

**TUNING AND SCALE SYSTEMS  
OF THE IKUTA SCHOOL OF KOTO**

by  
**Kazuko Kobryn**







Tuning and Scale Systems of the Ikuta School of Koto

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A Document

in Support of a Graduate Lecture-Recital

Presented to the

Department of Music

San Diego State University

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In Partial Fullfillment

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Master of Arts

in

Music

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Spring 1991



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## PREFACE AND ACKNOWLEDGMENTS

This paper is the result of two years of research and practice on the thirteen-string Japanese koto. It brings to closure a circular path in my study of music: I began studying classical piano in Japan as a young child; several decades later I find myself studying classical koto in the United States.

Koto music has an especially enchanting beauty for me. I enjoy its refined elegance above all other musical sounds. I am grateful that I have had the opportunity to study it for the past two years. (It has been well worth the extra year or so it required in order to complete my M.A.)

My research was greatly assisted by many knowledgeable and talented persons. I thank the members of my Lecture-Recital Committee--Dr. Robert E. Brown, Dr. Lewis E. Peterman, Dr. David Ward-Steinman, and Dr. James Reid--for their constant advice and support. Dr. Brown's knowledge and enthusiasm have provided guidance and encouragement throughout my ethnomusicology studies. Dr. Peterman's emphasis on anthropological and psychological aspects of ethnomusicology broadened my thinking about this interdisciplinary field. Dr. Ward-Steinman's lectures on Western music theory and analysis were extremely helpful in the analysis of koto tuning and scale systems. Dr. Reid's expert knowledge of Japanese *gagaku* music was invaluable in the preparation of this paper.



I am also grateful to the Japanese musicians who helped me befriend this difficult instrument. I remember with great fondness my first koto sensei, Yoko Gates, whose mastery and devotion to the koto generated a powerful inspiration to begin and persist in my practice. I thank my current sensei, Hiromi Hashibe, who carefully and patiently taught me a small part of her beautiful art. I also acknowledge the help of Masakazu Yoshizawa, whose expert advice and superb shakuhachi playing were a constant reassurance during my recital practice and performance.



## A NOTE ON TRANSLITERATION

<sup>a</sup>  
Japanese vowels are pronounced as follows:

a	as in "father"
e	as in "pet"
i	as in "machine"
o	as in "horse"
u	as in "put"

Long vowels in Japanese are represented in this work as double vowels:

aa	long a
ee	long e
ii	long i
oo	long o
uu	long u



## CHAPTER I

### INTRODUCTION: HISTORICAL BACKGROUND OF KOTO MUSIC

The history of Japanese music extends over two millennia. During this time musical styles evolved through several periods of strong foreign influence and traditional renaissance. There are five major periods in Japanese music history: (1) ancient native music (pre-seventh century); (2) continental Asia-influenced music (seventh century-twelfth century); (3) national music (twelfth century-sixteenth century); (4) expanded national music (sixteenth century-nineteenth century); and (5) Western-influenced music (late nineteenth century-early twentieth century).<sup>1</sup> If the first period is considered the baseline, the second and fifth periods are eras of foreign influence, while the third and fourth are intervals of traditional renaissance. It has been suggested that the late twentieth century marks the beginning of a sixth period that may be categorized as another era of traditional renaissance.<sup>2</sup> As a result, Japanese musical styles may be categorized according to the extent of foreign and traditional influences.

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<sup>1</sup> K. Toyama and S. Ebizawa (eds.) "Hogaku," *Larousse de la Musique* (Japan: Hikutake Publishing Co., 1989), p. 1188. S. Kishibe, "History," *The Traditional Music of Japan* (Tokyo, Japan: Ongakunotomoshu, 1982), p. 2.

<sup>2</sup> Eishi Kikkawa, *Nihon Ongaku no Rekishi* (*The History of Japanese Music*), p. 5.



Traditional music consists of flexible musical elements such as pitches and time values. In contrast, foreign-influenced music is composed of predetermined musical elements in pitch and rhythm. A third category is the musical style that combines both features (i.e., uses both flexible and predetermined elements in musical compositions).<sup>3</sup>

When all three categories are comparatively evaluated, it becomes evident that the balance between dynamism and rigidity is a major common factor in the analysis of Japanese music. This balance is expressed in the *jo-ha-kyuu* ("entering-breaking-hastening") principle, which is based on Japanese aesthetics significantly influenced by religious philosophies (Shintoism, Buddhism, and Confucianism).<sup>4</sup>

The history of today's thirteen-string koto music may be traced to the *gagaku*<sup>5</sup> music in the imperial court of the eighth century. However, there is evidence from excavated *haniwa*<sup>6</sup> figurines and ancient chronicles that a compact form of the koto (played on a man's lap) existed before then. Unfortunately, the

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<sup>3</sup> K. Toyama and S. Ebizawa (eds.) "Hogaku," *Larousse de la Musique* (Japan: Hukutake Publishing Co., 1989), pp. 1188-92.

<sup>4</sup> Like Japanese music, Japanese religions represent an interesting mix of native (Shintoism) and imported (Buddhism, Confucianism) influences.

<sup>5</sup> A form of Japanese court orchestra.

<sup>6</sup> Ancient burial mound figurines.



music associated with these ancient instruments does not exist today.<sup>7</sup>

The modern koto is thought to have originated in China and was imported into Japan in the early eighth century. A similar form of koto called *wagon* (a six-stringed zither used in early *gagaku*) is claimed to be indigenously Japanese. In those days, the word *koto* was applied to several different kinds of string instruments (e.g., *biwa-no-koto*, *kin-no-koto*, *kudara-goto*, *soo-no-koto*<sup>8</sup>). The instruments used today have lost the *no-koto* suffix. The words *soo* and *koto* are used interchangeably today.<sup>9</sup> With the establishment of the national *gakusei-kaikaku*<sup>10</sup> organization in the tenth century, many foreign instruments, including the *kin-no-koto* and the *kudara-goto*, disappeared.

During the following six hundred years, the koto was mostly played by court professional musicians and by a small numbers of the aristocratic class. In the late-sixteenth century, however, a Buddhist priest named Kenjun (1547-1636) introduced innovative changes to the then existing koto music of *gagaku* and established

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<sup>7</sup> E. Kikkawa, *Nihon Ongakuno Rekishi* (Osaka: Sogensha, 1965), pp. 6-10.

<sup>8</sup> *Biwa-no-koto* is a four-string short-neck lute. *Kin-no-koto* refers to the Chinese seven-string zither called *chi'n*. *Kudara-goto* refers to the Korean harp called *kugo*. *Soo-no-koto* is the thirteen-string zither which today is called *soo* or *koto*.

<sup>9</sup> The koto is thought to have evolved from the Chinese instruments *cheng* and *se*. *The New Grove Dictionary of Music and Musicians*, 6th ed., s.v. "Japan", pp. 526-28.

<sup>10</sup> An organization for music reform (c. 10th century).



the first school of koto called *Tsukushi-ryuu*<sup>11</sup> in northern Kyushu island. Kenjun's innovations included: (1) the addition of newly composed vocal parts, (2) an improvement in the notation system, (3) changes in the tuning system, (4) modification of the plucking technique, and (5) more complex musical arrangements. He established prototypes of the song-cycle form, *kumiuta*, and defined the theory for the whole-tone scale, which became the most fundamental tuning scale of koto music. His school enforced severe rules (based on aristocratic and religious traditions) which emphasized chasteness and purity (e.g., banning women and professional musicians from formal instruction). As a consequence, the school became unpopular. Today, it is almost extinct.<sup>12</sup>

In the middle of the seventeenth century, in violation of the *Tsukushi-ryuu*'s rules, koto music was taught to the blind professional shamisen musician, Kengyoo<sup>13</sup> Yatsushashi (1614-1685) in Edo.<sup>14</sup> Yatsushashi is considered to be the father of modern koto music and was the founder of the *Yatsushashi-ryuu*.<sup>15</sup> Yatsushashi's innovations included the arrangement and rearrangement of *Tsukushi-ryuu* music,

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<sup>11</sup> *Ryuu* means "school". Consequently, *Tsukushi-ryuu* means "Tsukushi school."

<sup>12</sup> *The New Grove Dictionary of Music and Musicians*, 6th ed., s.v. "Japan," p. 467.

<sup>13</sup> The highest title given to professional musician by the government at that time.

<sup>14</sup> Present-day Tokyo.

<sup>15</sup> He is also the founder of a shamisen school called *Yatsushashi-ryuu*.



new compositions (two *danmono*,<sup>16</sup> and thirteen *kumiuta*<sup>17</sup>), and the creation of new scales (the *in* system<sup>18</sup> and *hira-jooshi*<sup>19</sup>). Two of his works (*Midare* and *Rokudan*) are among the best-known koto compositions played today. Yatsushashi-ryuu became the basis for two successive koto schools, Ikuta-ryuu and Yamada-ryuu, which are now the main traditional schools.

In the late-seventeenth century, the development of bourgeoisie class culture resulted in a combination of the koto and the *shamisen*<sup>20</sup> in a form of music called *jiuta*.<sup>21</sup> The musician leading this collaboration was Kengyoo Ikuta (1655-1715) who is credited with complementing the *shamisen* with the koto, extending instrumental interludes between songs, and expanding performance techniques. He also modified the shape of the plectrum and developed new tunings.

The relationship between the *shamisen* and the koto changed gradually through the work of Kengyoo Ikuta's disciples. They developed koto music to the point where the koto part became comparable in importance to the *shamisen* part. In short, virtuoso

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<sup>16</sup> A sectional music form. See Chapter III.

<sup>17</sup> A song-cycle compositional form.

<sup>18</sup> A five-tone scale system, containing three subtypes. See Chapter IV.

<sup>19</sup> A koto tuning derived from the *in* system. See Chapter IV.

<sup>20</sup> A three-string long-neck plucked lute.

<sup>21</sup> A form of folk or popular ballad.



koto music began to appear, as did new tuning scales. The Ikuta-ryuu, founded by Kengyoo Ikuta, was developed mainly in the Kyoto and Osaka (Kansai) areas until the late nineteenth century, when territorial barriers were no longer maintained.<sup>22</sup>

In the late-eighteenth century, while Kengyoo Mitsuzaki and Kengyoo Kikuzaki were developing the *tegotomono* (expanded *ainote*<sup>23</sup>) in the *Kansai* area, Kengyoo Yamada (1756-1817) began *Yamada-ryuu* in the Tokyo area.<sup>24</sup> His music featured the koto as the main instrument (rather than the shamisen) for narrative and dramatic vocal music. He made several changes in the koto construction and performing techniques in order to increase volume. His innovations were strongly favored due to the gaiety and flashiness of his music, and his school produced many important disciples.<sup>25</sup>

By the middle of nineteenth century, a reactionary style of composition was widely recognized. The characteristics of this style include a shamisen exclusion, a short instrumental section replacing the longer instrumental section, and texts derived from ancient poetry.<sup>26</sup> The significant composers of the reactionary

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<sup>22</sup> E. Kikkawa, *Nihon Ongakuno Rekishi* (Osaka: Sogensha, 1965), pp. 309-11.

<sup>23</sup> A short instrumental interlude.

<sup>24</sup> E. Harich-Schneider, *A History of Japanese Music* (London: Oxford University Press, 1973), p. 519.

<sup>25</sup> E. Kikkawa, *Nihon Ongakuno Rekishi* (Osaka: Sogensha, 1965), pp. 290-91.

<sup>26</sup> W. Adriaanz, *The Kumiuta and Danmono Tradition of Japanese Koto Music* (Berkeley, University of California Press, 1973), p.17.



style are Kengyoo Mitsuzaki (d. 1853) and Kengyoo Yoshizawa (d. 1872), both of whom not only made style changes,<sup>27</sup> but also developed new tunings.<sup>28</sup> Other notable works of this period include the production of detailed manuscripts and the renovation of the notation system (e.g., *Sookyokudaishuu* by Shookoku Yamada, *Akikaze no Kyoku* by Kengyoo Mitsuzaki, and *Genkyoku-Taishinshuu* (edited) by Kengyoo Mitsuzaki, etc.)<sup>29</sup> From the early-seventeenth century through the middle of the nineteenth century, koto music went through many changes and substantial innovations, reflecting social and cultural environments. In the early-nineteenth century Japan was still an isolated feudal nation. The following hundred years of modernization involved profound foreign influence (out of the isolation) throughout Japan, including the music field.

With the reopening of Japan to the world in the late-nineteenth century, after about three hundred years of isolation and the revival of the Imperial court government, many music rules were changed. In the music field, the government-assisted Kengyoo and Kooto systems were cancelled and a national music education

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<sup>27</sup> Ibid. Music of this style is called *Kokingumi*, *Shin-Kokingumi*, and *Tempogumi*. See the Appendices.

<sup>28</sup> Some of examples are *kokin-jooshi*, *kokin-shincho-sofuren-jooshi*, *akikaze-jooshi*, etc. See Chapter IV.

