central Kikaijima). [e] might be due to the influence of Standard Japanese, but the sound is not found in the other villages, so we can consider this as a special feature of Wan and Araki. Also, [ɪ] appears when it immediately follows [n]. [ɪ] after [n] will be explained later in this chapter, along with [ɪ] in Nakasato.

			'*net*'	'*bean*'	'*ship*'
Onotsu	i	ɪ	ami	mamɪ	punɪ
Araki	i	i / ɪ / e	ami	mami / mame	ɸunɪ

The front high vowels in the Kikaijima dialects are summarized as follows:

		'*net*'	'*bean*'	'*ship*'
Tokyo	i e	ami	mame	ɸune
Onotsu, Shitōke	i ɪ	ami	mamɪ	ɸunɪ
Shiomichi, Aden, Kamikatetsu, Sakamine	i i	ʔami	mami	ɸuni
Nakasato	i i / ɪ	ʔami	mami / mamɪ	ɸunɪ
Wan, Araki	i i / ɪ / e	ami	mami / mame	ɸunɪ

Let us move on to [i] and [ɪ] after the consonant [n]. As explained above, [ɪ] in Onotsu and Shitōke appears as [i] ~ [ɪ] in Nakasato, and as [i] ~ [e] in Wan and Araki, but only [ɪ] appears after [n] in Nakasato, Wan, and Araki. Therefore, as in Onotsu and Shitōke, we can consider that both [i] and [ɪ] appear after [n], in Nakasato, Wan, and Araki.

	'*load*'	'*crab*'	'*goblin*'	'*root*'	'*chest*'	'*ship*'
Onotsu	nʲinutsu	ganʲi:	ʔunʲi :	nɪ:	munɪ	punɪ
Nakasato	nʲi:	ganʲi:	ʔunʲi :	nɪ mutu	munɪ	ɸunɪ

Wan	nʲi:	ganʲi:	onʲi	:	nɪ:	munɪ	ɸunɪ
Araki	nʲi:	ganʲi:	onʲi	:	(mutu)	mune	ɸunɪ

The consonant [n] before the vowel [i] is palatalized and becomes [nʲ] in all the dialects. Therefore, [nʲi] and [nɪ] are distinguished, not only by the difference in vowel quality, but also by the presence or absence of palatalization on the consonant.

Regarding [n] palatalization, even in Shiomichi, Aden, Kamikatetsu, and Sakamine which do not have the distinction between [i] and [ɪ], the *n*s in '*load*' and '*root*' are distinguished due to palatalization.

	'*load*'	'*crab*'	'*goblin*'		'*root*'	'*chest*'	'*ship*'
Shiomichi	nʲi:	ganʲi:	ʔunʲi	:	(hiɴ pinʲi:)	muni	ɸuni:
Aden	--	(gaiɴ)	unʲi	:	ni: / nimutu	muni	ɸu[ni
Kamikatetsu	nʲi:	(gai:)	ʔunʲi	:	nimutu	muni	ɸuni
Sakamine	nʲi:	ganʲi:	ʔunʲi	:	ni:	muni	pʰuni

Moreover, the speakers are very conscious of the pronunciation distinction between *ni* and *ne*. When investigators pronounced '*root*' with a slightly palatalized *n*, the speakers did not think that it was pronounced correctly. Also, Iwakura (1941:18) describes in "the language of Aden in Sōmachi village and surrounds" that [ni] transcribed as *nei* is different from [nʲi] in '*load*'.

The above can be summarized as follows:

	'*load*', '*crab*', '*goblin*' etc.		'*root*', '*chest*', '*ship*' etc.
Onotsu, Shitōke	nʲi	:	nɪ
Shiomichi, Aden, Kamikatetsu, Sakamine	nʲi	:	ni
Nakasato, Wan, Araki	nʲi	:	nɪ

With regard to Onotsu and Shitōke, since two vowels [i] and [ɪ] appear regardless of the consonants which immediately precede them, the distinction between [nʲi] and [nɪ] in large part due to the different vowels. On the other hand, there is only one front high vowel ([i]) after any consonant in Shiomichi, Aden, Kamikatetsu, and Sakamine. Therefore, the distinction between [nʲi] and [ni] relies on the presence or absence of the consonantal palatalization (i.e [nʲ] and [n]).

In Nakasato, Wan, and Araki (Central Kikaijima), it can be argued that the distinction between [nʲi] and [nɪ] is a distinction between two vowels, or alternatively it is a contrast between the presence or absence of palatalization. But in Nakasato, [ɪ], although not stable, appears even after other consonants. Therefore, it might be better to consider the difference between [nʲi] and [nɪ] to be related to the difference of vowels. On the other hand, [ɪ] does

not appear after consonants except *n* in Wan and Araki. Because of this, it is better to consider the distinction between [nʲi] and [nɪ] to be due to the presence and absence of [n] the palatalization, instead of introducing another vowel into the inventory of this dialect.

As for the *n*-palatalization in Southern Kikaijima, Ōno (2002) has pointed it out that it can be assumed that this pronunciation contrast (shown below) is due to the presence or absence of the consonant palatalization, rather than actual vowel quality.

/ ɲji /	: ɲi: '*load*'	ɲiku '*meat*'	kuɲi '*nail*'	
/ ni /	: ni: '*root*'	hani '*metal*'	muni '*chest*'	(Ōno 2002: 6)

Historically, the following process seems to have occurred.

(1) As in Onotsu and Shitōke, the system has a contrast between / i / and / ɪ / after any consonant.

(2) As in Nakasato, the change *ɪ* > *i* has been proceeding so that *ɪ* is not completely merged into *i*, and [ɪ] as well as [i] are used (but only [ɪ] appears after / n /).

(3) As in Wan and Araki, the change *ɪ* > *i* has progressed further, so *ɪ* is merged into *i*, except after / n /.

(4) The change *ɪ* > *i* has occurred even after / n / so that *ɪ* is completely merged into / i /, as in Shiomichi, Aden, Kamikatetsu, and Sakamine. After / n /, the presence or absence of palatalization ([nʲ] and [n]) reflects the difference between *i and *ɪ.

Next, the following step is assumed.

(5) *ɪ* is completely merged into / i / so that there is no distinction between *ɪ and *i, even after / n /.

Let us now move on to discuss the high back vowel [u]. [u] in the Kikaijima dialects corresponds to / u / and / o / in the Tokyo dialect. [o] might appear in some areas (shaded in Table 3.2) but this seems to be due to influence from Standard Japanese. [wu] or [gu] correspond to *wo (shaded in Table 3.3.)

Table 3.1 [u]

number / word / point	40	86	133	177	59	89
	cattle	*song*	*horse*	*sea*	*insect*	*chest*
Onotsu	[ʔu]ɕi	[ʔu]ta	u[ma	ʔu[mi	[mu]ɕi	[mu]nɪ
Shitōke	[ʔu]ɕi	[ʔu]ta	ʔu[ma	[ʔu]mi	[mu]ɕi	[mu]nɪ
Shiomichi	u[ɕi	ʔu[ta	ʔu[ma	[ʔu]mi	mu[ɕi	mu[ni
Sakamine	ʔu[ɕi	ʔu[ta	[mˀa	[ʔu]mi	--	mu[ni

Aden	u[ɕi	u[ta	[mˀa	[ʔu]mi	mu[ɕi	mu[ni
Kamikatetsu	ʔu[ɕi	ʔu[ta	[mˀa	[ʔu]mi	mu[ɕi	mu[ni
Wan	ʔu[ɕi	ʔu[ta	[mˀa	[ʔu]mi	mu[ɕi	mu[nɪ
Nakasato	ʔu[ɕi	ʔu[ta	[maʔ	[ʔu]mi	mu[ɕi	mu[nɪ
Araki	u[ɕi	u[ta	[mˀa	[u]mi	mu[ɕi	mu[ne

Table 3.2 [u]

number / word / point	85 *sound*	112 *parent*	8 *seaweed*	151 *thing*	194 *thigh*	100 *liver*	31 *lower back*	115 *rice*
Onotsu	[ʔu]tu	[tu]ʑitu	[mu]:	mu[nu	mu[mu	kˀi[mu	[hu]ɕi	hu[mɪ
Shitōke	[ʔu]tu	ʔu[ja	[mu]:	[mu]ɴ	mu[mu	kˀi[mu	[hu]ɕi	hu[mɪ
Shiomichi	u[tu	ʔu[ja	mu[:	mu[ɴ	mu[mu	tɕˀi[mu	hu[ɕi	hu[mi
Sakamine	ʔu[tu	u[ja	mu[:	mu[nu	mu[mu	tɕi[mu	ɸu[ɕi	ɸu[mi
Aden	u[tu	--	mo[:	NR	--	tɕi[mu	ɸu[ɕi	ɸu[mi
Kamikatetsu	ʔu[tu	ʔu[ja	--	mu[ɴ	mu[mu	tɕi[mu	ɸu[ɕi	ɸu[mi
Wan	ʔu[tu	u[ja	mu[:	--	mu[mu	--	ɸu[ɕi	hu[mi
Nakasato	ʔu[tu	ʔu[ja	--	mu[ɴ	mu[mu	tɕˀi[mu	ɸu[ɕi / hu[ɕi	ɸu[mi / ɸu[mɪ
Araki	o[to	u[ja	mo[:	mu[ɴ	tɕi[mu	ku[mu	ɸu[ɕi	ɸu[mi

Table 3.3 [u]

number / word / point	34 *husband*	38 *woman*	36 *aunt*	33 *uncle*	175 *the day before yesterday*
Onotsu	[u]tu	[u]na[ŋu	u[ba]:	u[ʣi]:	ʔut[tˀi]:
Shitōke	[u]tu	[u]na[ŋu	[ʔu]ba[kkɪ](:), [ʔu]ba	[ʔu]ɴ[muɥi]:	[wu]t[ti]:
Shiomichi	wu[tˀu	[wu]na[gu	[ʔa]ɴ[ma]: / ʔa[ni]:	[kˀi]ɴ[kˀa]:	wut[tˀi]: / [wu]t[ti]:
Sakamine	gu[tu	[gu]na[ŋu	ʔu[ba]:	ʔu[ʑi]:	[gu]t[tʰi]:
Aden	gu[tu	[gu]na[u	gu[ba	gu[ʣi	--
Kamikatetsu	ʔu[tu	[wu]na[u	wu[ba	ʔu[ʣi	ʔut[ti]:
Wan	wu[tu	[wu]na[gu	wu[ba]:	wu[ʣi]:	wut[tˀi]:
Nakasato	ʔu[tu	[ʔu]na[gu	ʔo[ba]: / ʔu[ba	ʔu[ʣi]:	ʔut[tˀi]:
Araki	ʔu[tu	[ʔu]na[ɯu	ʔo[ba]:	ʔu[ʣi]:	--

(2) Mid Vowels

Three mid vowels [e], [ë], and [o] are reported in Onotsu and Shitōke (Northern Kikaijima), but the other areas have two mid vowels ([e] and [o]). They mostly appear as long vowels which derive from the merger of vowel

sequences. Examples of [e] and [ë] are listed in Tables 4 and 5.

Table 4 [e]

number / word / point	47	58	2-40	104	185	91
	alcoholic beverage	*bamboo*	*sibling*	*arm*	*seedling*	*jaw*
Onotsu	[se]:	[de]:	[kʲo]:[de]:	u[di	ne[:	[ʔu]tuŋe[:
Shitōke	[se]:	[de]:	--	[gu]te[:	ne[:	[ʔa]gu
Shiomichi	se[: / ɕe[:	de[:	[ɕo]:[de]:	[gu]te[:	ne[:	ʔa[gu
Sakamine	se[:	de[:	[so]:[de]:	ʔu[di	ne[:	ʔa[gu
Aden	se[:	de[:	[so]:[de]:	ti[:	ne[:	[u]tu[je]:
Kamikatetsu	se[:	de[:	[so]:[de]:	ʔu[di / [gu]te[:	ne[:	[ʔa]gu
Wan	se[:	de[:	[so]:[de]:	ʔu[di	na[e	ʔa[gu
Nakasato	se[: / ɕe[:	de[:	[so]:[de]:	[gu]te[:	--	ʔa[gu
Araki	ɕe[:	de[:	[so]:[de]:	u[de / [gu]te[:	na[e	a[go

Table 5 [ë]

number / word / point	68	202	210	2-156
	fly	*front*	*forehead*	*southerly wind*
Onotsu	[pë]:	më[:	[më]:[tɕa]:	[ɸe:niɕi
Shitōke	[ɸë]: / [pë]:	më[:	[më]:[tɕi]:	ɸë[: / [ɸë]ɴka[dʑi
Shiomichi	he[:	[me]:	[mettɕi]: / / [me]:[tɕi]:	pʰe[:
Sakamine	pe[:	[me]:	[mi]k[ko]:	[pe]:
Aden	pe[: / ɸe[:	[me]:	--	[ɸe]:
Kamikatetsu	he[:	[me]:	mit[tɕe]:	[he]:
Wan	he[:	[me]:	[mittɕe]:	[heɴ]ka[di]:
Nakasato	he[:	[me]:	mit[tɕe]:	[hë]:
Araki	he[:	[me]:	mit[tɕe]:	--

[k] in '*alcoho beveragel*' and '*bamboo*' in Table 4 became [x], and the friction of [x] weakened, giving rise to a vowel sequence (*sake > *saxe > *sae > *së: > se:, *dake > *daxe > *dae > *dë: > de:). Also, [gute:] '*arm*' derives from *gotai '*body*', [ʔutuŋe:] '*palate*') derives from *otoŋai, and [ɸe:] and [ɸë:] '*fly*' come from *pae. All of these come from *ae and *ai. The origin of the word for '*forehead*' is not clear, but might be *maehitai* (< 'front' + 'forehead').

In Onotsu and Shitōke, [ë:] tends to appear when it follows [p], [m], and [ɸ] (shaded in Table 5), and [e:] tends to show up in other situation (Table 4).

Next, [o] appears in the following words. They mostly appear as long vowels, which are the result of mergers

of consecutive vowels such as *au and *ao (e.g. '*octopus*': *tako > *taxo > *tao > to:), or Chinese loanwords.

Table 6.1 [o]

number / word / point	213	245	123	137
	mold	*broom*	*pole*	*octopus*
Onotsu	[ho]:[ʑi	[ho]:[ki	[so]:de[:(polebamboo)	to[:
Shitōke	[ho]:[ʑi	[po]:[ki	[de]:（bamboo）	to[:
Shiomichi	[ho:]ʑi	[ɸo]:[tɕi	[so]:[de]: / de[:	to[:
Sakamine	ho[:]ʑi	[po:]tɕi	sa[o	to[:
Aden	ho[:]ʑi	po[:]tɕi / ho[:]tɕi	de[:	to[:
Kamikatetsu	[ho]:[ʑi	ho[:]tɕi	de[:	tʰo[:
Wan	[ho:]ʤi	ho[:]tɕi	[so]:[de]:	--
Nakasato	[ho:]ʑi	ho[:]tɕi	--	to[: / [to:
Araki	[ho:]ʑi / ho[:]ʑi	ho[:]tɕi	de[:	to[:

Table 6.2 [o]

number / word / point	2-40	2-45	2-83
	sibling	*relative*	*gate*
Onotsu	[kʲo]:[de]:	[ɸa]ɾo:[ʤi]:	ʤo[:
Shitōke	--	[ha]ɾo:[ʤi]:	ʤo[:
Shiomichi	[ɕo]:[de]:	pʰa[ɾo:]ʤi	[ʤo:
Sakamine	[so]:[de]:	pa[ɾo]:[ʑi]:	[ʤo]:
Aden	[so]:[de]:	[ɸa]ɾo:[ʤi	[ʤo]ɴku[tɕi]: / [ʤo]:
Kamikatetsu	[so]:[de]:	[haɾo]:[ʤi]: / [so:de]ɴ[tɕa]:	[ʤo]:
Wan	[so]:[de]:	[haɾo]:[ʤi]:	[ʤo]:
Nakasato	[so]:[de]:	[haɾo]:[ʤi]:	[ʤo]:
Araki	[so]:[de]:	ha[ɾo]:[ʤi]:	[ʤo]:

(3) Low Vowel

All dialects have the low vowel [a]. Examples are listed in Table 7.

Table 7 [a]

number / word / point	9	10	37	42	70	128
	leaf	*name*	*rice porridge*	*metal*	*nose*	*mountain*
Onotsu	[pa]:	[na]:	ka[i]:	[ka]ne	[pa]na	ja[ma
Shitōke	[pa]:	[na]:	ka[i]:	[ha]nɪ	[pa]na	ja[ma

Shiomichi	pa[:	na[:	ka[i	NR	pa[na	ja[ma
Sakamine	pa[: / ɸa[:	na[:	ka[ju	ha[ni / xa[ni	--	ja[ma
Aden	pa[:	na[:	ka[i	ha[ni	p^ha[na	ja[ma
Kamikatetsu	ha[:	na[:	[k^ha]i[:	ha[ni	ha[na	ja[ma
Wan	ha[:	[na]ma[i	k^ha[i	ha[nɪ	ha[na	ja[ma
Nakasato	ha[:	na[:	k^ha[i / k^ha[ju	ha[nɪ	ha[na	ja[ma
Araki	ha[:	[na]ma[i	[ka]i[:	ha[ni / ha[nɪ	ha[na	ja[ma

3.3 Inventory of Vowel Phonemes in the Kikaijima Dialects

The inventory of vowel phonemes in each Kikaijima dialect is as follows.

short vowels

Onotsu, Shitōke	Nakasato	Shiomichi, Aden, Kamikatetsu, Sakamine, Wan, Araki
i ɪ u	i (i / ɪ) u	i u
a	a	a

long vowels

Onotsu, Shitōke	Nakasato	Shiomichi, Aden, Kamikatetsu, Sakamine, Wan, Araki
i ɪ: u:	i: (i: / ɪ:) u:	i: u:
e: ë: o:	e: o:	e: o:
a:	a:	a:

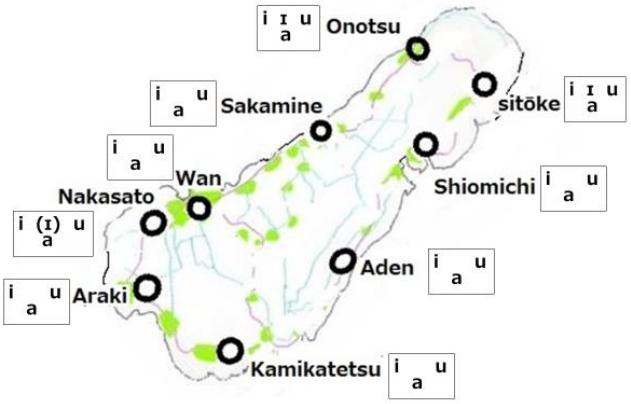


Figure 3 Inventory of vowel phonemes in each Kikaijima dialect

4 Kikaijima Dialect Consonants

4.1 Bilabials

(4) Bilabial Stops and Fricatives p, b and ɸ

The Kikaijima dialects have two bilabial stops [p] and [b], and a bilabial fricative, [ɸ]. [p] and [ɸ] precede vowels [a], [i], [ɪ], [u], [e], [ë], and [o]. Examples are listed in Tables 8.1 - 8.4.

Table 8.1 [p, ɸ]

number / word / point	9	13	33	69	7	72
	leaf	*tooth*	*feather*	*box*	*sun*	*beard*
Onotsu	[pa]:	pa[:	[pa]nɪ	[pa]ku	[pi	[pi]nɪ
Shitōke	[pa]:	pa[:	[pa]nʲi	pa[ku	ti[da	[pi]nʲi / [pi]ŋi
Shiomichi	pa[:	pa[:	pa[ni / pa[nʲi	pa[ku	[ti]da	pi[nʲi
Sakamine	pa[: / ɸa[:	pa[: / ɸa[:	pa[ni	--	[pi]:	pi[ni
Aden	pa[:	pa[:	pa[ni	pʰa[ku	[ti]da	pʰi[gi]:
Kamikatetsu	ha[:	ha[:	ha[ni	ha[ku	çi	çi[gi
Wan	ha[:	ha[:	ha[nɪ	--	--	--
Nakasato	ha[:	ha[:	ha[nʲi	ha[ku	çi[: / [çi]:	çi[nʲi / ɸi[ŋɪ
Araki	ha[:	[ha:	ha[ni / hanɪ	ha[ku	çi[:	çi[nɪ

Table 8.2 [p, ɸ]

number / word / point	96	249	14	166	68	245
	elbow	*left*	*fart*	*spatula*	*fly*	*broom*
Onotsu	[pi]ʑi / [ɸi]ʑi	[pi]ʑa[i	pɪ[: / ɸɪ[:	he[ɾa	[pë]:	[ho]:[ki
Shitōke	pi[ʑi	pi[da]i	pɪ[:	pi[ɾa / ɸi[ɾa	[ɸë]: / [pë]:	[po]:[ki
Shiomichi	pi[ʑi	pi[da]i	pi[:	NR	he[:	[ɸo]:[tɕi
Sakamine	pi[dʑi	pi[ʑa]i	ɸi[:	[pi]ɾa	pe[:	[po:]tɕi
Aden	çi[ʑi	ɸi[da]i	pi[: / ɸi[:	[pi]ɾa	pe[: / ɸe[:	po[:]tɕi / ho[:]tɕi
Kamikatetsu	çi[ʑi	çi[da]ɾi	çi[:	NR	he[:	ho[:]tɕi
Wan	çi[ʑi	çi[da]ɾi	çi[:	sa[ʑi(匙)	he[:	ho[:]tɕi
Nakasato	çi[ʑi	çi[da]ɾi	çi[:	çi[ɾa	he[:	ho[:]tɕi
Araki	çi[ʑi	çi[da]ɾi	çi[:	NR	he[:	ho[:]tɕi

Table 8.3 [p, ɸ]

number / word / point	73	95	165	227	146
	brush	*winter*	*boat*	*bag*	*joint*
Onotsu	pu[di	[pˀu]ju	pu[nɪ	puk[ku / ɸuk[ku	ɸu[ɛi
Shitōke	[ɸu]dɪ	[ɸu]ju	ɸu[nɪ	ɸuk[ku	[pu]ɛi
Shiomichi	pu[di / ɸu[di	ɸu[ju	[ɸu]ni	[ɸuk]ku	bu[ɛi / / pu[ɛi
Sakamine	--	pu[ju	[pʰu]ni	[puk]ku	pu[ɛi
Aden	ɸu[di	ɸu[ju	[ɸu]ni	[ɸuk]ku	--
Kamikatetsu	ɸu[di	ɸu[ju	ɸu[ni	[ɸuk]ku	[bu]ɛi̥
Wan	ɸu[de	ɸu[ju	[ɸu]nɪ	[ɸuk]ku	--
Nakasato	ɸu[di	ɸu[ju	[ɸu]nɪ	[ɸuk]ku / ɸuk[ku	ɸu[ɛi / bu[ɛi (古 shape ?)
Araki	ɸu[di	ɸu[ju	[ɸu]nɪ	[ɸuk]ku	ɸu[ɛi

Table 8.4 [p, ɸ]

number / word / point	4	15	54	81	102
	sail	*ear of grain*	*star*	*navel*	*bone*
Onotsu	[ɸu]:	[pu]: / [ɸu]:	[pʰu]ɛi	[pu]su	pu[nɪ / ɸu[nɪ
Shitōke	ɸu[:	ɸu[:	[ɸu]ɛi / [pu]ɛi	[pu]su / [ɸu]su	pu[nɪ]:
Shiomichi	ɸu[:	[i]ninomi[:	hu[ɛi	pu[su	ɸu[ni]:
Sakamine	pu[: / ɸu[:	pu[: / ɸu[:	--	pu[su	[pʰu]ni
Aden	ɸu[:	ɸu[:	ɸu[ɛi	ɸu[su	ɸu[ni
Kamikatetsu	ɸu[: / [ɸu]:	ɸu[:	ɸu[ɛi	ɸu[su	[ɸu]ni
Wan	ɸu[:	ɸu[:	ho[ɛi	ɸu[su	[ɸu]nɪ
Nakasato	ɸu[:	ɸu[:	ɸu[ɛi	ɸu[su	[ɸu]nɪ
Araki	ho[:	ho[:	ɸu[ɛi	çi[su	[ɸu]nɪ

The areas where [p] is reported are Onotsu and Shitōke (Northern Kikaijima), Shiomichi, Sakamine, and Aden (Central Kikaijima) (shaded in the table), while [h] appears in Kamikatetsu, Wan, Nakasato, and Araki (Southern Kikaijima). The degree of closure of [p] in Northern Kikaijima is very weak and it is often pronounced as the bilabial fricative [ɸ]. Moreover, when being followed by the vowel [u], especially when the [u] corresponds to Tokyo dialect / o / , [ɸ] shows up more frequently than [p] does, even in Northern Kikaijima ('*sail*', '*ear of grain*', '*star*', '*navel*', and '*bone*' in Table 8.4).