<sup>29</sup> E. Kikkawa, *Nihon Ongakuno Rekishi* (Osaka: Sogensha, 1965), pp. 312-14.



system was established.<sup>30</sup> Strongly influenced by Western music, significant innovations occurred in koto music during this period through the middle of the twentieth century. Koto music was used to experiment with mixing Western and Japanese music principles. For example, the chamber music form called *sankyoku*<sup>31</sup> became popular: many modes were tried, harmony-like effects were created, Western polyphonic style were applied, and new rhythms were adopted (e.g., triple meter). In addition, many new playing techniques were applied and several new instruments were invented. The music created with these features is called *Meiji-Shinkyoku* ("Meiji new music").<sup>32</sup>

The importation of Western music system into Japanese music was accomplished most successfully by Michio Miyagi (1894-1956) of Ikuta-ryuu. His compositions number over 350, and consist of traditional art music, military music, court music, and children's songs. His invention of new instruments (e.g., *juushichigen-kin*, *hachijuugen-kin*, and *tangoto*<sup>33</sup>) helped widen melodic ranges and

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<sup>30</sup> E. Harich-Schneider, *A History of Japanese Music* (London: Oxford University Press, 1973), pp. 540-42.

<sup>31</sup> A trio form, practiced with shamisen, koto, and one other instrument (usually shakuhachi ; originally kokyuu was used).

<sup>32</sup> W. Adriaanz, *The Kumiuta and Danmono Tradition of Japanese Koto Music* (Berkeley, University of California Press, 1973), p. 20.

<sup>33</sup> *Juushichi-gen-kin* is a 17-string zither, whose highest tone is lower than the thirteen-string koto's lowest tone (1913). *Hachijuugen-kin* is a 80-string zither which was built to have approximately the same tonal ranges as a piano (1929). *Tangoto* is a shorter version (1.38 m.) of the koto with adjustable legs and metal pegs (1932).



broaden the capabilities of harmonic constructions. The *Shin-Nihon-Ongaku* ("new Japanese music") group was led by Miyagi from about 1915.<sup>34</sup> His contributions to koto music were considered so significant that the Miyagi-ryuu was later established as a subdivision of Ikuta-ryuu.

Influenced by the social climate of the late-nineteenth to early-twentieth centuries, both major ryuu began to intermingle, resulting in the intermixed koto musics of the Yamada and Ikuta ryuu. Today, many of the same pieces are performed in both schools.

Some differences between the schools are still apparent, such as the Yamada-ryuu's emphasis on vocal parts and the Ikuta-ryuu's stress on instrumental parts. The Yamada-ryuu's vocal part is narrative and dramatic while the Ikuta-ryuu's vocal part is lyrical.<sup>35</sup> The intermingling of the two most influential koto schools, the elimination of old rules, and the establishment of new government school systems (e.g., *Tookyoo Ongaku Gakkoo*: "Tokyo Academy of Music") resulted in wider freedom for Japanese music. Reflecting the cultural environment, scientific research and development in the music field was vigorously undertaken. As a

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<sup>34</sup> E. Kikkawa, *Nihon Ongakuno Rekishi* (Osaka: Sogensha, 1965), p. 444.

<sup>35</sup> *Ibid.*, p. 257.



result, many scholarly works appeared in the early-twentieth century. Some of the significant music research centers in Japan during this period were *Tookyoo Ongaku Gakkoo*, *Hoogaku Kenkyuusho*, and *Tookyoo Moogakkoo*. One of the leading scholars during this time was Hisao Tanabe, who was a composer, performer (violin), musicologist, and theorist. *Nihon Dentoo Ongaku no Kenkyuu* ("Research on Traditional Japanese Music"), *Nihon Ongaku Gaisetsu* ("The Outline of Japanese Music"), and *Nihon Ongakushi* ("The History of Japanese Music") are some of his best known books. His works were followed by many scholars, such as E. Kikkawa, S. Kishibe, and F. Koizumi.<sup>36</sup>

After World War II, reflecting the world-wide trend to preserve and revive cultural traditions, another renaissance of traditional music began. Even though many variations of foreign musical ideas (e.g., twelve-tone principles, harmony systems, chance-music ideas, etc.) were explored, the basic structures and tonality of traditional music retained their identities.

In conclusion, substantive innovations in koto music occurred during Japan's isolation in the period of the seventeenth and eighteenth centuries and during its reopening period, the nineteenth and twentieth centuries. Prior to this period of change

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<sup>36</sup> E. Kikkawa, *Nihon Ongakuno Rekishi* (Osaka: Sogensha, 1965), pp. 432-42.



koto music was considered a serious and sacred art played only by the aristocracy. Consequently, the most important changes in traditional koto music are generally considered to have occurred during the last four hundred years.

During the last century koto music has been the object of significant scholarly research. Although a rather accurate form of koto notation has existed since the sixteenth century (due to the ryuu system, the oral tradition, and the association of the koto with the bourgeoisie class), few standardized text sources exist.

There are several comprehensive studies of koto music in both Japanese and English.<sup>37</sup> Specialized studies that focus on the tuning and scale systems are not abundant in Japanese, and English translations are almost nonexistent. The scarcity of English-language studies of koto tuning and scale systems has been a major impediment to the serious study of the koto in the West. This discussion will focus on the thirteen-string koto scale system and its relationship to the tuning system. It will begin with a description of koto construction and playing techniques.

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<sup>37</sup> Eishi Kikkawa's *Nihon Ongaku* and *Sokyoku to Jiuta no Rekishi*, Bonny Wade's *Tegotomono*, Willemn Adriaanz's *The Kumiuta and Danmono* and articles in *The New Grove Dictionary of Music and Musicians* and the *Ongaku Jiten*.



## Chapter II

### KOTO CONSTRUCTION AND PLAYING TECHNIQUES

The koto is a thirteen-string zither which has survived as the most popular solo and chamber instrument for traditional Japanese music. The instrument has a shape which suggests an ancient dragon. The body of the koto (*koto*) is usually made of paulonia wood,<sup>38</sup> and is about six feet in length and ten inches in width. The instrument is made from two planks, with the top one hollowed, curved, and attached to a thin bottom one. The bottom plank contains two bored-out holes to resonate sound. Both ends (the "head" and "tail") have low built-in bridges<sup>39</sup> across the koto's width. The head end has two 3 1/2 to 4 inch support legs (*ashi*) made from the same materials as the built-in bridges. Thirteen silk (or nylon) strings (*gen*) of equal thickness are fastened between the head and tail of the instrument. The thirteen movable bridges (*ji*) are made of ivory or plastic.<sup>40</sup>

Each koto string is tautly fastened to the tail end of the

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<sup>38</sup> Cherry wood is sometimes used.

<sup>39</sup> The head side bridge is called *ryuukaku* and the tail side bridge is named *kashiwa*. They are normally made of Chinese quince, red sandalwood, or rosewood.

<sup>40</sup> S. Kishibe, "Sokyoku," *The Traditional Music of Japan* (Tokyo, Japan: Ongakunotomosha, 1982), p. 57.

E. Kikkawa (ed.), "Koto," *Hogaku Hyakkajiten* (Tokyo, Japan: Ongakunotomosha, 1984), pp. 395-397.



instrument. Excess strings are tacked in at the tail end, and may be used to fix string breakages by pulling them out. The movable bridges are used to tune the strings in accordance with the various five-tone tuning systems for individual compositions.

The strings are plucked with three ivory or plastic picks (*tsume*) fitted to a player's right hand (thumb, index, and middle) fingers. Basic plucking techniques generally follow natural movements of the fingers. However, many other types of plucking movements exist to produce varieties of sound. In addition, there are a variety of left-hand playing techniques for manipulating the tone. There are about thirty right-hand and left-hand techniques recognized today.<sup>41</sup>

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<sup>41</sup> B. Wade, *Tegotomono Music for the Japanese Koto* (Westport: Greenwood Press, Inc., 1976), pp. 20-28.

W. Adriaanz, *The Kumiuta and Danmono Tradition of Japanese Koto Music* (Berkeley, University of California Press, 1973), pp. 50-60.

E. Kikkawa (ed.), *Hogaku Hyakkajiten* (Tokyo, Japan: Ongakunotomosha, 1984).

K. Hirano, *Nakanojima Kinnichi Zenshu* (Tokyo: Kinnyosha, 1973).



## Right-Hand Techniques of The Koto

1. *sukuizume* ("scooping pick") is an upstroke made with the thumb. The string is plucked with the back of the pick.
2. *uraren* ("downward set"; also called *sararin*) is a downward glissando. It begins with a rapid tremolo using the index finger on the glissando's beginning pitch and is concluded by plucking two or three notes with the thumb.



3. *kororin* ("longer downward set") is a three-note figure made with a downward motion of the thumb.



4. *awasezume* ("together pick") is the plucking of two strings, often an octave apart, with the thumb and middle fingers. Slight variations in timing are allowed.



5. *surizume* ("scratching/rubbing pick") is the scraping of two adjacent strings with the index and middle fingers. The initial motion from right to left is reversed after a brief pause.
6. *waren* ("round unit") is a fast sliding motion along a string (normally string 1). This circular motion is made with the middle finger moving from right to left. (The hand motion makes a circle).



7. *warizume* ("dividing pick") is the successive (two times) plucking of two adjacent strings with the index and middle fingers. Afterwards the octave of the lower pitch is usually played with the thumb.



8. *kakezume* ("cuffed/racked pick") is the plucking of two adjacent strings in ascending order with the index finger while plucking two other strings in a similar manner with the middle finger. The pattern is usually concluded with the octave of the lowest pitch being plucked by the thumb. There are many variations of this technique.



9. *hikiren* ("pulling unit") is an upward glissando over all strings. Normally the first two and the last two or three notes are the most pronounced.



10. *kakizume* ("scratch pick") is the plucking of two adjacent strings very rapidly with the index or middle finger. The two notes sound almost simultaneously.



11. *oshiawase* ("push together") is the plucking of two adjacent strings very rapidly with the thumb, while the lower note string is pressed by the left hand, in order to produce a



unison with the higher note.



12. *nagashizume* ("pour/let flow pick") is a downward glissando played with the thumb. The first two and the last two or three notes are the most pronounced.



13. *chirashizume* ("scatter pick") is a quick, light, and half-circular motion with the middle finger from right to left.

#### *Left-Hand Techniques of The Koto*

1. *oshide* or *osae* ("push/pressing hand") is the pressing of a string on the left side of the bridge before plucking to produce extra pitches (normally a half-step, a whole-step, or one-and-a-half-steps higher than the open string).



2. *ato osae* ("after pushing/pressing") is the pressing down of a string after an open string is plucked. The pitch will normally be raised to the next tone of the scale.



3. *akeosae* ("bracketed pressing") is the successive pressing



down with the thumb and two other fingers on two different strings in order to raise two pitches.



4. *hikiiro* ("pulling color") is the pulling of a string to the right, just left of the bridge, with the thumb and index finger. It is used to lower the plucked pitch.



5. *yuriiro* ("vibrating color") is the pressing of a string left of the bridge to effect a vibrato.



6. *tsuki osae* ("thrusting pressing") is the pressing and releasing of a string in order to produce an upper-neighboring tone.



7. *kesizume* ("erasing pick") is the light touching of the plucked string in order to produce a staccato effect.



8. *soezume* ("adding nail") is the light touching of the vibrating string with the index finger nail in order to produce a buzzing sound.



Many other techniques not mentioned are some varied forms of those above described. These playing techniques are mostly orally transmitted and their expressions and names differ in other schools. They play an important role in idiomatic expressions of koto music. Many of these koto playing techniques are used to create sounds inspired by nature (e.g., flowing water, rustling wind, falling leaves, etc.). In koto music the expression of human emotion related to nature is emphasized. Emotion tends to be expressed in a subtle and restrained manner.



### Chapter III

#### TUNINGS AND MUSICAL STRUCTURES OF KOTO MUSIC

This chapter provides a brief structural analysis of three selected koto compositions: (1) *Natsu no Kyoku*, (2) *Karaginuta*, and (3) *Gen no Shirabe*.

The sound of koto music is, in general, elegant and serene. The complexity of koto music construction is restrained and constrained in order to produce a pure and simple sound. This is consistent with the koto's *gagaku* (court) music heritage. The texture of koto music is relatively thin because of its static harmonic structure (triadic harmony is almost non-existent). In general, emphasis is placed on melodic and rhythmic constructions of each line--a feature that is true of Japanese music in general. Results which conform to Western polyphonic principles are achieved through melodic and rhythmic construction. Contrasting conjunct and disjunct lines (two instrumental lines vs. each other, or vocal vs. instrumental lines) are used simultaneously in the construction of music. Often two different tunings are applied at the same time. (See the *Karaginuta* example in Chapter IV.)



The tunings reflect the tonalities of the various pentatonic modes on which they are built. (e.g., the *in* and *yo* tuning systems). The thirteen-string koto tuning range is approximately two-to-three pentatonic octaves. The tonal construction is based on predetermined pitches with relative intervals. However, due to the playing techniques of ornamental figures and the emphasis on lingering tones some simultaneous tones may be heard, and sliding microtones are produced in passing.

Another predetermined element of koto music is the rhythmic construction. Mathematically precise beat units are used. (However, it should be noted that frequent occurrences of *ritardando* and *accelerando* are heard in music which are often not notated.) Notational measures as used in Western music manuscripts are irrelevant for music construction; only the numbers of beats are counted for phrase constructions. Regular rhythmic cycles of a fixed number of beats per cycle are common in some koto music types.