In Southern Kikaijima, [h], [ç], and [ɸ] appear as allophones of / h / , where [h] precedes [a], [u], and [o], [ç] appears before [i], and [ɸ] appears before [u]. In Araki, '*canvas*' and '*spike*' appear as *ho*. This may be due to the influence of Standard Japanese.

Next, [b] rarely appears in word-initial position, usually being limited to word-medial position. [b] appears at the beginning of the word [bibiza:] '*earthworm*' in Onotsu, Shiomichi, Sakamine, and Wan, but this is due to

historical change from [m]. Word-medial [b] corresponds to [b] in the Tokyo dialect. [b] precedes [a], [i], [ɪ], and [u]. Examples are listed in table 9.

Table 9 [b]

number / word / point	253	98	106	2-43	191
	earthworm	*tongue*	*finger*	*child*	*grain*
Onotsu	[bi]biʑa[ɾa]:	su[ba	[ju]bi	[wa]ɾa[bɪ / [wa]ɾa[bʷi	NR
Shitōke	[mi]mi[ʑa]:	su[ba	ju[bi	[wa]ɾa[bɻ	[tsu]bu
Shiomichi	[mi]mi[ʑa]: / [bi]bi[da]:	su[ba	ju[bi	wa[ɾa]bi	tˀu[bu
Sakamine	[bi]bi[ʑa]:	su[ba	ju[bi	wa[ɾa]bi	tsˀu[bu
Aden	[mi]mi[da]:	su[ba	ju[bi	wa[ɾa]bi	--
Kamikatetsu	[mi]mi[da]:	su[ba	ju[bi	--	tˀu[da]: / tʰu[da]:
Wan	[bibi]da[ɾa]:	su[ba	ju[bi	wa[ɾa]bi	tu[bu / tu[da]:
Nakasato	[mimi]ɴda[ja]:	su[ba	ju[bi	wa[ɾa]bi	--
Araki	[mi]mi[ʑa]:	su[ba	ju[bi	wa[ɾa]bi	tsu[bu]: / tsu[bu

(5) Bilabial Nasal m

The bilabial nasal [m] corresponds to Tokyo dialect [m]. It precedes the vowels [a], [i], [ɪ], [u], [e], [ë] and [o], and there is almost no difference among areas. Examples are listed in Tables 10.1 - 10.2. The word for '*horse*' has a glottalized nasal [mˀ] (shaded in the table). It can be considered that [maʔ] in Nakasato is the result of the word-initial glottal stop being pronounced at the end of a word.

Table 10.1 [m]

number / word / point	109	114	129	132	101	118
	crotch	*bean*	*island*	*shore*	*ear*	*net*
Onotsu	ma[ta	ma[mɪ	ɕi[ma	pa[ma	mi[mi	a[mi
Shitōke	ma[ta	ma[mɪ	ɕi[ma	pa[ma	mi[mi	ʔa[mɪ
Shiomichi	ma[ta	ma[mi	ɕi[ma	[pa]ma	mi[mi	a[mi
Sakamine	ma[ta	ma[mi	ɕi[ma	[pa]ma	mi[mi	ʔa[mi
Aden	ma[ta	ma[mi	ɕi[ma	[pa]ma	mi[mi	a[mi
Kamikatetsu	ma[ta	ma[mi	ɕi[ma	ha[ma	mi[mi	ʔa[mi
Wan	ma[ta	ma[mi	ɕi[ma	[ha]ma	mi[mi	ʔa[mi
Nakasato	ma[ta	ma[mi / ma[mɪ	ɕi[ma	ha[ma	mi[mi	ʔa[mi
Araki	ma[ta	ma[mi / ma[me	ɕi[ma	[ha]ma	mi[mi	a[mi

Table 10.2 [m]

number / word / point	59 *insect*	194 *thigh*	202 *forward*	8 *seaweed*	133 *horse*
Onotsu	[mu]ɕi	mu[mu	më[:	[mu]:	u[ma
Shitōke	[mu]ɕi	mu[mu	më[:	[mu]:	ʔu[ma
Shiomichi	mu[ɕi	mu[mu / at[te]:	[me]:	mu[:	ʔu[ma
Sakamine	--	mu[mu	[me]:	mu[:	[mˀa
Aden	mu[ɕi	--	[me]:	mo[:	[mˀa
Kamikatetsu	mu[ɕi	mu[mu / at[te]:	[me]:	NR	[mˀa
Wan	mu[ɕi	mu[mu	[me]:	mu[:	[mˀa
Nakasato	mu[ɕi	mu[mu	[me]:	--	[maʔ
Araki	mu[ɕi	mọ[mọ / mo[mo	[me]:	mo[:	[mˀa

4.2 Alveolars

(6) Alveolar Stops t tˀ d

Kikaijima dialects have the alveolar stops [t], [tˀ], and [d]. [t] precedes the vowels [a], [i], [ɪ], [u], [e], and [o]. Examples are listed in Table 11.1.

Table 11.1 [t]

number / word / point	21 *rice paddy*	86 *song*	11 *hand*	233 *front*	60 *bird*	85 *sound*	257 *field*	137 *octopus*
Onotsu	ta[:	[ʔu]ta	tɪ[:	[u]mu[tɪ	[tu]i	[ʔu]tu	[pa]te[:	to[:
Shitōke	ta[:	[ʔu]ta	tɪ[:	[u]mu[tɪ	[tu]i	[ʔu]tu	[pa]te[:	to[:
Shiomichi	tʰa[:	ʔu[ta	ti[:	[u]mu[ti	tu[i	u[tu	pa[te]:	to[:
Sakamine	tʰa[:	ʔu[ta	ti[:	[ʔu]mu[ti	tu[i	ʔu[tu	pa[te]:	to[:
Aden	ta[:	u[ta	ti[:	[ʔu]mu[ti	tu[i	u[tu	pa[te]:	to[:
Kamikatetsu	tʰa[:	ʔu[ta	ti[:	[ʔu]mu[ti	tʰu[ɾi	ʔu[tu	ha[te]:	tʰo[:
Wan	tʰa[:	ʔu[ta	tʰi[:	[ʔu]mu[ti	tʰu[ɾi	ʔu[tu	ha[te]:	NR
Nakasato	tʰa[:	ʔu[ta	tʰi[:	[ʔu]mu[ti / [ʔumuti	tʰu[i	ʔu[tu	ha[te]:	to[: / [to:
Araki	tʰa[:	u[ta	ti[:	[u]mu[ti	tu[ɾi / o[ɾi	o[to	ha[te]:	to[:

[ta] in Kikaijima dialects corresponds to Tokyo Japanese *ta*, [tɪ] (Northern) and [ti] (Southern) to *te*, and [tu] to *ʦu* and *to*. te] and [to] are derived from vowel sequences (*tae and *tao), and appear with long vowels. As will be explained below, since Tokyo dialect [tɕi] in corresponds to [tɕi] in Kikaijima, '*hand*' (Tokyo dialect *te*) and '*blood*' (Tokyo dialect [tɕi] / ti /) are respectively pronounced as [tɪ:] and [tɕi:] in Northern, or as [ti:] and [tɕi:] in

Southern Kikaijima. Similarly, since the syllable which corresponds to Tokyo dialect [tsu] is pronounced as [tˀu] or [tsˀu] in Kikaijima, the first moras of '*bird*' (Tokyo dialect *tori*) and '*face*' (Tokyo dialect *tsura*) are distinguished as [tu] and [tˀu] (or [tu] and [tsˀu]). However the glottalization for [tˀu] is weak in some areas. In this case, the [tu] in '*bird*' and the [tu] in '*face*' are pronounced almost identically. (Please refer to the section oon the affricate *ʦ* for more detail.).

The glottalized [tˀ] precedes the vowels [a], [i], and [u]. [tˀu], for example in '*face*' and '*rope*', is pronounced as [tsˀu], or [tu] (due to weak glottalization of [tˀu]), depending on the area. The relationship between [tu] in '*bird*' and [tˀu] in '*face*' is the same as above. [tˀa] and [tˀi] appear in words such as '*one*', '*two*' and '*two people*'. These words originally had a [pi (ɸi)] or [pu (ɸu)] at the beginning of a word, but when these dropped out the *t* of the following syllable was glottalized.

Table 11.2 [tˀ]

number / word / point	99	121	2-15	2-178	2-180	2-189
	face	*rope*	*knee*	*one*	*two*	*two people*
Onotsu	tsˀu[ɾa	tu[na	tsu[bu]ɕi	--	--	--
Shitōke	tɕu[ɾa	tsˀu[na	[tɕu]bu[ɕi	[tˀi]tɕu	[tˀa:]tɕu	[tˀa]i
Shiomichi	tu[ɾa	tˀu[na	[tˀu]bu[ɕi	[tˀi]tu	[tˀa:]tu	[tˀai
Sakamine	tsu[ɾa	tsˀu[na / tu[na	[tsu]bu[ɕi	[tˀi]tsu	[tˀa]:[tsu	tˀa[i
Aden	tu[ɾa	tˀu[na	[tˀu]bu[ɕi	--	--	--
Kamikatetsu	tˀu[ɾa	tˀu[na	[tˀu]bu[ɕi	[tˀi]tu	[tˀa]:[tu	tˀa[ɾi
Wan	tu[ɾa	tsu[na / tu[na	[tˀu]bu[ɕi	[tˀi]tu	[tˀa]:[tu	tˀa[ɾi
Nakasato	tˀu[ɾa	na[wa	[tˀu]bu[ɕi	[tˀi]tu	[tˀa]:[tˀu	tˀa[i
Araki	tsu[ɾa	tsu[na	[tsu]bu[ɕi / [tsubuɕi	[tˀi]tsu	[tˀa]:[tsu	tˀa[ɾi

[d] corresponds to [d] in Tokyo Japanese. It precedes the vowels [a], [i], [ɪ], [u], and [e]. Examples are listed in Table 12. [d] usually does not occur word-initially, but '*bamboo*' is pronounced as [de:] in all areas. To compare with the Tokyo dialect, [da:] in Northern Kikaijima dialects corresponds to [da] in Tokyo dialect, [di] (Northern) or [di] (Southern) correspond to [de], and [du] corresponds to [do]. Tokyo dialect [z] corresponds to [d] in Central and Southern Kikaijima, which will be explained in the next section.