Rhythmic movement follows the Japanese aesthetic principle of *jo-ha-kyuu*, which may also be applied to other areas of musical construction.<sup>42</sup> The slow *jo* introduces the tuning and mood of the

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<sup>42</sup> S. Kishibe, *The Traditional Music of Japan* (Tokyo: Ongakunotomosha, 1982), pp. 57-59. E. Kikkawa (ed.), "Johakyu," *Hogaku Hyakkajiten* (Tokyo, Japan: Ongakunotomosha, 1984), pp. 536-37.



piece. In the *ha* section the main theme is clearly stated, then fragmented as the tempo increases. The fastest tempo area, the most dissonant sounds, and the greatest change in the tonality of the piece occur in the *ha* section. The climax of the composition is reached and recedes from here. The *kyuu* section concludes the piece in a rather speedy (fast and short) manner, with all ensemble parts well synchronized. A common rhythmical feature is that the voice and the instrumental parts chase or lead each other closely; while both follow similar melodic contours, one leads or follows the other.

In koto music there are two basic types of musical formations, *kigakukyoku* and *utamono*. *Kigakukyoku* is a purely instrumental form, while *utamono* is a song accompanied by koto. *Kumiuta* is one of the oldest forms of *utamono*, while *tegotomono* is a subcategory of *kigakukyoku*. The composition *Karaginuta* is a *kigakukyoku* type; it is a koto duet with a basic three-part structure, slow-fast-faster. The two koto parts use different tunings. This short piece demonstrates many newer playing techniques and tonal constructions, including several of the ones previously discussed. Consequently, the work has some of the harmonic flavor of Western music.



*Karaginuta* by Michio Miyagi (1894-1956) is a work inspired by the sounds of women pounding cloth with blocks on a moonlit night. It was originally composed for two kotos and two shamisen parts, the Japanese counterpart to a Western chamber ensemble quartet. Only the two koto parts will be analyzed here. Western, Chinese, and Korean influences are evident in its style. It was composed in 1913 while the composer, Michio Miyagi, was in Korea.<sup>43</sup> Miyagi is considered to be one of most significant innovators of Japanese traditional music. His skill is most evident when combining Western and Japanese musical characteristics.

One koto uses higher-range *hira-jooshi* tunings, while the other uses lower-range *kumoi-jooshi* tunings. The *kumoi-jooshi* line is unusual in that it carries the major part of the main melody, perhaps due to its lower range. The music contains melodic lines with a busy overall movement, and is divided into three sections.

The first section of the piece consists of regular rhythmic cycles (beat units) used in the construction of phrases (e.g., 8, 16-16-8, 16-16-8, 16-16-8, 8 beats). The full melodic pitch range of the piece is demonstrated, and dotted figures are strongly stated. (The dotted figures foreshadow the use of syncopation

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<sup>43</sup> E. Kikkawa, *Miyagi Michio Den* (Tokyo: Hogakusha, 1981), p. 108.



later in the piece.) Three-note ascending and descending movements are the main features of the phrase endings. Brief tonal shifts are also evident. The relationship between the main tone and the fifth degree of the two tunings is firmly introduced. This relationship is developed in the middle section.

The middle section is the longest part and can be separated into two contrasting (high-low, fast-slow) sections. The A section presents alternating contrasts between denseness (i.e., dissonance) and thinness (i.e., consonance). The more consonant B section regains the tonality of a clear tonic area. Compositional techniques such as repetition (m. 35-38, 59-62, 84-88, etc.), contrast (m. 35-40, 64, 97, etc.), ostinato (m. 39-40, 59-62, 84-90, etc.), a similar form of augmentation and diminution (m. 55-56, 39-40 to 87-89, etc.), a close form of sequence (m. 39-40) and syncopation (m. 55-56, 69, 100-101, etc.) are evident throughout the middle section.

The fast (*alla breve*-like) third section concludes the piece in consonant heterophonic sound. The section begins in the dominant area of *kumoi-jooshi* (which is a secondary fifth-degree area of *hira-jooshi*), and ends quickly in the main tonic area of *kumoi-jooshi*.



The next piece, *Gen no Shirabe*, is a contemporary work in classical style. It follows *danmono*<sup>44</sup> form in a rather free interpretation. It was composed in 1976 for shakuhachi and koto duet. The composer, Hoozan Yamamoto, is a renowned composer and shakuhachi performer. *Hira-jooshi* tuning is used for the koto part. The piece consists of six *dan* (or sections). The six *dan* are grouped into two parts. The first *dan* introduces the theme, and more complex variations of the original theme are incrementally added. New material is also introduced between certain phrases--a typical feature of *danmono* form. Three irregular phrases are apparent in every *dan*. The sixth *dan* is a straight recapitulation of the first *dan* except in speed (a little faster than the first *dan*). With a moderate tempo, *Gen no Shirabe* is well-organized, short, and composed in the old classical style. Other examples of this type of music are *Rokudan* and *Midare*.

The last piece, *Natsu no Kyoku*, is an *utamono*. This *utamono* is an instrumentally accompanied vocal music form with an unusually extended instrumental prelude and standard-length interlude. *Natsu no Kyoku* is one of five classical works called *Kokingumi*.<sup>45</sup> Associated with summer time, the lyrics are derived

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<sup>44</sup> *Danmono* is a subcategory of *kigakukyoku* containing a sectional (*dan*) form which is based on theme and variational composition techniques.

<sup>45</sup> Four of these compositions have seasonal themes.



from ancient poems in the *Kokin Wakashuu* (A.D.913).<sup>46</sup> In this piece, two poems are separated by an instrumental *tegoto* section.<sup>47</sup> The introduction suggests clear water flowing.<sup>48</sup> The work is for voice and two kotos. It was composed c. 1840 by Kengyoo Yoshizawa, a leading music reformer who created the *kokin-jooshi* tuning scale.<sup>49</sup> The music consists of a basic three-part structure: *maeuta* ("fore song"), *tegoto* (an instrumental interlude), and *atouta* ("after song").<sup>50</sup>

The koto solo introduction consists of 134 beats which are organized into three groups: beats of 36, 48, and 48. The phrase structure is based on nine- and twelve-beat units. The tempo is set at a relatively even 4/4 at moderate speed. The hierarchical ordering of tones (D,G,A,E, etc.) is expressed by note duration values (longer notes are more important) and phrase structures (the beginning and ending notes of each phrase are important). The overall tonality and mood of the piece are introduced and established. With the notated (in the manuscript) *ritardando* from

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<sup>46</sup> E. Kikkawa (ed.), "Natsu no Kyoku," *Hogaku Hyakkajiten* (Tokyo, Japan: Ongakunotomosha, 1984), p. 751.

<sup>47</sup> Added later by Kengyoo Matsuzaka c. 1880.

<sup>48</sup> Kazue and Kiyoko Miyagi. *Natsu no Kyoku* (Tokyo: Hogakusha, 1986).

<sup>49</sup> E. Kikkawa (ed.), "Natsu no kyoku," *Hogaku Hyakkajiten* (Tokyo, Japan: Ongakunotomosha, 1984), p. 751.

<sup>50</sup> W. Adriaanz, *The Kumiuta and Danmono Tradition of Japanese Koto Music* (Berkeley and Los Angeles: University of California Press, 1973), p. 15.



measure 32, the piece moves into the *maeuta* section at measure 34. The expression of the *ritardando* is left to the performer's discretion.

The *maeuta* consists of two parts containing each having a separate poem which are again musically divided into two subdivisions. Each subdivision is separated by a short *ainote* reflecting the poem structure (5-7-5 and 7-7 syllables). Most of the syllabic groups contain five or six tones. The tonality of the first poem revolves around the main tone D and the second revolves around tone G. The song line consists of many long sustained notes and melismatic movements. The rhythmic construction reflects the poetic structure (5-7-5, 7-7). Each syllabic group is applied to approximately the same number of measures (5-5-5, 5 1/2-6 1/2 measures). The rhythmical and melodic movements of the vocal line are complemented by the independent (but closely synchronized) koto line. Each line closely chases or leads the other line. The melodic and rhythmic configuration of the koto line (though more disjunct in motion) is comparable to the vocal line. The same relation is found in the *tegoto* section (as well as in the *atouta* section) although with increased complexity. The *maeuta* section concludes with a brief (about



seven measures) phrase.

Before the *tegoto* section, there are transitional or introductory areas of substantial length. The transitional part (fifty-three measures) is divided into two areas (thirty and twenty-three measures), introducing new tonality (Eb and Bb become E and B, respectively). The transitional part has two different kinds of mood. In the second area (twenty-three measures), the tonality is established in steady eighth-note movements and four-measure phrases. The main tone and its fifth degree tone relationship is clearly stated (almost all strong beat tones are D,G,A,E). The tempo progressively becomes faster, which is similar to an *alla breve* speed from approximately the third measure. Here the four eighth notes are normally counted as one beat. Due to the steady note movement, insertions of dynamics are usually recommended by instructors at their discretion. (There are no dynamic indicators in the manuscripts.) The dynamics should follow the natural contour of the melody movement. This is demanding on koto players performing solo prior to being joined by another player at the beginning of the *tegoto* section.

The creation of the *utamono* ensemble style spawned the development of an independent second koto part, called *kaede*



("changed hand"), for classical koto solos. The added *kaede* complements the original melody part, *honte* ("main hand").<sup>51</sup> In this piece the *kaede* part begins from the *tegoto* section. Both koto parts share the same tuning throughout the piece. During the *tegoto* section, the previously changed tuning reverts back to the original tuning. The *tegoto* section is separated into two areas (notated as *tegoto* and *chirashi*) in koto duet form.

The first *tegoto* section (thirty-six measures) is the densest part, with the fastest tempo and the most dissonant pitch intervals. Many sixteenth-note values appear, and an *alla breve* time signature is appropriate. Many minor and major second and third intervals are used, and a tritone is sounded at the climax. Most accidentals appear in this part. The koto lines contain independent short phrase structures which are played simultaneously within the two large subdivided phrases. As a consequence it is difficult to hear the smaller phrase structures, even though the two large phrases contain six three-measure phrases. The melodically and rhythmically dense music expresses great tension. The tension is partially released in the following *chirashi* section by thinning the texture.

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<sup>51</sup> W. Adriaanz, *The Kumiuta and Danmono Tradition of Japanese Koto Music* (Berkeley and Los Angeles: University of California Press, 1973), p. 16.



The second *tegoto* section, *chirashi* ("dissipate" or "scatter"), moves back to the original tuning area (from E to Eb and B to Bb) from the beginning measure (m. 192). The music sounds softer (more consonant and thinner texture) and the rhythmic motion is less busy (sixteenth-note figures disappear) than the preceding section. Fewer ornamental patterns are evident here. A question-and-answer form between the two koto lines eases some of the tension. The two-part subdivision concept is also used in this section. Although syncopation and suspension techniques contribute significantly to the complex two-line phrase configurations, the tension is gradually released at the end of the *tegoto* section.

The last section, *atouta*, combines all of the previously mentioned parts. The structure of the *atouta* is a condensed version of the *maeuta* and *tegoto* combined for a three-part composition. It contains two poems separated by a short instrumental interlude that is equivalent to an extremely condensed *tegoto*. Each poem is separated by a short *ainote*. The music moves in a fast tempo which may be counted in a slow cut-time, and disjunct style, a motion attributable to the coexistence of the three independent lines.



Most vocal and instrumental ensemble works use *utamono* form (e.g., *Chidori*, and *Kurokami*). In all of the previously mentioned works, compositional techniques such as repetition, imitation, variation, contrast, syncopation, ostinato, etc. are used. Many oral traditions are expected to be understood by performers through rote transmission. While the complexities of musical construction are restrained, the subtleties of musical movement are emphasized to express the Japanese aesthetic or philosophical ideas of elegance, simplicity, and refinement.



## Chapter IV

### ANALYSIS OF TUNING AND SCALE SYSTEMS

#### IN SELECTED KOTO COMPOSITIONS

##### *Overview of Tuning Systems*

The koto is tuned by adjusting its movable bridges. The number of possible tunings is based on the number of scale system music genres used. All of the scale systems can be traced back to two twelve-tone scales of *gagaku*, *ryo* and *ritsu*, and the movable tetrachordic scales which existed before the eighth century.<sup>52</sup> The *ryo* and *ritsu* scale systems were established between the eighth and thirteenth centuries. The Chinese twelve-tone (not equally tempered, but Pythagorean) scale system evolved into the seven-tone scale system (Example 1) and the six *ryo* and *ritsu* tunings (Example 2). They are built on predetermined, fixed (untempered) pitches. Predominant tones are the first and fifth degrees of the scale.<sup>53</sup> The movable tetrachordic system consisted of two types, conjunct and disjunct (Example 3). The predominant tones in scales were always the beginning and ending tones of the tetrachord (e.g., E-A, D-G, or B-E; see Example 3).<sup>54</sup>

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<sup>52</sup> K. Touyama and S. Ebizawa (eds.), "Hogaku," *Larousse de la Musique* (Japan: Fukutake Publishing Co., 1989), pp. 1190-92.

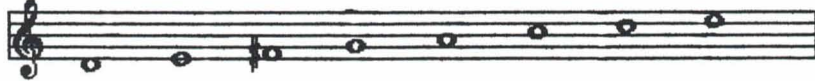
<sup>53</sup> W. Malm, *Japanese Music* (Tokyo: Charles E. Tuttle Co., Inc., 1968), p. 66.