Table 12 [d]

number / word / point	46	212	55	73	178	217	58
	branch	*drool*	*sleeve*	*brush*	*corner*	*dance*	*bamboo*
Onotsu	[ju]da	ju[da]i	[su]di	pu[di	[ka]du	u[du]i	[de]:
Shitōke	[ji]da /	ju[da]i	[su]di	[ɸu]dɪ	[ka]du	ʔu[du]i	[de]:

	[ju]da						
Shiomichi	ju[da	[ju]da[i	su[di	pu[di / ɸu[di	ka[du	[wu]du[i	de[:
Sakamine	ji[da	[ju]da[i	--	--	ha[du	[gu]du[i	de[:
Aden	ju[da	[ju]da[i	su[di	ɸu[di	ka[du	[gu]du[i	de[:
Kamikatetsu	ju[da	[ju]da[ɾi	su[di	ɸu[di	k^ha[du	[ʔu]du[ɾi	de[:
Wan	ju[da	[ju]da[ɾi	su[di	ɸu[de	k^ha[du	[wu]du[ɾi	de[:
Nakasato	ji[da / ju[da	[ju]da[ɾi	su[di	ɸu[di	k^ha[du / su[mi(隅)	[ʔu]du[i	de[:
Araki	ju[da	[ju]da[ɾi	su[di	ɸu[di	ka[du	[u]du[ɾi	de[:

(7) Alveolar Fricatives s z

The Kikaijima dialects have the alveolar fricatives [s] and [z]. [s] corresponds to Tokyo dialect [s]. It precedes [a], [u], [e], and [o]. When the following vowel is [i], *s* is pronounced as the back alveolar fricative [ɕ]. Examples are listed in Tables 13.1 and 13.2.

Table 13.1 [s]

number / word / point	45	168	2-60	27	200	55	47
	dish	*bamboo hat*	*Japanese clog*	*nest*	*soot*	*sleeve*	*alcoholic beverage*
Onotsu	[sa]ɾa	ha[sa	ʔas[sa]:	su[:	su[su	[su]di	[se]:
Shitōke	[sa]ɾa	ha[sa	[ʔa]ssa[:	su[:	su[su	[su]di	[se]:
Shiomichi	sa[ɾa	ha[sa	ʔaɕ[ɕa]:	su[:	[su]su	su[di	se[: / ɕe[:
Sakamine	sa[ɾa	ha[sa	[ʔa]s[sa]:	su[:	[su]su	--	se[:
Aden	sa[ɾa	ha[sa	ʔas[sa	su[:	--	su[di	se[:
Kamikatetsu	sa[ɾa / su:]da[ɾa	ha[sa	ʔas[sa	[su]:	su[su	su[di	se[:
Wan	[so]:[da]ɾa	ha[sa	ʔas[sa	su[:	[su]su	su[di	se[:
Nakasato	sa[ɾa / [saɾa	ha[sa	ʔa[ssa	su[:	su[su	su[di	se[: / ɕe[:
Araki	sa[ɾa	ka[sa	ʔas[sa]	su[:	su[su	su[di	ɕe[:

Table 13.2 [s], [ɕ]

number / word / point	123	2-40	129	161	40	197
	pole	*sibling*	*island*	*soup*	*cattle*	*sweat*
Onotsu	[so]:de[:	[kʲo]:[de]:	ɕi[ma	ɕi[ɾu	[ʔu]ɕi	a[ɕi
Shitōke	[de]:(bamboo)	ji[:]ɾi / [ʔu]tu[ʣa	ɕi[ma	ɕi[ɾu	[ʔu]ɕi	ʔa[ɕi
Shiomichi	[so]:[de]: / de[:	[ɕo]:[de]:	ɕi[ma	ɕi[ɾu	u[ɕi	a[ɕi
Sakamine	sa[o	[so]:[de]:	ɕi[ma	ɕi[ɾu	ʔu[ɕi	ʔa[ɕi
Aden	de[:	[so]:[de]:	ɕi[ma	ɕi[ɾu	u[ɕi	ʔa[ɕi

Kamikatetsu	de[: / [de]:[ma]:	[so]:[de]:	ɕi[ma	ɕi[ɾu	ʔu[ɕi	ʔa[ɕi
Wan	[so]:[de]:	[so]:[de]:	ɕi[ma	ɕi[ɾu	ʔu[ɕi	ʔa[ɕi
Nakasato	--	[so]:[de]:	ɕi[ma	ɕi[ɾu	ʔu[ɕi	ʔa[se
Araki	de[:	[so]:[de]:	ɕi[ma	ɕi[ɾu	u[ɕi	a[ɕi

[s] does not display much dialectal variation. However, in Shiomichi, / sa / , / se / , and / so / tend to be pronounced as [ɕa], [ɕe], and [ɕo] (shaded in the table). In comparison to the Tokyo dialect, *ase* '*sweat*' in Table 13.2 might be assumed to become [ʔasɪ] in Northern and [ʔasi] in Southern Kikaijima dialects, but in fact this word is pronounced as [ʔaɕi]. Additionally, according to Gengo-chirigaku Teirei Kenkyūkai (1983), this word is pronounced as [ʔaʂʲ] in Nagamine, [ʔasi] in Sōmachi and Nakaguma, and [ʔasɪ] and [ʔaʂɪ] in Ikeji (however, these notations might refelct different transcription styles of researchers (p.7)).

Next, [z] corresponds to Tokyo dialect / z / . It precedes [a], [i], and [u]. *z* is pronounced before [i] as the postalveolars [ʑ] - [dʑ]. Examples are listed in Tables 14.1 - 14.2.

Table 14.1 [z]

number / word / point	67	2-29	2-90	52	49	2-168	43
	smell	*mole*	*night fishing*	*water*	*wound*	*last year*	*groove*
Onotsu	[ha]za	[ʔa]za	ʔi[za]i	[mi]zu	[kʔi]zu	hu[dzu	mi[zu]:
Shitōke	[ha]ʑa	[ʔa]dʑa	i[dʑa]i	mɪ[dzu	[kʔi]zu	hu[dʑu	mi[zu]:
Shiomichi	NR	ʔa[da	[ʔi]da[ɾi	mi[du	kʔi[zu	hu[du / / ɸu[du	mi[zu]:
Sakamine	--	a[za	[ʔi]za[i	--	kʔi[dzu	ɸu[ʑu / [dʑu	mi[zu]:
Aden	ha[da	ʔa[da	[ʔi]da[i	mi[du	tɕi[du	--	mi[zu]:
Kamikatetsu	ha[da	ʔa[za	[ʔi]da[ɾi	mi[du	tɕi[du	ɸu[du	mi[zu]:
Wan	--	ʔa[da	[ʔi]da[ɾi	mi[du	tɕi[du	hu[du	mi[zu]:
Nakasato	ha[da	a[da	[ʔi]da[i	mi[zu / mi[du	tɕi[zu	ɸu[du	mi[zu]:
Araki	ha[da	ʔa[za	[ʔi]za[ɾi	mi[zu	ki[zu	ɸu[zu	mi[zu]:

Table 14.2 [z], [ʑ]

number / word / point	2-134	96	2-50	213	2-140	75
	mallet	*elbow*	*wife*	*mold*	*meal tray*	*wind*
Onotsu	[ʔa]zu[mu	[pi]ʑi / [ɸi]ʑi	[tʰu]ʑi	[ho]:[ʑi	[dʑi]ɴ	[ha]ʑi
Shitōke	[ʔa]dʑu[mu	pi[ʑi	tʰu[dʑi	[ho]:[ʑi	dʑi[nu	[ha]ʑi
Shiomichi	ʔa[dzu]mu	pi[ʑi	tʰu[dʑi	ho[:]ʑi	dʑi[ɴ	ha[di
Sakamine	ʔa[ʑu]mu	pi[dʑi	tu[dʑi	ho[:]ʑi	dʑi[ɴ / [dʑiɴ	--
Aden	--	çi[ʑi	tʰu[dʑi	[ho]:[ʑi	--	ha[di
Kamikatetsu	ʔa[di]mu / [jamatu]ʔa[di]mu	çi[ʑi	tʰu[dʑi	[ho]:[ʑi	dʑi[ɴ	ha[di
Wan	ʔa[du]mu	çi[ʑi	tʰu[dʑi	[ho:]dʑi	dʑi[ɴ	--

Nakasato	ʔa[du]mu	çi[ʑi	tʰu[dʑi	[ho:]ʑi	dʑi[ɴ	ha[di
Araki	ʔa[dzu]mu / jama[tu]a[dzu]mu	çi[ʑi	tu[dʑi	[ho:]ʑi / ho[:]ʑi	dʑi[ɴ	ha[ʑi

z shows much dialectal variation. By and large, *z* is often pronounced as [z] or [dz] in Onotsu, Sakamine, and Araki, the back alveolars [ʒ] ~ [dʒ] in Shitōke, and [d] in Shiomichi, Aden, Kamikatetsu, Wan, and Nakasato (shaded in the table). However, in '*groove*' in Table 14.1 it is pronounced as [ʒ] or [ʐ]. As a result, Tokyo dialect [da] and [za] merge into [da] in Shiomichi, Aden, Kamikatetsu, Wan, and Nakasato, while [do], [zu], and [zo] merge into [du]. For example, [da] in [juda] '*branch*' and [judaɾi] '*drool*' (from *da) in Table 12 is the same [da] as in [kada] '*smell*', [ʔada] '*mole*', and [idaɾi] '*night fishin*g' (from *za). Also, [du] in [kadu] '*corne*r', and [wuduɾi] or [ʔuduɾi] '*dance*' (from *do) in Table 12 is the same as [du] in [midu] '*water*', [tɕidu] '*wound*', and [ɸudu / hudu] '*last year*' (from *du, *zu, and *zo respectively) in Table 14.

In addition, *kaze '*wind*' has become [hadi] in these areas ([haʑi] in others), and the [di] here is the same [di] in [sudi] (*sode '*sleeve*') and [ɸudi] (*pude '*brush*'). Due to this, it can be assumed that the change *z > *d preceded the vowel alternation *e > *ɪ > *i in Shiomichi, Aden, Kamikatetsu, Wan, and Nakasato.

'*brush*': *pude > *ɸude > ɸudi

'*wind*': *kaze > *haze > *hade > hadi

(if the vowel change had preceded this, the order of changes would have been *kaze > *haze > *haʑe > haʑi and so [hadi] would not have arisen.)

Also, although the beginning of the word '*meal tray*' in Table 14.2 is derived from *ze, it is not pronounced as [*diɴ] but as [dʑiɴ] in Shiomichi, Aden, Kamikatetsu, Wan, and Nakasato. This might be due to the position of a word (i.e. word-initial), but it is also possible that this word was imported into the Kikaijima dialect after the z > d change.

(8) Alveolar Affricates *ʦˀ* (ʦ), *ʨˀ* (ʨ)

The Kikaijima dialects have the alveolar fricatives *ʦˀ*, *ʦ* and *ʨˀ*, *ʨ*. *ʦˀ*, *ʦ* appear before the vowel [u], and correspond to [ʦ] in the Tokyo dialect. Examples are listed in Table 15.1.

There is a big difference in the pronunciation of *ʦˀ*, *ʦ* among dialects. It is commonly pronounced as [ʦˀu] in Onotsu and Shitōke (Northern Kikaijima), Sakamine (Central Kikaijima) and Araki (Southern Kikaijima), but as [tˀu] in Wan and Nakasato (Southern Kikaijima). [ʦˀu] and [tˀu] might appear in free variation in the same area. Also, a sound between [ʦˀu] and [tˀu] is reported. There are also pronunciations where the degree of glottalization is weak.

Table 15.1 [tsˀ (ts)]

number / word / point	99	121	141	183	219
	face	*rope*	*horn*	*pine*	*skipjack tuna*
Onotsu	tsˀu[ɾa	tu[na	tsu[nu	ma[tsu	ka[tsu]:
Shitōke	tɕu[ɾa	tsˀu[na	tsˀu[nu	ma[tsˀu	ka[tsu]:
Shiomichi	tu[ɾa	tˀu[na	tu[nu	[ma]tu	[ka]tsu[o
Sakamine	tsu[ɾa	tsˀu[na / tu[na	tsu[nu	[ma]tɕu	[kʰa]tsu[:
Aden	tu[ɾa	tˀu[na	tˀu[nu	--	ka[tsu]o
Kamikatetsu	tˀu[ɾa	tˀu[na	tˀu[nu	[ma]tsu	[kʰa]tu[:
Wan	tu[ɾa	tsu[na / tu[na	--	[ma]tu / ma]tsu	[kʰa]tu[: / kʰa]tsu[:
Nakasato	tˀu[ɾa	na[wa	tˀu[nu	ma[tu	[katso
Araki	tsu[ɾa	tsu[na	tsunu	[ma]tsu	ka[tsuo

As explained in (6) for *t*, '*bird*' is pronounced as [tuɾi] or [tui] in the Kikaijima dialects. The [tu] is the non-glottalized [tu], and it does not alternate with [tsu]. In this regard, [tˀu] and [tsˀu] are distinguished in '*face*' ([tˀuɾa] and [tsˀuɾa]). However, if the [tˀu] glottalization weakens (shaded in 15.2), it is difficult to distinguish between [tu] in '*face*' and '*bird*'.

Table 15.2 '*face*' and '*bird*'

number / word / point	99	121	141	60
	face	*rope*	*horn*	*bird*
Onotsu	tsˀu[ɾa	tu[na	tsu[nu	[tu]i
Shitōke	tɕu[ɾa	tsˀu[na	tsˀu[nu	[tu]i
Shiomichi	tu[ɾa	tˀu[na	tu[nu	tu[i
Sakamine	tsu[ɾa	tsˀu[na / tu[na	tsu[nu	tu[i
Aden	tu[ɾa	tˀu[na	tˀu[nu	tu[i
Kamikatetsu	tˀu[ɾa	tˀu[na	tˀu[nu	tʰu[ɾi
Wan	tu[ɾa	tsu[na / tu[na	--	tʰu[ɾi
Nakasato	tˀu[ɾa	na[wa	tˀu[nu	tʰu[i
Araki	tsu[ɾa	tsu[na	tsunu	tu[ɾi / to[ɾi

tɕˀ, *tɕ* appears before the vowel [i], and corresponds to [tɕ] in the Tokyo dialect. In some areas, it also corresponds to Tokyo dialect [k(i)]. Examples are '*wound*', '*liver*', '*breath*', '*broom*' in Table 15.3 (shaded in the table). [tɕi] corresponds to Tokyo dialect [ki] in Shiomichi, Sakamine, Aden, Kamikatetsu, Wan, and Nakasato (Central and Southern Kikaijima), while in Onotsu and Shitōke, [kˀi] corresponds to Tokyo dialect [ki].

Table 15.3 [tɕ]

number / word / point	2	66	119	49	100	158	245
	blood	*road*	*bowl*	*wound*	*liver*	*breath*	*broom*
Onotsu	[tɕʔi]:	[mi]tɕi	pa[tɕi	[kʲʔi]zu	kʲʔi[mu	ʔi[ki	[ho]:[ki
Shitōke	[tɕi]: / [tɕi:	[mi]tɕi	[pa]tɕi	[kʲʔi]zu	kʲʔi[mu	ʔi[ki	[po]:[ki
Shiomichi	tɕʔi[:	mi[tɕi	pa[tɕi	kʲʔi[zu	tɕʔi[mu	[ʔi]tɕi	po[:]tɕi
Sakamine	tɕi[:	--	[pa]tɕi	kʲʔi[dzu	tɕi[mu	[ʔi]tɕi	po[:]tɕi
Aden	tɕi[:	mi[tɕi	[ha]tɕi	tɕi[du	tɕi[mu	[ʔi]tɕi	po[:]tɕi
Kamikatetsu	tɕi[:	mi[tɕi	ha[tɕi	tɕi[du	tɕi[mu	[ʔi]tɕi	ho[:]tɕi
Wan	tɕʔi[:	mi[tɕi	[ha]tɕi	tɕi[du	--	[ʔi]tɕi	ho[:]tɕi
Nakasato	tɕʔi[: / [tɕʔi:	mi[tɕi	ha[tɕi / [ha]tɕi	tɕi[zu	tɕʔi[mu	[ʔi]tɕi	ho[:]tɕi
Araki	[a:]tɕi[: / tɕi[:	mi[tɕi	ha[tɕi	ki[zu	tɕi[mu	[ʔi]ki / [ʔi]tɕi	ho[:]tɕi

[a], [u], [o] can follow [tɕ]. Examples are listed in Table 15.4. *t* in '*tomorrow*' and '*person*' is palatalized into [tɕa] and [tɕu] in the environment X*i*+*t*V (where X and V are any consonant and vowel), while *kʲ* becomes [tɕ] in '*children*' and '*cucumber*'. [tɕo] in '*knife*' is perhaps a heavily Japanized pronunciation.

Table 15.4 [tɕ]

number / word / point	235	2-44	92	172	246	148
	tomorrow	*children*	*person*	*thread*	*cucumber*	*knife*
Onotsu	a[tɕa	[kʷʲa]ɴ[kʲa]: / [wa]ɾabɪɴ[kʲa]:	[tsʲu	i[tu / [i]tsu[:	NR	[ɸo]:[tɕa]:
Shitōke	ʔa[tɕa	[kʷʲa]ɴ[tɕa]: / [wa]ɾabɪɴtɕa[:	[tɕʲu	[ʔi]tu	kʲʔi[u]i	[ho]:[tɕu]: / [ho]:[tɕa]:
Shiomichi	a[tɕa	[kʲa]ɴ[tɕa]: / [wa]ɾabiɴ[tɕa]:	[tɕʲu	i[tɕu: / i[tsu:	[tɕi]u[i	ha[ta]na
Sakamine	ʔa[tɕa	[kʲa]ɴ[tɕʲa]: / [waɾabi]ɴ[tɕʲa]:	[tɕʲu	ʔi[tu]:	--	[pʰo]:[tɕo]: / ha[ta]na
Aden	a[tɕa	[kʲa]ɴ[tɕa]: / [wa]ɾabiɴ[tɕa]:	[tɕʲu	i[tɕu]:	[tɕʲi]u[i	--
Kamikatetsu	ʔa[tɕʲa	[kʲa]ɴ[tɕa]:	tɕʲu	ʔi[tɕu]:	kʲu[:]ɾi	ha[ta]na
Wan	ʔa[tɕa	[kʲa]ɴ[tɕa]: / [waɾabi]ɴ[tɕa]:	tɕʲu	ʔi[tɕu]:	[tɕʲu]:[ɾi	[ho]:[tɕo]:
Nakasato	ʔa[tɕa	[kʲa]ɴ[tɕa]: / [waɾabi]ɴ[tɕa]:	[tɕʲuʔ	ʔi[tɕu]:	[tɕu]:[ɾi	ha[ta]na
Araki	a[tɕa	[kʷʲa]ɴ[tɕa]: / [waɾabi]ɴ[tɕa]:	tɕuʔ	i[tɕu]:	[kʲu:ɾi / kʲu[:]ɾi	ha[ta]na

The alveolar sounds in the Kikaijima dialects are summarized in Tables 16.1 and 16.2. First, in Onotsu and Shitōke (Northern), there is a distinction between [tɕʲi] and [kʲi] for the first mora of '*blood*' and '*liver*', but both are pronounced as [tɕi] in the other areas so that there is no distinction. Also, the first mora of '*face*' is pronounced

as [tsˀu] in Onotsu, Shitōke, Sakamine, and Araki, but as [tˀu] in Shiomichi, Aden, Kamikatetsu, Wan, and Nakasato. Next, in Shiomichi, Aden, Kamikatetsu, Wan, and Nakasato, there is no distinction between [d] and [z], with [z] merged into [d]. This is very different from the other dialects. In Sakamine (Central), the first mora of both '*blood*' and '*liver'* is pronounced as [tɕi], like other dialects such as Shiomichi. But like Onotsu, Shitōke, and Araki, the first mora of '*face*' is pronounced as [tsˀu] and there is a distinction between [d] and [z]. Therefore, Sakamine and Araki are grouped together here.

Table 16.1

Onotsu, Shitōke	ta	tɪ	tɕˀi	kˀi	tu	tsˀu	sa	ɕi	su
Shiomichi, Aden, Kamikatetsu, Wan, Nakasato	ta	ti	tɕˀi, tɕi		tu	tˀu	sa	ɕi	su
Sakamine, Araki	ta	ti	tɕˀi, tɕi		tu	tsˀu	sa	ɕi	su

Table 16.2

Onotsu	da	dɪ	du	zu / dzu	za	ʑi	
Shitōke	da	dɪ	du	zu / ʑu / dzu / dʑu	ʑa / dʑa	ʑi / dʑi	
Shiomichi, Aden, Kamikatetsu, Wan, Nakasato	da	di	du		da	di	ʑi / dʑi
Sakamine, Araki	da	di	du	zu / dzu	za	ʑi / dʑi	

(9) Alveolar Nasal n

The Kikaijima dialects have the alveolar nasal *n*, which corresponds to [n] in the Tokyo dialect. Vowels which follow are [a], [i], [ɪ], [u], and [e]. Examples are listed in Tables 17.1 and 17.2.

n is palatalized as [nʲ] before the vowel [i]. The range and phonological interpretation of [nʲi] and [nɪ] are explained in the section on vowels. [a] and [u] may follow [nʲ] (Table 17.3). As for '*spiral shell*' and '*yesterday*', it seems that *n* is palatalized in the environment X*i*+*n*V, and '*straw*' is the result of historical changes such as *muɲiwara* > *munʲiwara* > *munnʲara*.

Table 17.1 [n]

number / word / point	10	70	116	140	248	185
	name	*nose*	*rice bran*	*flea*	*life*	*seedling*
Onotsu	[na]:	[pa]na	nu[ka	nu[mi	[ʔi]nu[tɕi	ne[:

Shitōke	[na]:	[pa]na	nu[ka	nu[mi	[ʔi]nu[tɕi	ne[:
Shiomichi	na[:	pa[na	nu[ka	[nu]mi	i[nu]tɕi	ne[:
Sakamine	na[:	--	nu[ka	[nu]mi	ʔi[nu]tɕi	ne[:
Aden	na[:	pʰa[na	nu[ka	[nu]mi	i[nu]tɕi	ne[:
Kamikatetsu	na[:	ha[na	nu[ka	[nu]mi	ʔi[nu]tɕiu̥	ne[:
Wan	[na]ma[i	ha[na	nu[ka	[nu]mi	ʔi[nu]tɕi	na[e
Nakasato	na[:	ha[na	--	[nu]mi	ʔi[nu]tɕi	--
Araki	[na]ma[i	ha[na	nu[ka	nu[mi	i[no]tɕi	na[e

Table 17.2 [n]

number / word / point	16	36	153	24	89	102
	load	*crab*	*goblin*	*root*	*chest*	*bone*
Onotsu	[nʲi]mu[tsu	ga[nʲi]:	ʔu[nʲi	nɪ[:	[mu]nɪ	pu[nɪ / ɸu[nɪ
Shitōke	nʲi[:	ga[nʲi]:	[ʔu]nʲi	nɪ[:	[mu]nɪ	pu[nɪ]:
Shiomichi	nʲi [:	ga[nʲi]:	ʔu[nʲi	[hiɴ] pi[nʲi]: (beard of tree)	mu[ni	ɸu[ni]:
Sakamine	nʲi[:	ga[nʲi]:	ʔu[nʲi	ni[: / [mu]tu	mu[ni	[pʰu]ni
Aden	--	[gai]ɴ	u[nʲi	ni[:	mu[ni	ɸu[ni
Kamikatetsu	nʲi[:	ga[i]:	ʔu[nʲi	[ni]mu[tu	mu[ni	[ɸu]ni
Wan	nʲi[:	ga[nʲi]:	o[nʲi	nɪ[:	mu[nɪ	[ɸu]nɪ
Nakasato	nʲi[:	ga[nʲi]:	ʔu[nʲi	nɪmutu	mu[nɪ	[ɸu]nɪ
Araki	nʲi[:	ga[nʲi]:	o[nʲi	mu[tu	mu[ne	[ɸu]nɪ

Table 17.3 [n]

number / word / point	136	2.162	2.101	234
	spiral shell	*now*	*straw*	*yesterday*
Onotsu	NR	nʲa[ma	[mu]ɴnʲa[ɾa]:	ki[nʲu]:
Shitōke	[ʔa]ma[nʲa]:	nʲa[ma	[mu]ɴnʲa[ɾa]:	kʔʲi[nʲu]:
Shiomichi	mi[nʲa	[nʲa]ma	[mu]ɴnʲa[ɾa]:	tɕi[nʲu]:
Sakamine	mi[nʲa	[nʲa]ma	[muɴ]nʲa[ɾa]:	tɕi[nʲu]:
Aden	--	--	[mu]ɴnʲa[ɾa]:	tɕi[ju]:
Kamikatetsu	mi[ja	[na]ma	[muɴ]nʲa[ɾa]:	tɕi[ju]:
Wan	--	[nʲa]ma	[muɴ]nʲa[ɾa]:	tɕʔʲi[nʲu]:
Nakasato	mi[nʲa	[nʲa]ma	[muɴ]nʲa[ɾa]:	[tɕi]nʲu[:
Araki	mi[nʲa	[nʲa]ma	mu[gi]wa[ɾa]	tɕʔi[nʲu]:

(10) Alveolar Flap ɾ

The Kikaijima dialects have the alveolar flap ɾ. Vowels which follow are [a], [i], [u], [e], and [o]. It does not appear in word-initial position. Examples are listed below.