<sup>54</sup> *Ibid.*

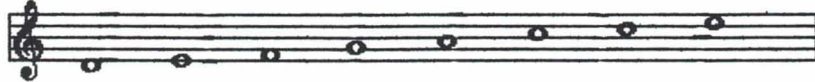


# Example 1: Seven-Tone Scales

Ryo



Ritsu



## Example 2: Six Ryo and Ritsu Koto Tunings

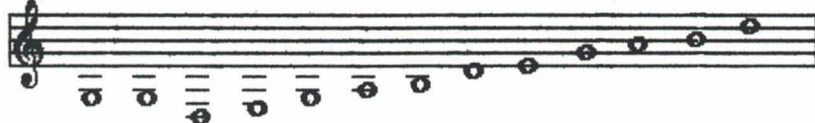
Ryo: Ichikotsuchō



Taishikichō



Sōjō



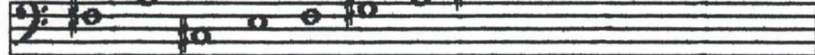
Ritsu: Hyōjō



Oshikichō



Banzhikichō



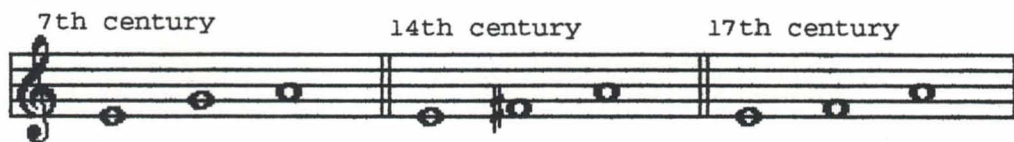


Example 3: Conjunct and Disjunct Tetrachords



The intermediate tone of the tetrachord fluctuated over time. For example, the seventh-century tetrachord consisted of minor 3rd and major 2nd intervals, whereas the fourteenth-century tetrachord consisted of major 2nd and minor 3rd intervals. After the seventeenth century the tetrachord changed to a minor 2nd plus a major 3rd (Example 4).

Example 4: Intermediate Tones of Tetrachords



These tetrachordic scale systems were integrated with the *ritsu* systems during the (circa) seventeenth century, resulting in the five-tone *in* and *yo* systems (Example 5). While the *ritsu* and descending *yo* scales consist of the same pitches, their important tones differ (e.g., D and A of the *ritsu* and D and G of the *yo*).<sup>55</sup>

<sup>55</sup> S. Yuize, *Sankyokujin no tameno Kisogakuri Nyumon*, p. 29.

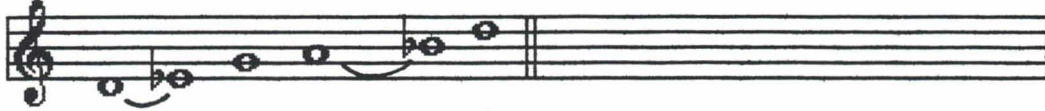


Example 5: Five-tone Ritsu, In and Yo Scales

5-Tone Ritsu Scale



In Scale (Basic)



Yo Scale



There are basically two types of scale systems in koto music, *in* and *yo*. The *in* system contains a half-step in the scale progression. There are three types of *in* scales which are similar to the three minor modes in Western music (Example 6). The differences in these three types involve ascending and descending patterns. They are derived from the *miyakobushi*, *minyo*, and *ritsu* scale systems.<sup>56</sup> There is also another scale called *ryuukyuu*, but its influence on the *in* system is not certain (Example 7). Often, the *in* system (excluding the *ryuukyuu* scale) is referred to as the *miyakobushi* scale. All of them contain different tetrachordic structures (Example 8).<sup>57</sup>

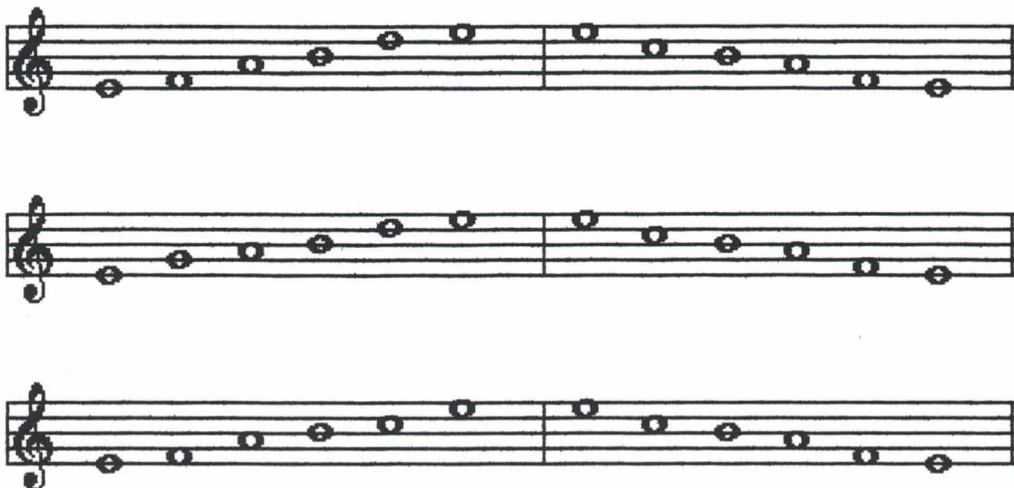
<sup>56</sup> Ibid.

<sup>57</sup> S. Yuize, *Sankyokujin no tameno Kisogakuri Nyumon*, pp. 26-28.



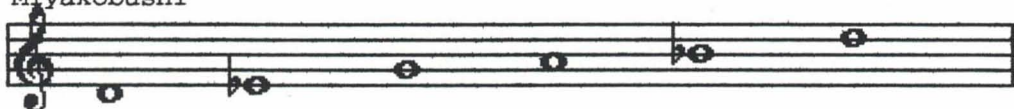
### Example 6: Three Types of In Scales

### 3 In Scales

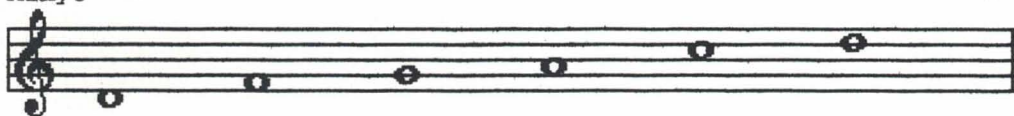


### Example 7: Miyako, Minyo, Ritsu, and Ryuukyuu Scales

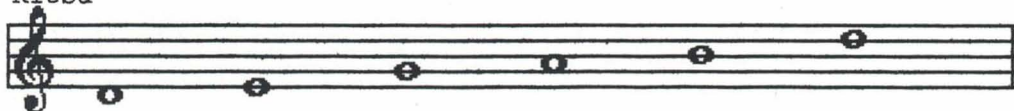
Miyakobushi



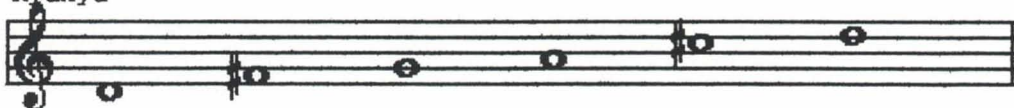
Minyo



## Ritsu



## Ryūkyū





Example 8: Tetrachord Figures of Four Scales



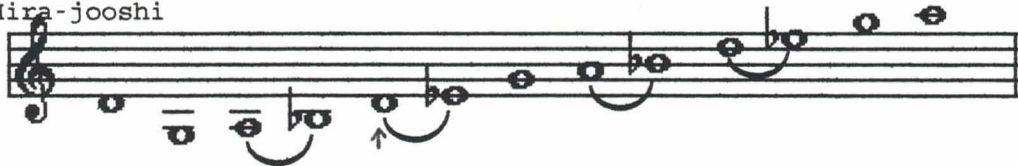
Tunings of the *in* scale are based on one of these three types. *In* consists of five common tunings: (1) *hira-jooshi* (the most basic), (2) *kumoi-jooshi*, (3) *iwato-jooshi*, (4) *nakazora-jooshi*, (5) *akebono-jooshi*<sup>58</sup> (See Example 9; note that the string furthest from the performer is the first string and the string closest is the thirteenth string.) These tunings represent relationships of fifth and fourth degrees to each other. For example, *nakazora-jooshi* has a fifth-degree and *kumoi-jooshi* has a fourth-degree relation to *hira-jooshi*. (e.g., *hira-jooshi*'s main tone is pitch D, while *nakazora-jooshi*'s main tone is A and *kumoi-jooshi*'s main tone is G).

<sup>58</sup> Ibid., pp. 19-34.

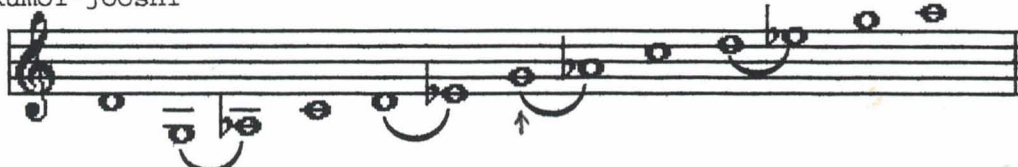


Example 9: Five Common Tunings of the In Scale


Hira-jooshi




Kumoi-jooshi



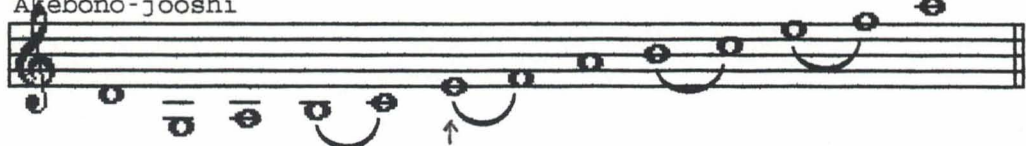
Iwato-jooshi



Nakazora-jooshi



Akebono-jooshi



The image displays five musical staves, each representing a different tuning of the In scale. Each staff begins with a treble clef and a key signature of one flat (B-flat). The notes are written as half notes, with some beamed together in pairs. Arrows point to specific notes in each scale: the second note in Hira-jooshi, Kumoi-jooshi, and Nakazora-jooshi; and the third note in Iwato-jooshi and Akebono-jooshi.

The yo system consists of five fundamental tuning scales derived from the five-tone yo scale called *inakabushi*<sup>59</sup> and the *minyo* scale (Example 10). They do not contain a half-step in

<sup>59</sup>S. Yuize, *Sankyokujin no tameno Kisogakuri Nyumon*, p. 19.



their scale progressions (They contain whole-steps and major third or minor third intervalic steps). The five yo tuning scales are: *nogi-jooshi* (the most basic), *gaku-jooshi*, *hanagumo-jooshi*, *natsuyama-jooshi*, and *akino-jooshi* (Example 11).

Example 10: Five-Tone Yo and Minyo Scales



Based on these ten tunings many more tunings (*jooshi* or *chooshi*) were developed using transpositions, half-step placements, an octave displacements, etc. For example, lowering an octave of the *hira-jooshi*'s first tone can be called *shimo-chidori-jooshi*. There are over thirty tunings (named and unnamed) that exist today for thirteen-string koto music.

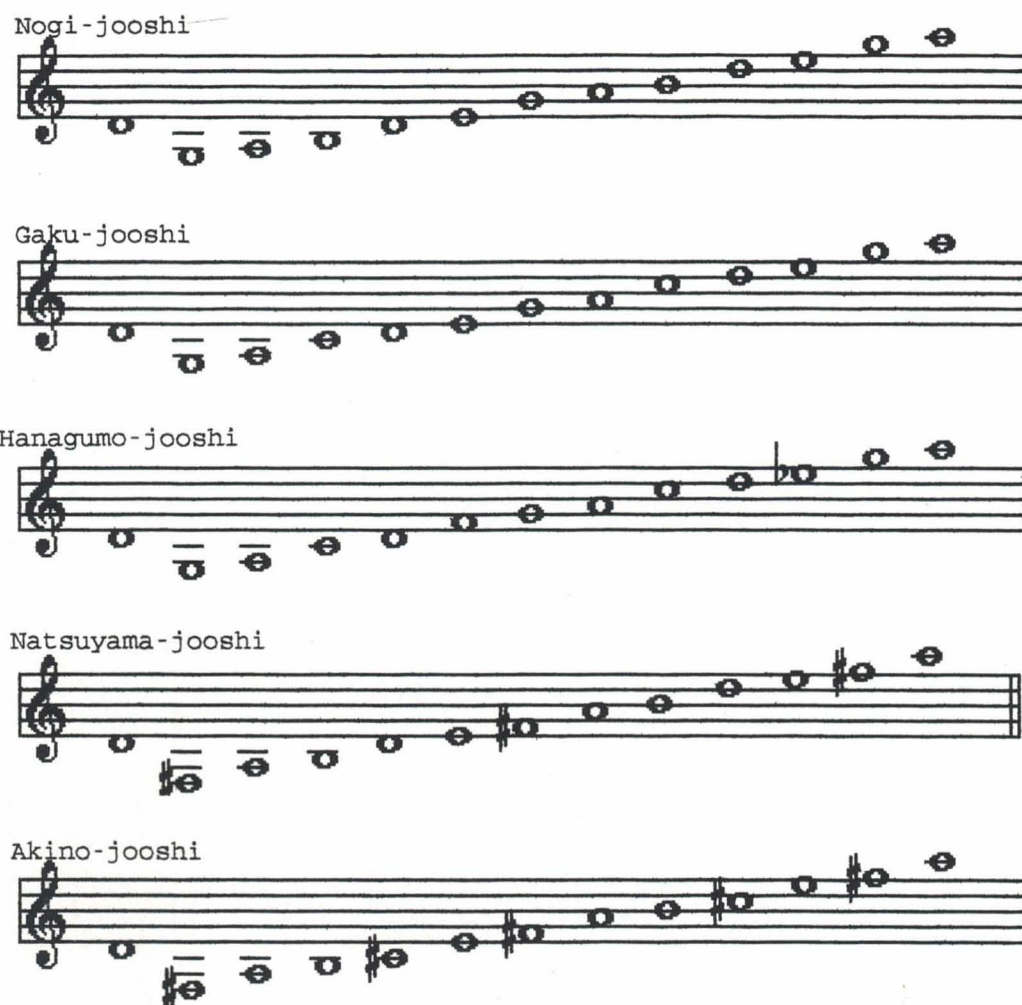
The actual tuning of the thirteen-string koto is effected by positioning the bridges in order to produce the required tones. Five basic pitches are arranged into characteristic octaves on all thirteen strings.<sup>60</sup> Strings 1 and 5 are basically in unison;

<sup>60</sup> The string furthest from the performer is the first string and the string closest is the thirteenth string.



strings 2 and 7, 3 and 8, 4 and 9 and so forth also form octaves.

*Example 11: Five Common Tunings of the Yo Scale*



Ikuta-ryuu manuscripts use Japanese character numbers while other schools may use different notation (e.g., the Yamada-ryuu uses arabic numerals). The names of tuning scales may also be



different in other schools. (Some examples may be found in Figure 1.) The first tone of a tuning scale is tuned on string 1, the second tone (usually 5 degrees below the first tone) is on string 2, etc. If the music is not for a solo, a specific string of each instrument is matched to the main pitch, which is usually notated. The most common main tone is D (immediately above middle C on the piano). In each tuning the order of the tone hierarchy is displayed. The Japanese names of those pitches are normally used (Example 12). The names of all twelve tones are listed in Appendix A.

Examples of these concepts are provided in the following sections, which analyze the tuning scale systems of three koto pieces. The three tuning examples selected are among the most frequently performed koto works. *Hira-jooshi* is the most widely used of all modern koto tunings. *Kumoi-jooshi* is the most often used for the *kaede* part. *Kokin-jooshi* is a unique classical tuning which is used in popular *Kokingumi* music.



Figure 1: A Comparison of Ikuta-Ryuu and Yamada-Ryuu Tuning

**Ikuta-Ryuu**

**Yamada-Ryuu**

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Akebono-jooshi (or Niju-nakazora-jooshi)	Iwato-jooshi
Akikaze-jooshi	Akikaze-jooshi
Gosage Rokuagari Kumoi-jooshi	Kata-iwato-jooshi
Hachiagare Kusage-han-kumoi-jooshi	Shiagari-hira-jooshi
Han-kumoi-jooshi	Kata-kumoi-jooshi
Han-nakazora-jooshi (or Rokuagari-jooshi)	Nakazora-jooshi
(or Akebono-jooshi)	
Higurashi-jooshi	Hachiagari-han-kumoi-jooshi
Hon-kumoi-jooshi	Hon-kumoi-jooshi
Karigane-jooshi (or Daiichi-gaku-jooshi)	
Karigane-jooshi (older version for kumiuta)	
Kankan-jooshi	
Kumoi-jooshi	Kumoi-jooshi
Nakazora-jooshi (or Rokuagari-jooshi)	Akebono-jooshi
Niju-kumoi-jooshi (or Rokutoagari-kumoi-jooshi)	Han-iwato-jooshi
(or Sekisho-jooshi)	
Nogi-jooshi (or Daini Gaku-jooshi)	
Shiagari-han-kumoi-jooshi	Han-kumoi-jooshi
Shichiisagari-nakazora-jooshi	Akebono-jooshi
Shikuagari-kumoi-jooshi	Kata-kumoi-jooshi

Example 12: Names of the Seven Tones





## Analysis of Three Tuning/Scale Systems

### *Hira-Jooshi* (e.g., *Gen No Shirabe*)

*Hira-jooshi* was developed from the *in* system (a combination of three scale types) in the early-seventeenth century by Kengyoo Yatsuhasi. All three types of *in* scales consist of five basic tones in ascending and descending forms. (This was described in the previous examples.) In *hira-jooshi* semitone intervals fall between the 3rd and 4th, 5th and 6th, 8th and 9th, and 10th and 11th strings. The hierarchy of tones may be organized as "nuclear notes."<sup>61</sup> A nuclear note is an important center tone, especially when expressed as the ending note of a phrase. Strings 1, 5, and 10 form nuclear notes "I"; strings 3, 8, and 13 form the nuclear notes "II"; and strings 2, 7, and 12 form the nuclear notes "III." Strings 4 and 9 or 6 and 11 are often raised via a left-hand technique for melodic variety or a key change.

*Gen no Shirabe* uses a *hira-jooshi* on *ichikotsu* (pitch D above the middle C on a piano). This piece illustrates *hira-jooshi* in a rather straightforward manner with some modern melodic movements (e.g., use of gracenotes).

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<sup>61</sup> The nuclear note hierarchy was developed by S. Yuize.



*Kumoi-Jooshi* (e.g., *Karaginuta*)

*Kumoi-jooshi* became popular when the *kaede* part for koto music was developed in the late-seventeenth century. This form, in which instruments with different tunings harmonize, can be credited to Kengyoo Ikuta and his disciples. *Kumoi-jooshi* lowers the 3rd and 8th strings a half-step and raises the 4th and 9th strings a whole-step from the *hira-jooshi* tuning. There are variations of *kumoi-jooshi* such as *hankumoi-jooshi* and *honkumoi-jooshi* (Example 13).

Example 13: Three Examples of *Kumoi-Jooshi*

Hon-Kumoi-jooshi





*Kumoi-jooshi* is old, but this composition was composed in 1913. The composer experimented with many tuning techniques in this work. In order to maintain polyphonic coherency and harmonic variation, accidentals are frequently applied. Dissonances, especially tritones, are applied to suggest tension, and release is expressed by the use of subtle ornamental figures. *Kumoi-jooshi* first revolves around *hira-jooshi*'s fifth-degree area (pitch A), then the relationship between them reverses (*hira-jooshi* revolves around *kumoi-jooshi*'s fifth-degree area, pitch E). The middle area of the piece expresses secondary fifth-degree areas of both tunings. Most of the main melody is set on the *kumoi-jooshi* line.

*Kokin-Jooshi* (e.g., *Natsu No Kyoku*)

*Kokin-jooshi* was developed by Kengyoo Yoshizawa in the middle of the nineteenth century. It shares the shape of tenth century *gagaku koto* tuning.<sup>62</sup> For example, the pitch of string 2 is raised an octave as with *gakusoo-jooshi gagaku koto* tuning (Example 14), where an ascending fourth is followed by a descending seventh.

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<sup>62</sup> S. Kishibe, *Traditional Music of Japan* (Tokyo: Ongakunotomosha, 1982), pp. 18-21.

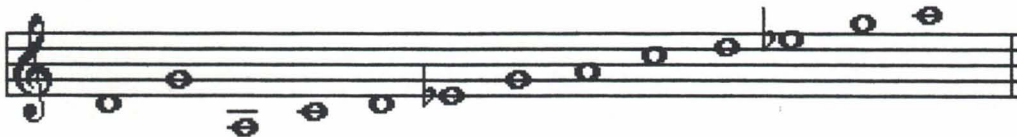


Example 14: Gakusoo-Jooshi



*Kokin-jooshi* is unique in its construction. It contains an ascending fourth and a descending minor-seventh in addition to intervallic elements from other tuning scales (Example 15). In *Natsu no Kyoku*, this tuning changes after the *maeuta* section, and later reverts. Strings 6 and 11 of the *kokin-jooshi* are raised a half-step. The music includes two koto parts in the same *kokin-jooshi* from the *tegoto* section. Tension is created in this section and dissonant sound is frequently heard. With the vocal part included in the *atouta* section a dense sound is produced.

Example 15: *Kokin-Jooshi*



In addition to the three tuning scales described above, many other named and unnamed tunings exist. Appendix A lists ancient



wagon tunings, late-sixteenth century *tsukushi-goto* tunings, and modern koto tuning examples.



## CONCLUSIONS

The history of modern koto music can be traced back to the eighth and ninth centuries. However, significant development of koto tuning scale systems has occurred during the last four hundred years. Initially, the first thirteen-string koto school (*Tsukushi-ryuu*) borrowed and modified the tuning of the old *gagaku* koto (*gakuso*). Popular music and tuning were integrated with koto music by a second school (*Yatsunashi-ryuu*) in the seventeenth century. From that time on, koto music accumulated numerous tuning systems over a long period of innovation and borrowing. Today, most tunings are used interchangeably among many schools of koto.

Koto music is constructed with mainly predetermined musical elements. When flexible musical elements (non-fixed elements such as some ornaments and rhythmical movements) are combined with traditional koto music the Japanese aesthetic principle *jo-ha-kyuu* is realized. In the overall heterophonic construction each melodic line is rather independent versing in true polyphony (two or more simultaneous independent lines), and expresses the tonal mood by the phrase structures with the help of many ornamental figures. Similar construction exists in rhythmical movements,



creating a polyrhythmical effect (two or more independent lines with their own rhythmic cycles based on the total number of beats). The complexity of koto music evolved along with the development of tuning systems.

Most modern koto tuning systems are based on the five-tone *in* and *yo* scale systems, which were derived from the seven-tone *ritsu* scale. The tunings based on the *yo* scale are performed less frequently than those based on the *in* scale. String tuning is traditionally done by ear. The most common tuning (*hira-jooshi*) is based on the *in* scale. The positioning of the main tone and half-steps in a scale are the basis for tuning. The octave figures of five-tone scales are tuned on the thirteen strings by moving the bridges. Other pitches are produced by playing techniques: pressing down or pulling up strings at the left side of the bridges with the left hand.

The koto may be tuned to many different scale systems. This capability produces a significant potential for music experimentation.



## GLOSSARY OF TERMS

<b>ainote</b>	A short instrumental interlude in koto <i>utamono</i> .
<b>ashi</b>	"Legs." Support legs for an instrument.
<b>atouta</b>	"After song." The song part which follows the tegoto section of koto <i>utamono</i> .
<b>biwa-no-koto</b>	A four-string short-neck lute.
<b>chirashi</b>	"Dissipate" or "scatter." The concluding part of a tegoto section.
<b>danmono</b>	A subcategory of <i>kigakukyoku</i> containing a sectional ( <i>dan</i> ) form which is based on theme and variational composition techniques. Each <i>dan</i> usually consists of 104 beats.
<b>gagaku</b>	A form of ancient Japanese court orchestra.
<b>gakusei- kaikaku</b>	A nationalistic organization for music reform established by the imperial court in the tenth century.
<b>gakusoo</b>	Koto used in <i>gagaku</i> .
<b>gen</b>	Strings which are fastened between the head and tail of the koto. Usually made of silk or nylon.
<b>hachijuugen- kin</b>	An 80-string zither which was built to have approximately the same tonal ranges as a piano. Invented by Michio Miyagi in 1929.
<b>haniwa</b>	Ancient burial mound figurines.



<b><i>hira-jooshi</i></b>	A five-tone tuning scale derived from the <i>in</i> system.
<b><i>honte</i></b>	"Main hand." The original melody part for classical koto solos.
<b><i>Ikuta-ryuu</i></b>	A koto school founded by Kengyoo Ikuta (1655-1715) in the Kyoto and Osaka (Kansai) areas. One of the main modern traditional koto schools.
<b><i>in</i></b>	A hemitonic pentatonic scale system with ascending and descending profiles. See Chapter IV.
<b><i>ji</i></b>	Movable bridges made of ivory or plastic.
<b><i>jiuta</i></b>	A form of folk or popular ballad.
<b><i>jo-ha-kyuu</i></b>	The "entering-breaking-hastening" principle, which is based on Japanese aesthetics significantly influenced by religious philosophies (Shintoism, Buddhism, and Confucianism).
<b><i>juushichigen-kin</i></b>	A 17-string zither, whose highest tone is lower than the thirteen-string koto's lowest tone. Invented by Michio Miyagi in 1913.
<b><i>kaede</i></b>	"Changed hand." An independent second koto part for classical koto solos which complements the original melody part, <i>honte</i> .
<b><i>kin-no-koto</i></b>	Refers to the Chinese seven-string zither called <i>chi'n</i> .
<b><i>kokyuu</i></b>	A 2-, 3-, or 4-string long-necked bowed lute.



<b>koo</b>	The body of the koto. It is usually made of pawlonia wood, and is about six feet in length and ten inches in width.
<b>kigakukyoku</b>	A purely instrumental music form.
<b>kokin-jooshi</b>	A 5-tone tuning scale developed by Kengyoo Yoshizawa.
<b>kudara-goto</b>	Refers to the Korean harp called <i>kugo</i> .
<b>kumiuta</b>	A song-cycle compositional form One of the oldest forms of <i>utamono</i> .
<b>kumoi-jooshi</b>	A 5-tone tuning scale. The second most popular tuning scale, mostly used for <i>kaede</i> .
<b>maeuta</b>	"Fore song." The song part which precedes the <i>tegoto</i> section of koto <i>utamono</i> .
<b>Meiji-Shinkyoku</b>	"Meiji new music." Refers to the new music developed during the Meiji Restoration.
<b>minyo onkai</b>	A folk music scale named by F. Koizumi.
<b>miyakobushi</b>	One of the modern <i>zokugaku</i> scales which belongs to the <i>in</i> scale family.
<b>nuclear note</b>	An important center tone in the tone hierarchy developed by S. Yuize.
<b>ritsu</b>	An untempered twelve-tone scale of <i>gagaku</i> which existed before the eighth century. (See <i>ryo</i> .)
<b>ryo</b>	An untempered twelve-tone scale of Chinese origin which existed before the eighth century. (See



ritsu.)