Table 18.1 [ɾ]

number / word / point	45	99	218	126	152	256
	dish	*face*	*chain*	*night*	*color*	*wash tub*
Onotsu	[sa]ɾa	tsˀu[ɾa	[kˀusaɾi / [kˀu]sa[ɾi	ju[ɾu	ʔi[ɾu	[ta]ɾe[:
Shitōke	[sa]ɾa	tɕu[ɾa	kˀu[sa]ɾi	ju[ɾu	ʔi[ɾu	ta[ɾe]:
Shiomichi	sa[ɾa	tu[ɾa	[kˀu]sa[ɾi	ju[ɾu	i[ɾu	ta[ɾe]:
Sakamine	sa[ɾa	tsu[ɾa	[ku]sa[i	ju[ɾu	ʔi[ɾu	ta[ɾe]:
Aden	sa[ɾa	tu[ɾa	kˀu[sa]ri	ju[ɾu	i[ɾu	[biɴ]da[ɾe]:
Kamikatetsu	sa[ɾa	tˀu[ɾa	NR	ju[ɾu	ʔi[ɾu	tʰa[ɾe]:
Wan	[so]:[da]ɾa	tu[ɾa	NR	ju[ɾu	--	tʰa[ɾe]:
Nakasato	sa[ɾa / [sara	tˀu[ɾa	[kusaɾi	ju[ɾu	ʔi[ɾu	ta[ɾe]:
Araki	sa[ɾa	tsu[ɾa	(kˀu[sa]ɾi)	juɾu	i[ɾu	ta[ɾe]:

Table 18.2 [ɾ]

number / word / point	2-45	2-22
	relative	*fist*
Onotsu	[ɸa]ɾo:[ʤi]:	[tekkˀo]:
Shitōke	[ha]ɾo:[ʤi]:	[tʰɪ]kko[:
Shiomichi	pʰa[ɾo:]ʤi / [pʰaɾo:ʤi]ɴ[tɕa]:	[tʰɪ]ku[ɾo]:
Sakamine	pa[ɾo]:[ʑi]: (sg.) / pa[ɾoʑi]ɴ[tɕˀa]: (pl.)	[tʰik]ko:
Aden	[ɸa]ɾo:[ʤi	tʰɪk[ko: / kˀa[ɸa
Kamikatetsu	[haɾo]:[ʤi]: / [so:de]ɴ[tɕa]:	tʰik[ko]:
Wan	[haɾo]:[ʤi]:	tʰik[ko]:
Nakasato	[haɾo]:[ʤi]:	tʰik[ko]:
Araki	ha[ɾo]:[ʤi]:	[tʰi]kku[ɾo]:

4.3 Velars

(11) Velars k kˀ g ŋ

There are two kinds of velar sounds: the stops *k*, *kˀ*, and *g*, and the nasal *ŋ*.

k and *kˀ* precede the vowels [a], [i], [ɪ], [u], [e], [ë], and [o]. Examples are listed in Tables 19.1 - 19.4. As explained in (8), in Northern Kikaijima the first mora of '*wound*' and '*liver*' is glottalized ([kˀi]), but is pronounced as [tɕi] in Central and Southern Kikaijima. As a result, in Northern dialects, the first mora of '*wound*' and '*liver*' ([kˀi]) is distinguished from the first mora of '*injury*' ([kɪ]), while [tɕi] is distinguished from [ki] in Central and Southern Kikaijima. Along with the change [kɪ] > [ki] in '*injury*', the consonant of [kˀi] in '*wound*' and '*liver*' is changed into the palatal [tɕ] in Central and Southern Kikaijima.

Onotsu, Shitōke		kˀi ('*wound*')	:	kɪ ('*injury*')
(	*	kˀi ('*wound*')	:	ki ('*injury*')
Central / Southern		tɕi ('*wound*')	:	ki ('*injury*')

The first mora of '*nail*' and '*cloud*', which is [ku] in the Tokyo dialect, and the first mora of '*calendar*' and '*voice*' ([ko] in Tokyo Japanese) appear as [kˀu] (glottalized) and [ku] (non-glottalized) in all dialects (Table 19.3).

Table 19.1 [k]

number / word / point	37 *rice porridge*	90 *model*	224 *roof tile*	229 *mirror*	116 *rice bran*	117 *grave*
Onotsu	ka[i]:	[ka]ta	ka[wa]ɾa	[ka]ga[mi	nu[ka	[pa]ka
Shitōke	ka[i]:	[ka]ta	[ka]wa[ɾa	[ka]ga[mi	nu[ka	[pa]ka
Shiomichi	ka[i	ka[ta	ka[wa]ɾa	[ka]ga[mi	nu[ka	pa[ka / [pa]kaɴ[me]:
Sakamine	ka[ju	ka[ta	--	[ka]ga[mi	nu[ka	pa[ka / ɸa[ka
Aden	ka[i	ka[ta	ka[wa]ɾa	[ka]ga[mi	nu[ka	ɸa[ka
Kamikatetsu	[kʰa]i[:	ka[ta	ka[wa]ɾa	[kʰa]ga[mi	nu[ka	ha[ka
Wan	kʰa[i	--	kʰa[wa]ɾa	[kʰa]ga[mi	nu[ka	ha[ka
Nakasato	kʰa[i / kʰa[ju	kʰa[ta	[kawaɾa	[ha]ga[mi / [kagami	--	ha[ka
Araki	[ka]i[:	ka[ta	ka[wa]ɾa	ka[ga]mi	nu[ka	ha[ka

Table 19.2 [k]

number / word / point	78 *fog*	49 *wound*	125 *time*	158 *breath*	148 *injury*	247 *compassion*
Onotsu	[kˀiɾi / ka[su]mi	[kˀi]zu	[tu]ki	ʔi[ki	kɪ[ga	[na]sa[kɪ
Shitōke	mu[ja	[kˀi]zu	tu[ki	ʔi[ki	kɪ[ga	[na]sa[kɪ

Shiomichi	mu[ja	kʔi[zu	NR	[ʔi]tɕi	ki[ga	na[sa]ki
Sakamine	--	kʔi[ʣu	tʰu[ki	[ʔi]tɕi	kɪ[ga	--
Aden	--	tɕi[du	tu[ki	[ʔi]tɕi	--	NR
Kamikatetsu	kʔi[ɾi	tɕi[du	[du]tɕi[:	[ʔi]tɕi	kʰi[ga	na[sa]ki
Wan	kʔi[ɾi	tɕi[du	NR	[ʔi]tɕi	--	NR
Nakasato	[mu]ja	tɕi[zu	--	[ʔi]tɕi	ki[ga / kɪ[ga	--
Araki	kʔi[ɾi	ki[zu	tu[ki	[ʔi]ki / [ʔi]tɕi	ke[ga	--

Table 19.3 [k]

number / word / point	64	130	174	225	196	241
	nail	*cloud*	*deep inside*	*calendar*	*voice*	*cousin*
Onotsu	[kʔu]nʲi	kʔu[mu	u[ku	[ku]ju[mi	ku[i	[i]tu[ku
Shitōke	kʔu[nʲi	kʔu[mu	[ʔu]kʔu	[ku]ju[mi	ku[i	[ʔi]tu[ku
Shiomichi	kʔu[nʲi	kʔu[mu	[ʔu]ku	[ku]ju[mi	[ku]i	[i]tu[ku
Sakamine	kʔu[nʲi	kʔu[mu	NR	[kʰu]ju[mi	[kʰu]i	--
Aden	kʔu[gi	kʔu[mu	[ʔu]ku	[ku]ju[mi	[ku]i	--
Kamikatetsu	kʔu[gi	kʰu[mo	[oku	[kʰu]ju[mi	[kʰu]i	[ʔi]tu[ku
Wan	--	kʔu[mu	NR	[kʰu]ju[mi	[kʰu]i	[ʔi]tu[ku
Nakasato	kʔu[nʲi	kʔu[mu	[ʔu]ku	[ku]ju[mi / [ɸu]ju[mi	[kʰu]i	[ʔi]tu[ku / ʔi[tu]ku
Araki	ku[gi / ku[ŋi	kʔu[mu	--	[ku]ju[mi	ku[i	(i[to]ko)

[k] and [kʔ] can be pronounced as [kʷʔ] (labiovelarized) and palatalized [kʲ] (shaded in Table 19.4). '*squid*', '*yesterday*', and '*cucumber*' show that [k] is palatalized in the environment X*i*+*k*V.

Table 19.4 [k]

number / word / point	232	30	28	176	246
	hand drum	*hoe*	*squid*	*today*	*cucumber*
Onotsu	NR	[kʷʔe]:	[ʔi]kʲa	kʲu[:	NR
Shitōke	[te]:[ko]:	[kʷʔë]:	[ʔi]ka	kʲʔu[:	kʔi[u]i
Shiomichi	[te]:[ko: / / [ta]i[ko]:	[kʔe]:	i[ka	[ɕu]:	[tɕi]u[i
Sakamine	--	[kʔe]:	ʔi[ka	[su]:	--
Aden	--	ke[:	[i]ka	[su]:	[tɕʔi]u[i
Kamikatetsu	[te]:[ko]:	kʔe[:	ʔi[ka	[su]:	kʲu[:]ɾi
Wan	--	[kʔe]: / [kʲʔe]:	ʔi[ka	[su]:	[tɕʔu]:[ɾi
Nakasato	--	[kʔe]:	ʔi[ka	[su]:	[tɕu]:[ɾi
Araki	--	[kʷʔe]:	i[ka	[su]:	[kʲu:ɾi / kʲu[:]ɾi

As for *g* and *ŋ*, *g* basically appears in word-initial position, and *ŋ* appears in word-medial position. Word-initial *g* is common in names of animals and plants such as '*crab*', '*crow*', and '*miscanthus*', as shown in Table 20.1.

ŋ is relatively stable in Northern Kikaijima, but *g* shows up instead in Central and Southern Kikaijima, except in '*dog*' (< inu+kwa) (ŋ is shaded in the table). In word-medial positon, *g* and *ŋ* are often in free variation, which reveals nasal degeneration. Also, when *ŋ* precedes [i], the mora is pronounced as [nʲi] and [nɪ] in some areas (e.g. [pinʲi] and [çinɪ] '*beard*', and [nʲinʲi:] '*right*' in Table 20.2, [kˀunʲi] '*nail*' in Table 19.3, and [muɴnʲaɾa:] '*straw*' in Table 17.3).