- ryuu** Japanese word for "school." Consequently, *Tsukushi-ryuu* means "Tsukushi school."
- ryuukyuu-onkai** A folk music scale of Loochoo Islands (Ryuukyuu Archipelago) named by F. Koizumi. The 2nd and the 5th tones of the *minyo* scale are raised a half step.
- sankyoku** A trio form, practiced with shamisen, koto, and one other instrument (usually a *shakuhachi*; originally a *kokyuu* was used).
- shamisen** A three-string long-neck plucked lute.
- Shin-Nihon-Ongaku** "New Japanese music" group was led by Michio Miyagi (1894-1956) from about 1915.
- soo-no-koto** The thirteen-string zither which today is called *soo* or *koto*.
- tangoto** A shorter version (1.38 m.) of the *koto* with adjustable legs and metal pegs. Invented by Michio Miyagi in 1932.
- tegoto** "Hand matter." An instrumental interlude in *koto utamono*.
- tegotomono** Expanded *ainote* developed by Kengyoo Mitsuzaki and Kengyoo Kikuzaki. A subcategory of *kigakukyoku*.
- Tsukushi-ryuu** The first school of *koto* which was established by Kenjun (1547-1636) in northern Kyuushuu island.
- tsume** Picks made of ivory or plastic.



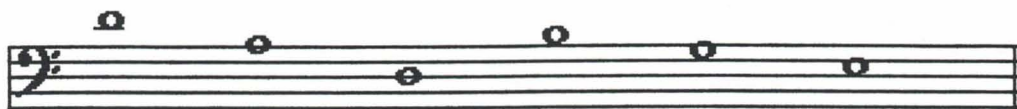
- utamono** A song accompanied by the koto.
- Yatsushashi** The koto school founded in the middle of the  
**-ryuu** seventeenth century by Kengyoo Yatsushashi,  
considered to be the father of modern koto music.
- Yamada-ryuu** The koto school founded by Kengyoo Yamada (1756-  
1817) in the Tokyo area. One of the main modern  
traditional koto schools.
- yo** A pentatonic scale without semitones. See  
Chapter IV.
- wagon** A six-stringed zither used in early gagaku.
- zokugaku** A form of popular music.



APPENDIX A:

Examples of Tuning and Scale Systems

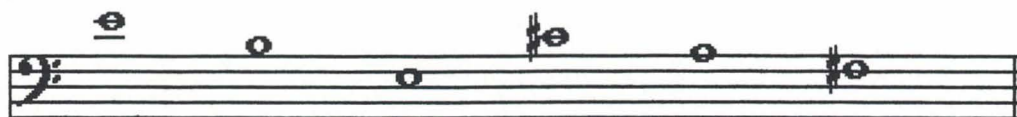
*Three Wagon Tunings*



Kagurauta, Kumeuta



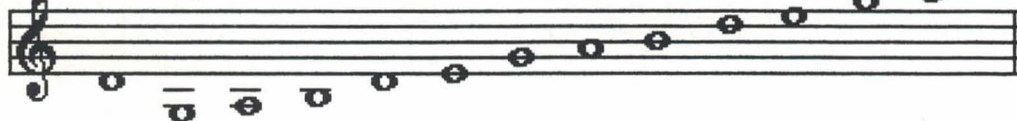
Azuma asobi



Oouta

*Tsukushi-Goto Tunings*

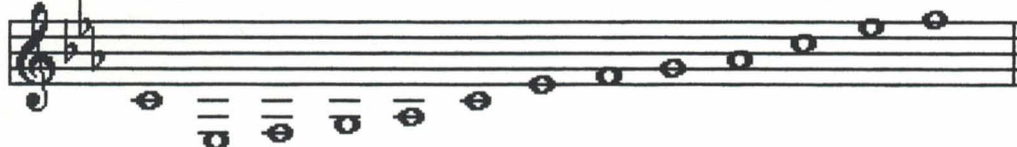
Basic Tuning



Kumoi-chō



Chidori-chō

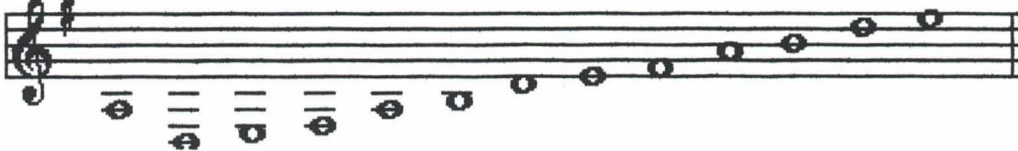




## Eleven Varieties of Basic Tsukushi-Goto Tunings

(Note: These contain the same intervallic structure. The twelfth tuning, Kamimu-choo, contains an unique intervallic structure according to E.Kikkawa. An example was unavailable.)

Ichikotsu-chō



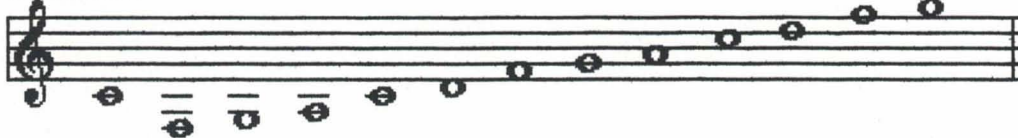
Tangin



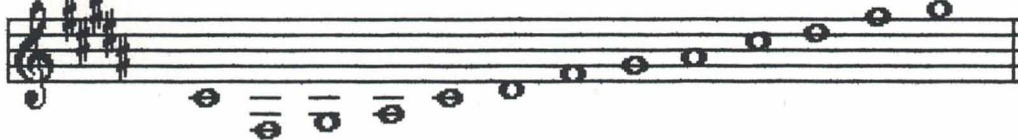
Hyōjō



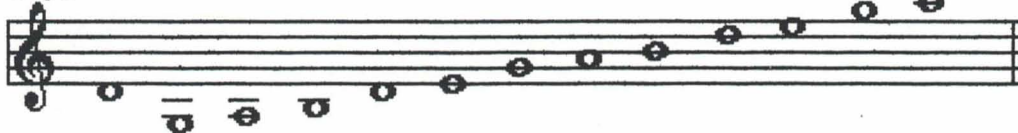
Shōzetsu



Shimomu



Sōjō







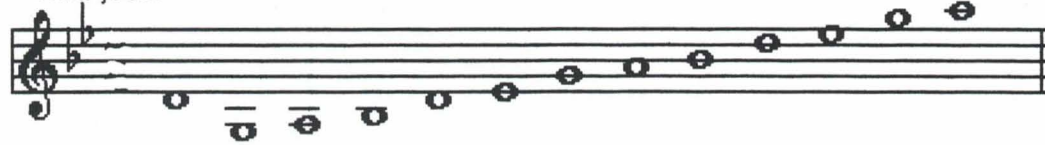


## Modern Tunings in Groupings


(Note: Pitch D is used as the first string tone for comparison purposes.)

### 1. In or Miyakobushi (Basic Style) Tuning Scales:


Hira-jōshi




Kumoi-jōshi



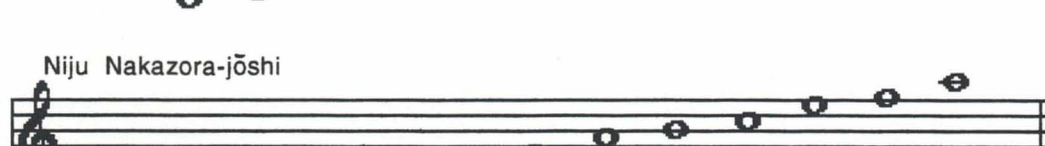
Niju Kumoi-jōshi



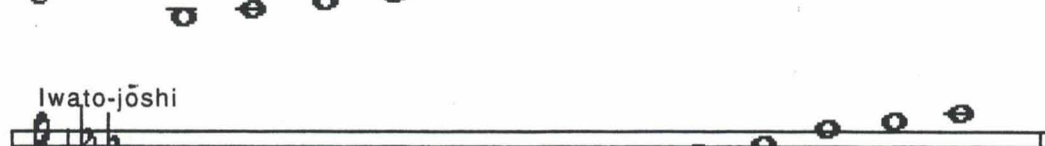
Nakazora-jōshi



Niju Nakazora-jōshi

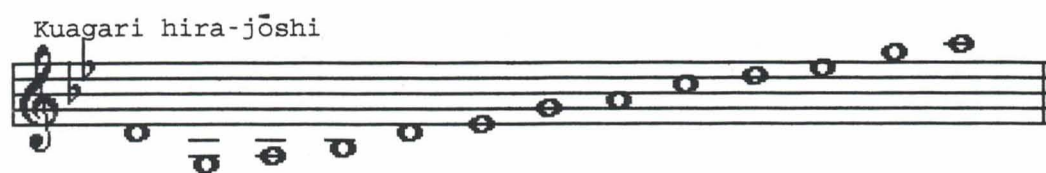
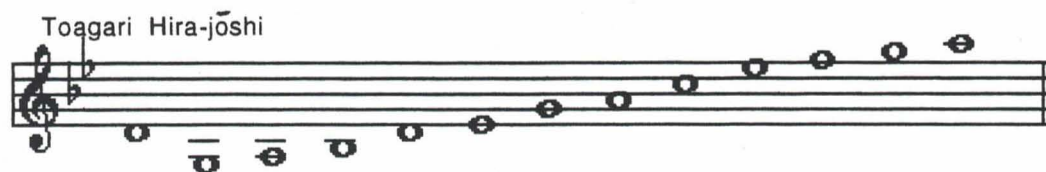


Iwato-jōshi

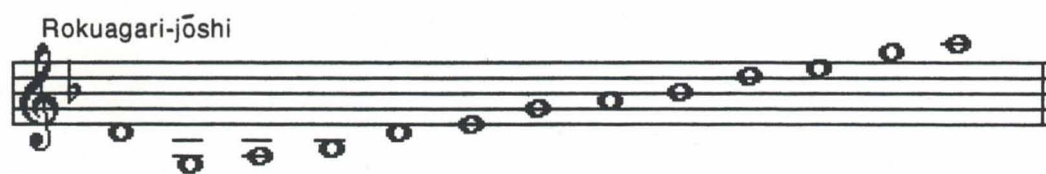
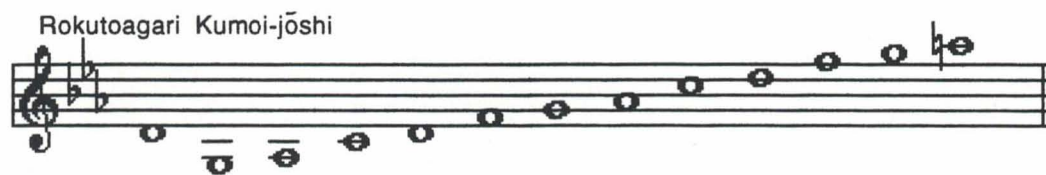
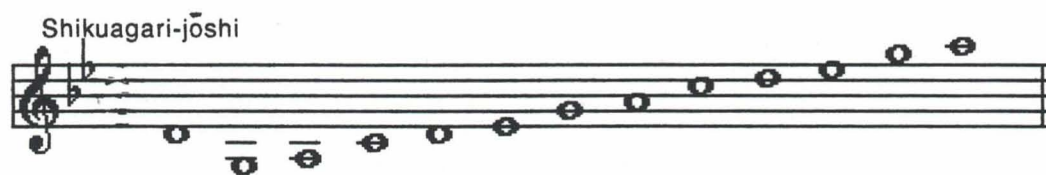


The image displays six musical staves, each representing a different In or Miyakobushi tuning scale. Each staff begins with a treble clef and a key signature of one flat (B-flat). The scales are written in a single line of music, showing the sequence of notes for each tuning. The notes are represented by circles with stems, and some are grouped with horizontal lines. The scales are: Hira-jōshi, Kumoi-jōshi, Niju Kumoi-jōshi, Nakazora-jōshi, Niju Nakazora-jōshi, and Iwato-jōshi.



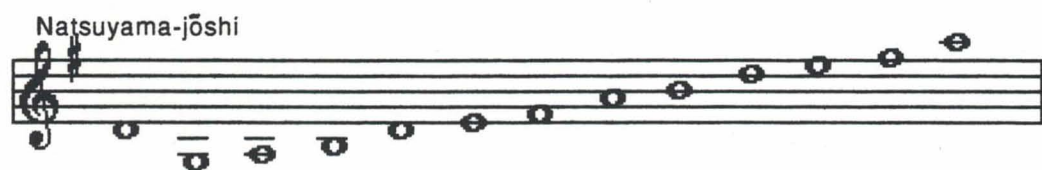
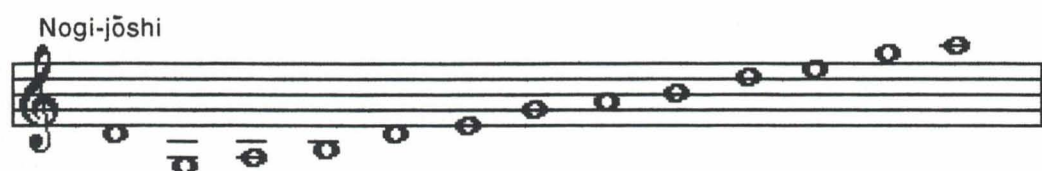
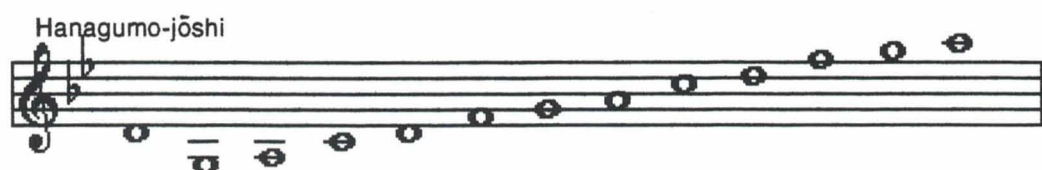
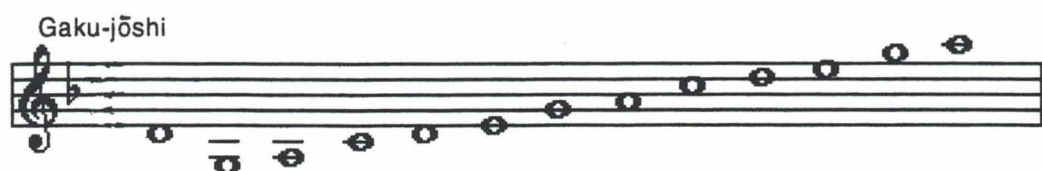


2. In or Miyakobushi (B# type) Tuning Scales:





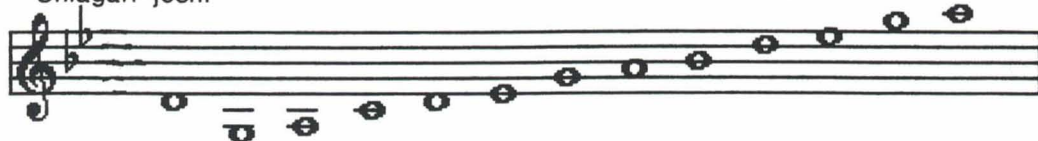
### 3. Yo Tuning Scales:





4. In and Yo Combined Tuning Scales:

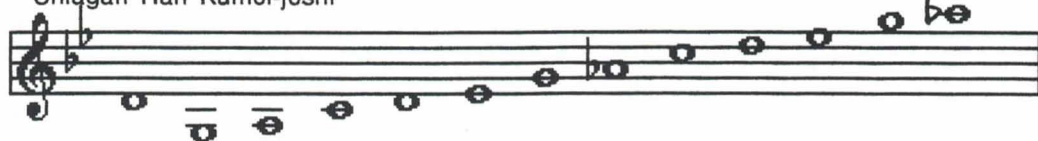
Shiagari-jōshi



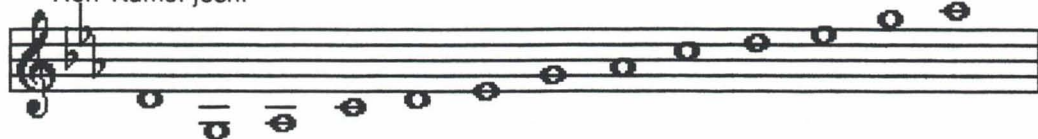
Han Kumoi-jōshi



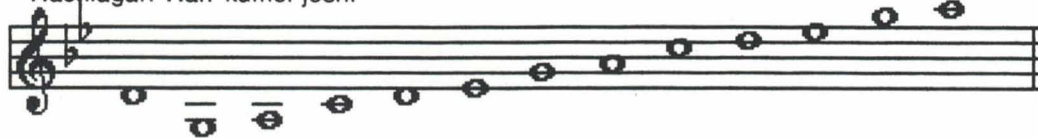
Shiagari Han Kumoi-jōshi



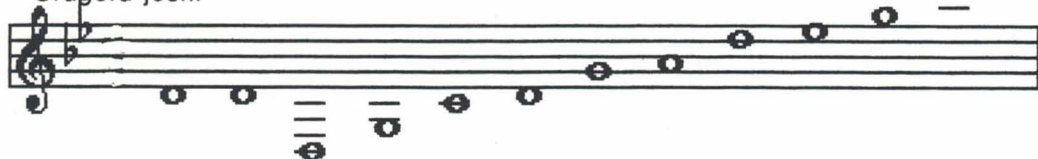
Hon Kumoi-jōshi



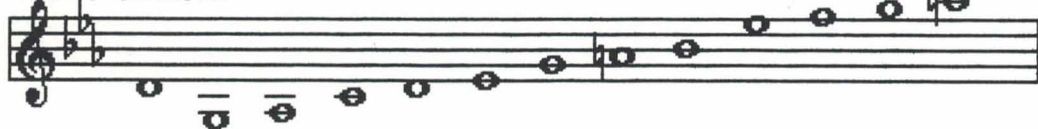
Hachiagari Han kumoi-jōshi



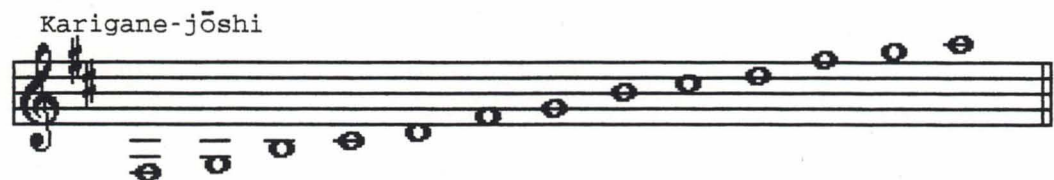
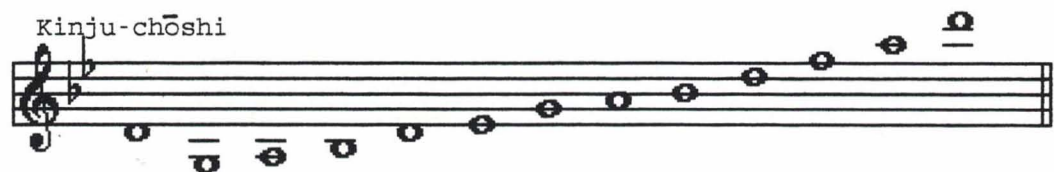
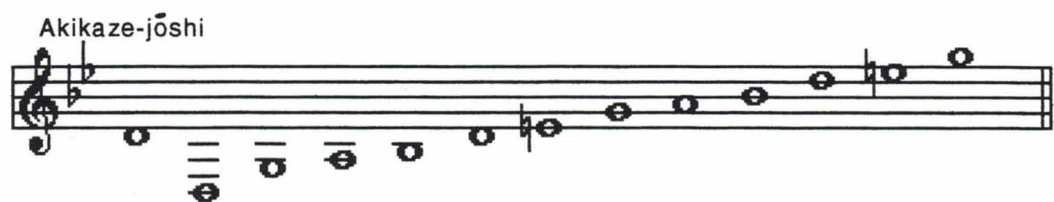
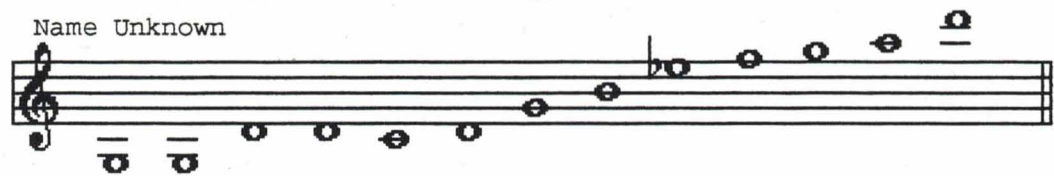
Orugoru-jōshi



Name Unknown





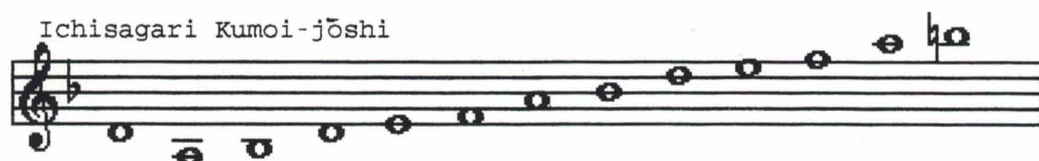
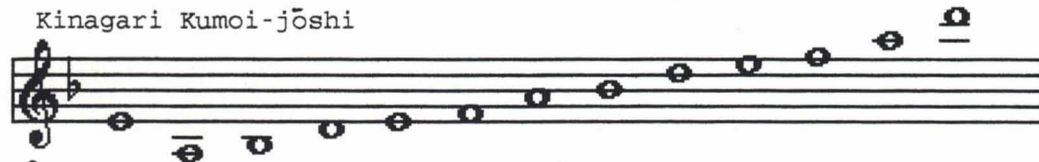
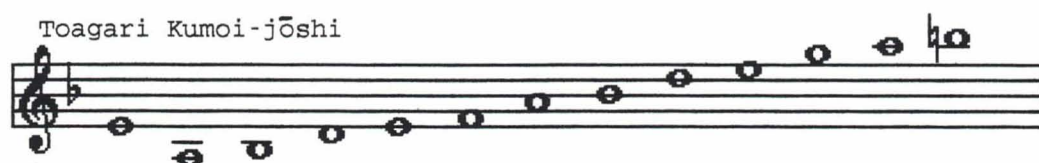
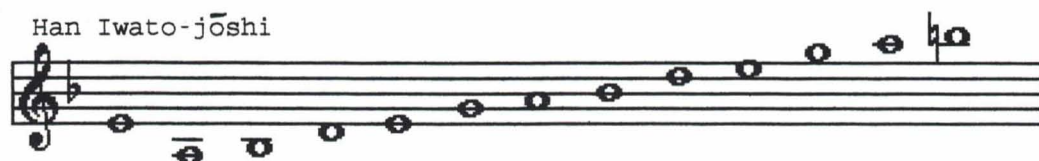
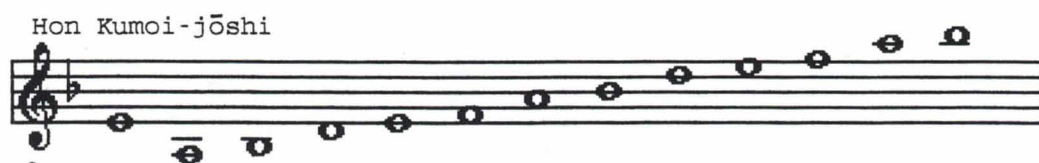


*Tuning Scale Examples of Yamada-Ryuu*

(Note: from *Nakanosima Kinchi Zenshū* by K. Hirano)

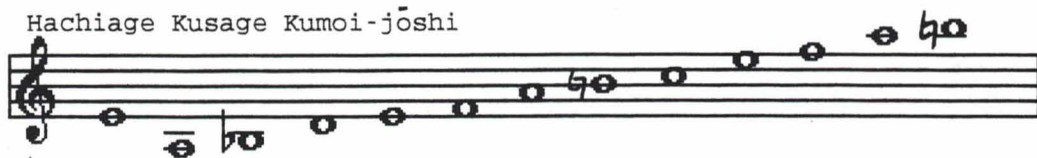


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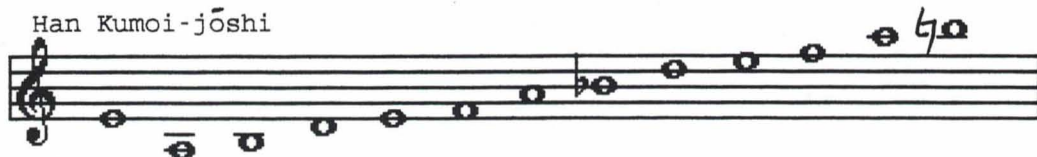