Table 20.1 [g], [ŋ]

number / word / point	36		184	229	148	135
	crab	*crow*	*miscanthus*	*mirror*	*injury*	*dog*
Onotsu	ga[nʲi]:	[ga]ɾa[sa]:	ga[ja	[ka]ga[mi	kɪ[ga	[i]ɴ[ŋa]:
Shitōke	ga[nʲi]:	[ga]ɾa[sa]:	ga[ja	[ka]ga[mi	kɪ[ga	[ʔi]ɴ[ŋa]:
Shiomichi	ga[nʲi]:	[ga]ɾa[sa]:	ga[ja	[ka]ga[mi	ki[ga	[i]ɴ[ŋa]:
Sakamine	ga[nʲi]:	[ga]ɾa[sa]:	ga[ja	[ka]ga[mi	kɪ[ga	[ʔi]ɴ[ŋa]:
Aden	[gai]ɴ	[ga]ɾa[sa]:	--	[ka]ga[mi	--	i[nu
Kamikatetsu	ga[i]:	[ga]ɾa[sa]:	ga[ja	[kʰa]ga[mi	kʰi[ga	[ʔi]ɴ[ŋa]:
Wan	ga[nʲi]:	[ga]ɾa[sa]:	ga[ja	[kʰa]ga[mi	--	[ʔi]ɴ[ŋa]:
Nakasato	ga[nʲi]:	[ga]ɾa[sa]:	ga[ja	[ha]ga[mi / [kagami	ki[ga / kɪ[ga	[ʔi]ɴ[ŋa]:
Araki	ga[nʲi]:	[ga]ɾa[sa]:	ga[ja	ka[ga]mi	ke[ga	[i]ɴ[ŋʷa]:

Table 20.2 [g], [ŋ]

number / word / point	32	72	252	251	111	91
	right	*beard*	*rabbit*	*freshwater eel*	*dirt*	*jaw*
Onotsu	nʲi[nʲi]:	[pi]nɪ	[u]sa[gi	[ʔu]na[ŋʲa]:	[pˀi]ɴgu	[ʔu]tuŋe[:
Shitōke	[mi]ŋi	[pi]nʲi / [pi]ŋi	[ʔu]sa[ŋi	[ʔu]na[ŋi	[pɪɴ]ŋu:	[ʔa]gu
Shiomichi	[mi]gi	pi[nʲi	u[sa]gi	u[na]gi	[pi]ɴ[gu: / [ɸi]ɴ[gu	ʔa[gu
Sakamine	[mi]gi	pi[ni	--	--	[pi]ɴ[du	ʔa[gu
Aden	[mi]gi	pʰi[gi]:	ʔu[sa]gi	[ʔu]na[gi	[pi]ɴ[gu	[u]tu[je]:
Kamikatetsu	[mi]gi	çi[gi	ʔu[sa]gi	ʔu[na]gi	[çi]ɴ[gu]:	[ʔa]gu
Wan	[mi]gi	--	u[sa]gi	NR	[çi]ɴ[gu	ʔa[gu
Nakasato	mi[gi	çi[nʲi / ɸi[ŋɪ	[ʔusagi	[ʔunagi	[çi]ɴ[gu]:	ʔa[gu
Araki	mi[gi	çi[nɪ	u[sa]gi	u[na]gi	[çi]ɴ[gu	a[go

4.4 Glottals

(12) Glottal Stop ʔ

When a vowel is in word-initial position, it is usually preceded by a glottal stop [ʔ]. However, glottal stops might be weakly pronounced. Examples are listed below.

Table 21 [ʔ]

number / word / point	260	28	29	40	85
	yawn	*squid*	*shrimp*	*cattle*	*sound*
Onotsu	[ʔa]ku[bi	[ʔi]kʲa	[ʔɪ]bi	[ʔu]ɕi	[ʔu]tu
Shitōke	ʔa[ku]bi	[ʔi]ka	[ʔɪ]bɪ	[ʔu]ɕi	[ʔu]tu
Shiomichi	a[ku]bi	i[ka	ʔi[bi	u[ɕi	u[tu
Sakamine	ʔa[ku]bi	ʔi[ka	ʔi[bi	ʔu[ɕi	ʔu[tu
Aden	ʔa[ku]bi	[i]ka	i[bi	u[ɕi	u[tu
Kamikatetsu	[ʔa]ku[bi	ʔi[ka	ʔi[bi	ʔu[ɕi	ʔu[tu
Sakamine	ʔa[ku]bi	ʔi[ka	ʔi[bi	ʔu[ɕi	ʔu[tu
Wan	ʔa[ku]bi	ʔi[ka	ʔi[bi	ʔu[ɕi	ʔu[tu
Nakasato	[akubi / [a]ku[bi	ʔi[ka	ʔi[bi	ʔu[ɕi	ʔu[tu
Araki	a[ku]bi	i[ka	e[bi	u[ɕi	o[to

(13) Glottal Fricative h

Southern Kikaijima *h* is explained in (1) so will not be dealt with here. In this section, only words which have [h] in the Northern dialects are examined.

The glottal fricative *h* appears only in word-initial position. There are cases where it is assumed to have arisen in word-medial position historically (e.g. *'alcoholic beverage*': *sake > *saxe > *sae > *sëː > seː etc), but in the modern languages such instances of [h] or [x] are rare. Vowels which follow *h* are [a], [i], [u], and [o]. When the following vowel is [i], *h* can become [ç], and when the following vowel is [u], *h* can become [ɸ]. However the difference between [hi] and [çi], or [hu] and [ɸu] is very subtle so it is difficult to distinguish the two. We were unable to clarify the difference in our survey due to lack of data. This should be investigated in future research.

Table 22.1 [h]

number / word / point	157	169	75	83	122	67
	shoulder	*sickle*	*wind*	*paper*	*jar*	*smell*
Onotsu	ha[ta	ha[ma	[ha]ʑi	[ha]bi	ha[mɪ	[ha]za

Shitōke	ha[ta	ha[ma	[ha]ʑi	ha[bi	ha[mɪ	[ha]ʑa
Shiomichi	ha[ta	ha[ma	ha[di	ha[bi	[ha]mi	NR
Sakamine	ha[ta	ha[ma	--	ha[bi	[ha]mi	--
Aden	ha[ta	ha[ma	ha[di	ha[bi	[ha]mi	ha[da
Kamikatetsu	ha[ta	ha[ma	ha[di	ha[bi	ha[mi	ha[da
Wan	ha[ta	ha[ma	--	--	[ha]mi	--
Nakasato	ha[ta	ha[ma	ha[di	ha[bi	[ha]mi	[nʲu]:[i / [nʲi]ju[i / ha[da
Araki	ha[ta	ha[ma	ha[ʑi	ha[bi	[ha]mi	ha[da

Table 22.2 [h]

number / word / point	168	42	87	138	103	178
	bamboo hat	*metal*	*fence*	*turtle*	*skin*	*corner*
Onotsu	ha[sa	[ka]ne	[ha]ki	ha[mɪ	ha[:	[ka]du
Shitōke	ha[sa	[ha]nɪ	ha[kˀi	[ka]mɪ	ka[wa	[ka]du
Shiomichi	ha[sa	NR	NR	ka[me / / [ha]mi	ka[wa	ka[du
Sakamine	ha[sa	ha[ni / xa[ni	[ʔi]ɕiga[tɕi	[ka]mi[ŋa]:	kʰa[wa	ha[du
Aden	ha[sa	ha[ni	[so]ɴ[na]tɕi	[ha]mi[:	ka[wa	ka[du
Kamikatetsu	ha[sa	ha[ni	NR	[ha]mi	kʰa[wa	kʰa[du
Wan	ha[sa	ha[nɪ	NR	[ha]mi[:	kʰa[wa	kʰa[du
Nakasato	ha[sa	ha[nɪ	[ʔi]ɕi[ga]tɕi	[ha]mi[:	ka[wa	kʰa[du / su[mi
Araki	ka[sa	ha[ni / ha[nɪ	ka[ki]ne	ka[mi / ka[me	ka[wa	ka[du

Table 22.3 [h]

number / word / point	22	1	31	115	213
	tree	*hair*	*lower back*	*rice*	*mold*
Onotsu	hɪ[:	[çi]:	[hu]ɕi	hu[mɪ	[ho]:[ʑi
Shitōke	ɕi[:	[çi]:	[hu]ɕi	hu[mɪ	[ho]:[ʑi
Shiomichi	hi[:	pi[nʲi / [ha]ɕɕia[ŋi]:	hu[ɕi	hu[mi	ho[:]ʑi
Sakamine	hi[:	ke[: / [has]sa[gi]:	hu[ɕi	hu[mi	ho[:]ʑi
Aden	ɕi[:	ɕi[:	hu[ɕi	hu[mi	[ho]:[ʑi
Kamikatetsu	ɕi[:	ɕi[gi]:	[ɸu]ɕi	ɸu[mi	[ho]:[ʑi
Wan	ɕi[:	ɕi[nʲi	hu[ɕi	hu[mi	[ho:]ʤi
Nakasato	ɕi[:	[has]sa[ŋi]: / [has]sa[nɪ]:	ɸu[ɕi / hu[ɕi	ɸu[mi / ɸu[mɪ	[ho:]ʑi
Araki	ɕi[:	ɕi[nɪ / ɕi[ŋi	ɸu[ɕi	ɸu[mi	[ho:]ʑi / ho[:]ʑi

The above *h* corresponds to the *k* in [ka], [ke], and [ko] in the Tokyo dialect. *ki* is pronounced as [kʔi] (Northern Kikaijima) and [tɕi] (Southern Kikaijima) rather than *hi*, and *ku* is pronounced as [kʔu], instead of [hu]. However, '*tree*' (Tokyo Japanese *ki*) becomes [hɪː], [hiː], and [ɕːi], not [kʔi] or [tɕi] (Table 22.3). Due to this, the Proto Kikaijima form for '*tree*' should be considered to be *ke, not *ki. Kamimura (1955, 1998) points out that in Old Japanese 'tree' may have been pronounced as *ke*, since in Amamiōshima, '*tree*' (Tokyo Japanese *ki*) and '*hair*' (Tokyo Japanese *ke*) are homophonous.

However, the consonant which corresponds to Tokyo dialect [ka], [ke], and [ko] is not always pronounced as *h*. For example, '*skin*' and '*corner*' in Table 22-2 are pronounced with [k] more than [h], (shaded). Additionally, the words in Table 22.4 and 22.5 are pronounced with [k] in all areas. It is necessary to use comparison with other Ryukyu dialects to determine which words tend to appear with [h] and which with [k].

Table 22.4 Tolyo dialect [ka] : Kikaijima dialect [k]

number / word / point	37	90	220	219	224	229
	rice porridge	*model*	*shape*	*skipjack tuna*	*roof tile*	*mirror*
Onotsu	ka[i:	[ka]ta	[ka]ta(model)	ka[ʦu]:	ka[wa]ɾa	[ka]ga[mi
Shitōke	ka[i:	[ka]ta	ka[ta]tɕi	ka[ʦu]:	[ka]wa[ɾa	[ka]ga[mi
Shiomichi	ka[i	ka[ta	[ka]ta[tɕi	[ka]ʦu[o	ka[wa]ɾa	[ka]ga[mi
Sakamine	ka[ju	ka[ta	--	[kʰa]ʦu[:	--	[ka]ga[mi
Aden	ka[i	ka[ta	--	ka[ʦu]o	ka[wa]ɾa	[ka]ga[mi
Kamikatetsu	[kʰa]i[:	ka[ta	[kʰa]ta[tɕi	[kʰa]tu[:	ka[wa]ɾa	[kʰa]ga[mi
Wan	kʰa[i	--	[kʰa]ta[tɕi	[kʰa]tu[: / [kʰa]ʦu[:	kʰa[wa]ɾa	[kʰa]ga[mi
Nakasato	kʰa[i / kʰa[ju	kʰa[ta	[ka]ta[tɕi / [katatɕi	[katsuo	[kawaɾa	[ha]ga[mi / [kagami
Araki	[ka]i[:	ka[ta	[ka]ta[tɕi	ka[ʦuo	ka[wa]ɾa	ka[ga]mi

Table 22.5 Tolyo dialect [ka] : Kikaijima dialect [k]

number / word / point	148	196	205	225	18
	injury	*voice*	*heart*	*calendar*	*powder*
Onotsu	kɪ[ga	ku[i	NR	[ku]ju[mi	[me]ɾi[keɴ]ko
Shitōke	kɪ[ga	ku[i	[ku]ku[ɾu	[ku]ju[mi	ku[:
Shiomichi	ki[ga	[ku]i	NR	[ku]ju[mi	kʰu[na
Sakamine	kɪ[ga	[kʰu]i	[kʰu]ku[ɾu	[kʰu]ju[mi	[kʰu]:
Aden	--	[ku]i	tɕi[mu	[ku]ju[mi	--
Kamikatetsu	kʰi[ga	[kʰu]i	[kʰu]ku[ɾu	[kʰu]ju[mi	[kʰu]:

Wan	--	[kʰu]i	[ku]ku[ɾu	[kʰu]ju[mi	kʰu[na
Nakasato	ki[ga / kɪ[ga	[kʰu]i	[ku]ku[ɾu / [kukuɾu	[ku]ju[mi / [ɸu]ju[mi	kʰu[:
Araki		ku[i	NR	[ku]ju[mi	ko[na

The relationship of *p*, *ɸ*, *h*, and *k* is summarized in Table 22-6 ([h] and [ç] are shaded). *h* occurs more in Kamikatetsu, Wan, Nakasato, and Araki (Central and Southern Kikaijima), compared with Onotsu and Shitōke (Northern Kikaijima), Shiomichi, Sakamine, and Aden (Central Kikaijima). The fact that the first mora of '*wound*' becomes [kˀi] or [tɕi], and that of '*cloud*' becomes [kˀ] was explained in (11).

Table 22.6 [h] and [k]

	tooth	*shoulder*	*elbow*	*fart*	*tree*	*wound*	*boat*	*bone*	*rice*	*cloud*
Onotsu	pa	ha	pi	pi / ɸi	hɪ	kˀi	pu		hu	kˀu
Shitōke	pa	ha	pi	pɪ	çi	kˀi	ɸu	pu	hu	kˀu
Shiomichi	pa	ha	pi		hi	kˀi	ɸu		hu	kˀu
Sakamine	pa	ha	pi	ɸi	hi	kˀi	pu		hu	kˀu
Aden	pa	ha	çi	pi / ɸi	çi	tɕi	ɸu		hu	kˀu
Kamikatetsu	ha		çi			tɕi	ɸu			kˀu
Wan	ha		çi			tɕi	ɸu		hu	kˀu
Nakasato	ha		çi			tɕi	ɸu			kˀu
Araki	ha		çi			ki	ɸu			kˀu

4.5 Approximants

The Kikaijima dialects have the approximants *w* and *j*.

w might appear as the velar approximant [ɯɻ] and the palatal approximant [ɥ]. Vowels which follow are [a], [i], [ɪ], [u], and [e]. *wa* corresponds to Tokyo dialect [wa]. *wi*, *wɪ*, and *we* result from the merging of consecutive vowels such as *wai, *ui, *uɪ, and most instances appear with long vowels (e.g. '*tub*': *oke > *oxe > *oe > uɪ > ui > wiː, '*above*': *ue > uɪ > wɪː > wiː, and '*celebration*': *juwai > iweː). As explained in (1), *wu* derives from [wo] (shaded in Table 23.3).

Table 23.1 [w]

number / word / point	110	186	224	103	182
	belly	*straw*	*roof tile*	*skin*	*foxtail millet*
Onotsu	wa[ta	wa[ɾa	ka[wa]ɾa	ha[:	a[wa

Shitōke	wa[ta	wa[ɾa	[ka]wa[ɾa	ka[wa	ʔa[wa
Shiomichi	wa[ta	wa[ɾa	ka[wa]ɾa	ka[wa	a[wa
Sakamine	wa[ta	wa[ɾa	--	kʰa[wa	ʔa[wa
Aden	wa[ta	--	ka[wa]ɾa	ka[wa	[a]wa
Kamikatetsu	wa[ta	wa[ɾa / [wa]ɾa	ka[wa]ɾa	kʰa[wa	ʔa[wa
Wan	wa[ta	wa[ɾa	kʰa[wa]ɾa	kʰa[wa	ʔa[wa
Nakasato	wa[ta	wa[ɾa	[kawara	ka[wa	ʔa[wa
Araki	wa[ta	wa[ɾa	ka[wa]ɾa	ka[wa	a[wa

Table 23.2 [w]

number / word / point	201	2-32	207	2-102
	tub	*tub, niece*	*above*	*celebration*
Onotsu	u[ɪ	(w)u[ik]kʷʔa	[u]ɪ	[ju]:[we]:
Shitōke	u[ɪ	u[i]k[ka, uik[ka	[wɪ]:	[ju]we[:
Shiomichi	ta[re:(wash tub) // [wi]:	[ma]ta[be]:	wi[:	[ju:]je[:
Sakamine	NR	[wɪk]ka	[ɯi:	[ju:]je[:
Aden	[u]i / [wi]:	wi[:k]kʔa	[wi	[ju:]je[:
Kamikatetsu	NR	βik[ka	ɰi[:	[ju:]we[:
Wan	NR	[mi]:[ik]ka (tubniece)	[ɯi:	[ju:]je[:
Nakasato	tʰa[ɾu	mi[:]kka	ɯi[:	[jui]je[:
Araki	u[ki	mik[kʷa	wi[:	[ju:]je[: / ju[:]je[:

Table 23.3 （＝Table 3.3） [w]

number / word / point	34	38	36	33	175
	husband	*woman*	*aunt*	*uncle*	*the day before yesterday*
Onotsu	[u]tu	[u]na[ŋu	u[ba]:	u[ʣi]:	ʔut[tˀi]:
Shitōke	[u]tu	[u]na[ŋu	[ʔu]ba[kkɪ](:), [ʔu]ba	[ʔu]ɴ[mɯi]:	[wu]t[ti]:
Shiomichi	wu[tˀu	[wu]na[gu	[ʔa]ɴ[ma]: / ʔa[ni]:	[kˀi]ɴ[kˀa]:	wut[tˀi]: / [wu]t[ti]:
Sakamine	gu[tu	[gu]na[ŋu	ʔu[ba]:	ʔu[ʑi]:	[gu]t[tʰi]:
Aden	gu[tu	[gu]na[u	gu[ba	gu[ʣi	--
Kamikatetsu	ʔu[tu	[wu]na[u	wu[ba	ʔu[ʣi	ʔut[ti]:
Wan	wu[tu	[wu]na[gu	wu[ba]:	wu[ʣi]:	wut[tˀi]:
Nakasato	ʔu[tu	[ʔu]na[gu	ʔo[ba]: / ʔu[ba	ʔu[ʣi]:	ʔut[tˀi]:
Araki	ʔu[tu	[ʔu]na[ɯu	ʔo[ba]:	ʔu[ʣi]:	--

j precedes the vowels [a], [i], [ɪ], and [u]. *ja* corresponds to Tokyo dialect [ja], and *ju* corresponds to [ju] and [jo]. *ji* and *jɪ* correspond to Classical Japanese [je] (‘*handle*’ and ‘*branch*’ in Table 24-2.)

Table 24-1 [j]

number / word / point	2-80	128	184	112	78
	house	*mountain*	*miscanthus*	*parent*	*fog*
Onotsu	[ja:	ja[ma	ga[ja	[tu]ʑitu	[kˀiri / ka[su]mi
Shitōke	ja[:	ja[ma	ga[ja	ʔu[ja	mu[ja
Shiomichi	ja[:	ja[ma	ga[ja	ʔu[ja	mu[ja
Sakamine	ja[:	ja[ma	ga[ja	u[ja	--
Aden	[ja:	ja[ma	--	--	--
Kamikatetsu	ja[:	ja[ma	ga[ja	ʔu[ja	kˀi[ɾi
Wan	ja[:	ja[ma	ga[ja	u[ja	kˀi[ɾi
Nakasato	ja[:	ja[ma	ga[ja	ʔu[ja	[mu]ja
Araki	ja[: / [ja:	ja[ma	ga[ja	u[ja	kˀi[ɾi / mo[ja / mu[ja

Table 24.2 [j]

number / word / point	5	46	17	126	95	41
	handle	*branch*	*hot water*	*night*	*winter*	*fish*
Onotsu	[jɪ]:	[ju]da	ju[:	ju[ɾu	[pˀu]ju	[ʔi]ju
Shitōke	[ji]:	[ji]da / [ju]da	ju[:	ju[ɾu	[ɸu]ju	[ʔi]u
Shiomichi	ji[:	ju[da	ju[:	ju[ɾu	ɸu[ju	ʔi[ju
Sakamine	je[:	ji[da	ju[:	ju[ɾu	pu[ju	ʔi[ju
Aden	ji[:	ju[da	ju[:	ju[ɾu	ɸu[ju	i[ju
Kamikatetsu	ji[:	ju[da	ju[:	ju[ɾu	ɸu[ju	ju
Wan	NR	ju[da	ju[:	ju[ɾu	ɸu[ju	ʔi[ju
Nakasato	--	ji[da / ju[da	ju[:	ju[ɾu	ɸu[ju	ʔi[ju
Araki	ji[:	ju[da	ju[:	juɾu	ɸu[ju	i[ju

4.6 Inventory of Consonant Phonemes in the Kikaijima Dialects

To conclude, the inventory of consonant phonemes for the nine sites is given below. [ ] indicates allophones, and ( ) indicates that the sound is rare.

(1) Onotsu and Shitōke (Northern Kikaijima)

plosive	p[p / ɸ]	b	t	tˀ	d	k	kˀ	g	ʔ
nasal	m		n[n / nʲ]			ŋ			
affricate			ʦˀ	ʨ					
fricative			s[s / ɕ]	z[z / ʣ / ʒ / ʤ]					h
flap			ɾ						
approximant			j			w			

(2) Sakamine (Central Kikaijima)

plosive	p[p / ɸ]	b	t	tˀ	d	k	kˀ	g	ʔ
nasal	m		n	nʲ		ŋ			
affricate			ʦˀ[ʦˀ / ʦ]	ʨ					
fricative			s[s / ɕ]	z[z / ʣ / ʒ / ʤ]					h
flap			ɾ						
approximant			j			w			

(3) Wan (Central Kikaijima)

plosive	(p)	b	t	tˀ	d	k	kˀ	g	ʔ
nasal	m		n	nʲ		ŋ			
affricate			(ʦ)	ʨ					
fricative			s[s / ɕ]	ʒ[ʒ / ʤ]					h[h / ç / ɸ]
flap			ɾ						
approximant			j			w			

(4) Nakasato (Central Kikaijima)

plosive	(p)	b	t	tˀ	d	k	kˀ	g	ʔ
nasal	m		n[n / nʲ]			ŋ			
affricate			ʨˀ[ʨˀ / ʨ]						
fricative			s[s / ɕ]	(z)	ʒ[ʒ / ʤ]				h[h / ç / ɸ]
flap			ɾ						

approximant				j					w			

(5) Shiomichi and Aden (Southern Kikaijima)

plosive	p[p / ɸ]	b		t	tˀ	d			k	kˀ	g	ʔ
nasal	m			n	nʲ				ŋ			
affricate					tɕ							
fricative				s[s / ɕ]			ʑ[ʑ / dʑ]					h
flap				ɾ								
approximant				j					w			

(6) Kamikatetsu (Southern Kikaijima)

plosive	(p)	b		t	tˀ	d			k	kˀ	g	ʔ
nasal	m			n	nʲ				ŋ			
affricate					tɕ							
fricative				s[s / ɕ]			ʑ[ʑ / dʑ]				h[h / ç / ɸ]	
flap				ɾ								
approximant				j					w			

(7) Araki (Southern Kikaijima)

plosive	(p)	b		t	tˀ	d			k	kˀ	g	ʔ
nasal	m			n	nʲ				ŋ			
affricate				ts	tɕ							
fricative				s[s / ɕ]		z[z / dz / ʑ / dʑ]					h[h / ç / ɸ]	
flap				ɾ								
approximant				j					w			

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