## Hachiage Kusage Kumoi-jōshi

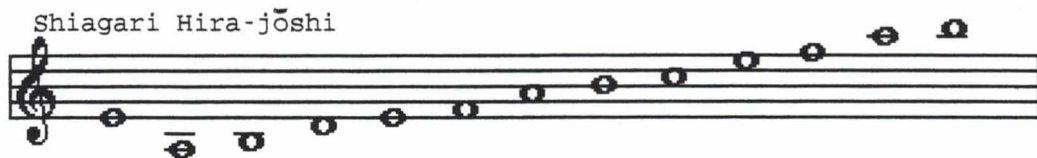


2. Group B:

Han Kumoi-jōshi



## Shiagari Hira-jōshi



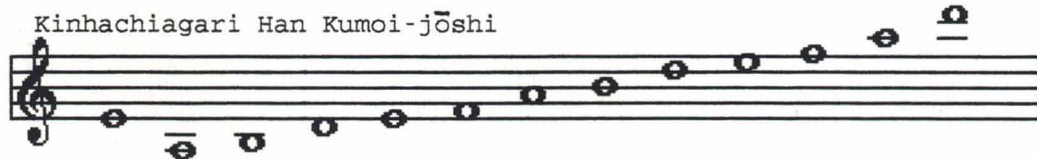
Hachiagari Han Kumoi-jōshi



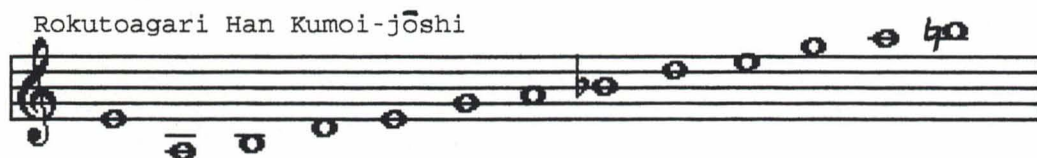
Kinagari Han Kumoi-jōshi



Kinhachiagari Han Kumoi-jōshi



Rokutoagari Han Kumoi-jōshi





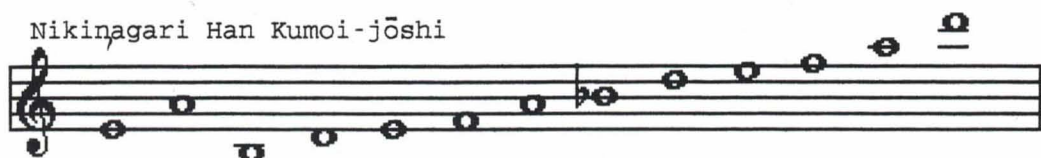
Rokutokinagari Han Kumoi-jōshi



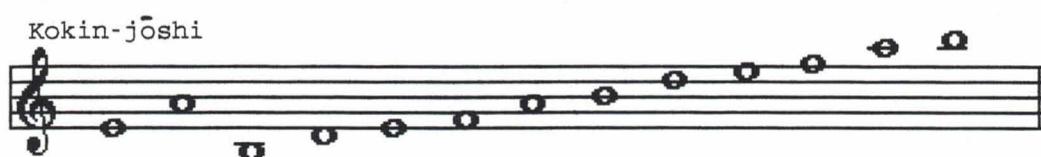
Tokinagari Han Kumoi-jōshi



Nikinagari Han Kumoi-jōshi

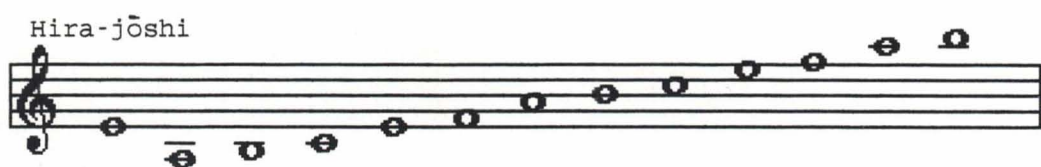


Kokin-jōshi



### 3. Group C:

Hira-jōshi



Kata kumoi-jōshi



Nakazora-jōshi





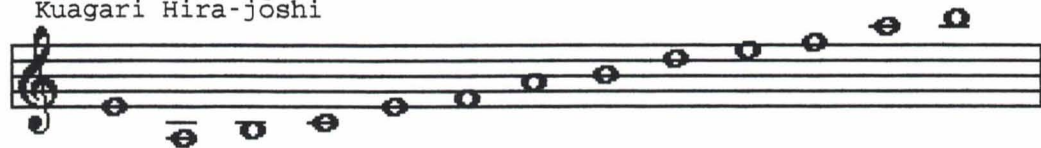
Toagari Hira-jōshi



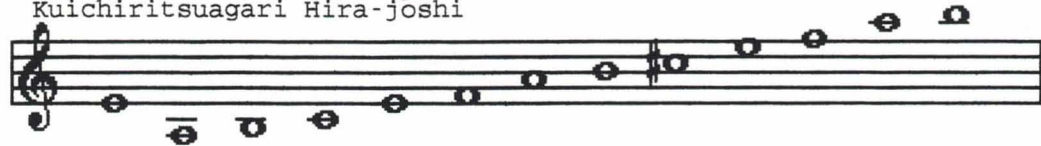
Tokuagari Hira-jōshi



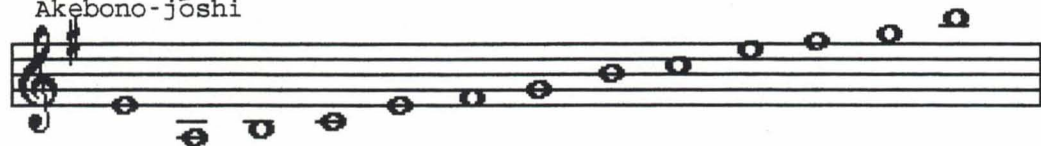
Kuagari Hira-jōshi



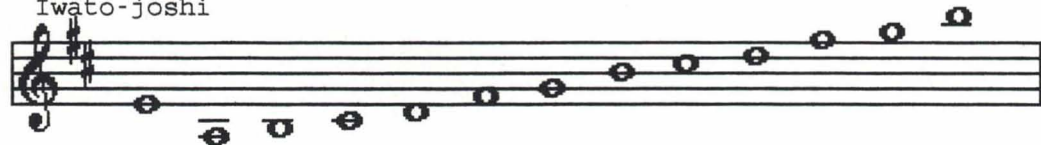
Kuichiritsuagari Hira-jōshi



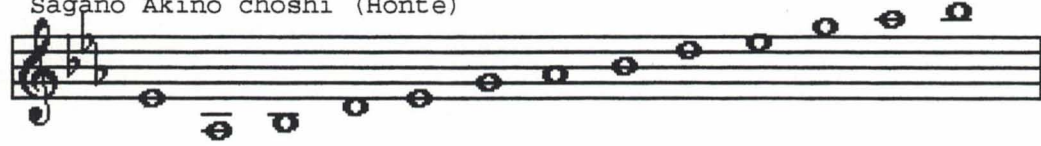
Akebono-jōshi



Iwato-jōshi



Sagano Akino chōshi (Honte)





Bayano Akino Crossin (Raede)

Ichikotsu    Tangin    Hyōjō    Shōzetsu    Shimomu    Sōjō

Fushō    Ooshiki    Rankei    Banshiki    Shinsen    Kamimu

Pitch	D	E	G	A	B
Name	Kyuu	Shoo	Kaku	Chi	U
Direction	Center	West	East	South	North
Season	Midsummer	Fall	Spring	Summer	Winter
Element	Earth	Gold	Plant	Fire	Water
Color	Yellow	White	Blue	Red	Black
Symbol	King	Subject	People	Matter	Object



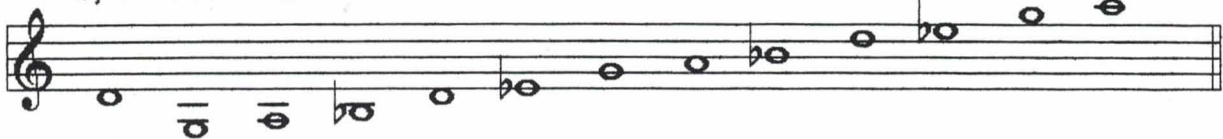
APPENDIX B:

Transcriptions of Three Complete Compositions

This appendix contains transcriptions of three koto compositions:

- *Gen no Shirabe* (1976) by Hozan Yamamoto (b. 1934)

Hira-jooshi on Ichikotsu

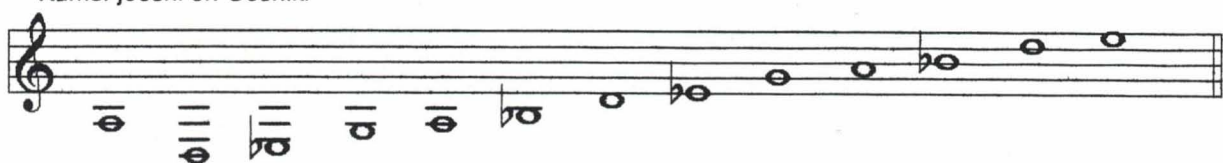


- *Karaginuta* (1913) by Michio Miyagi (1894-1956)

Hira-jooshi on Ichikotsu

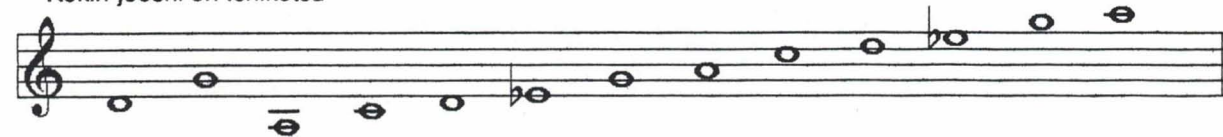


Kumoi-jooshi on Ooshiki

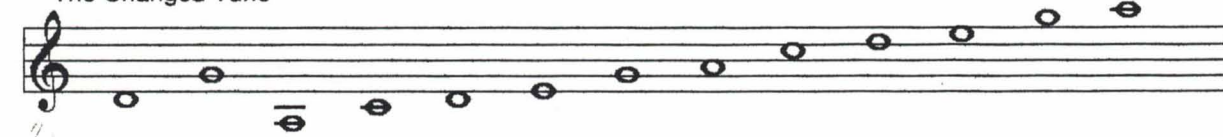


- *Natsu no Kyoku* by Kengyo Yoshizawa (1800-1872)

Kokin-jooshi on Ichikotsu



The Changed Tune





• Gen no Shirabe

1st dan *mf.*

1

5

9

13

2nd dan *mf.*

17

21

25



29

*mf*

Handwritten musical score for 'The Rose Tree'. The score is written on a single staff with a treble clef and a key signature of one flat (B-flat). The tempo/mood is marked 'mf' (mezzo-forte). The music consists of a series of eighth and sixteenth notes, with some rests. There are three measures of music, followed by a double bar line and then two more measures. The score ends with a double bar line. The page number '29' is written in the bottom left corner.

33

3rd dan *mp*

37

41

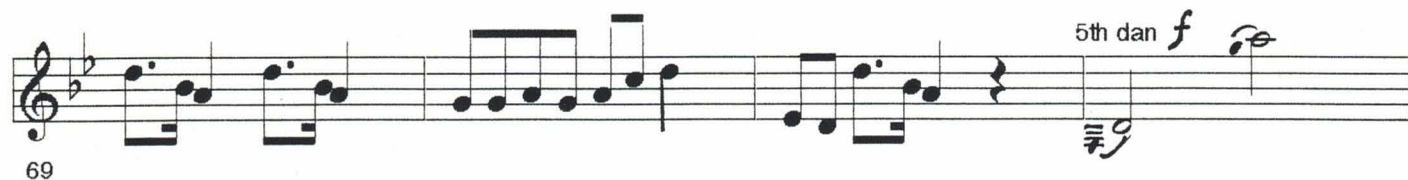
The first system of musical notation for 'The Rose Tree' is written on a single staff in G major (one sharp) and 3/4 time. It begins with a treble clef and a key signature of one sharp (F#). The melody starts on a quarter note G4, followed by a quarter note A4, and then a quarter note B4. A fermata is placed over the B4 note. The melody then continues with a quarter note A4, a quarter note G4, and a quarter note F#4. The bass line consists of a half note G3 and a half note F#3. The system ends with a double bar line.

53

rit.

4th dan *f*







85 *rit.*

89 *mf* 6th dan

93 *8vb*

97

101 *f*

105 *rit.* *tr.*

109 *mp*



• Karaginuta

A(a)

Higher Koto

Lower koto

1

5

9

13



System 1 (Measures 17-20):  
 Treble clef, key of B-flat major (two flats).  
 Measure 17: Treble has a half note G4, a quarter note F#4, and a quarter rest. Bass has a half note G2, a quarter note F#2, and a quarter rest.  
 Measure 18: Treble has a half note A4, a quarter note G4, and a quarter rest. Bass has a half note A2, a quarter note G2, and a quarter rest.  
 Measure 19: Treble has a half note B4, a quarter note A4, and a quarter rest. Bass has a half note B2, a quarter note A2, and a quarter rest.  
 Measure 20: Treble has a half note C5, a quarter note B4, and a quarter rest. Bass has a half note C3, a quarter note B2, and a quarter rest.  
 Japanese lyrics: オ (O), オハオ (Oha O).

System 2 (Measures 21-24):  
 Measure 21: Treble has a half note D5, a quarter note C5, and a quarter rest. Bass has a half note D3, a quarter note C3, and a quarter rest.  
 Measure 22: Treble has a half note E5, a quarter note D5, and a quarter rest. Bass has a half note E3, a quarter note D3, and a quarter rest.  
 Measure 23: Treble has a half note F#5, a quarter note E5, and a quarter rest. Bass has a half note F#3, a quarter note E3, and a quarter rest.  
 Measure 24: Treble has a half note G5, a quarter note F#5, and a quarter rest. Bass has a half note G3, a quarter note F#3, and a quarter rest.  
 Japanese lyrics: ヒ (Hi), オハ (Oha), オ (O), ヒ (Hi).

System 3 (Measures 25-28):  
 Measure 25: Treble has a half note A5, a quarter note G5, and a quarter rest. Bass has a half note A3, a quarter note G3, and a quarter rest.  
 Measure 26: Treble has a half note B5, a quarter note A5, and a quarter rest. Bass has a half note B3, a quarter note A3, and a quarter rest.  
 Measure 27: Treble has a half note C6, a quarter note B5, and a quarter rest. Bass has a half note C4, a quarter note B3, and a quarter rest.  
 Measure 28: Treble has a half note D6, a quarter note C6, and a quarter rest. Bass has a half note D4, a quarter note C4, and a quarter rest.  
 Japanese lyrics: オハ (Oha), オ (O), ヒ (Hi).

System 4 (Measures 29-32):  
 Measure 29: Treble has a half note E6, a quarter note D6, and a quarter rest. Bass has a half note E4, a quarter note D4, and a quarter rest.  
 Measure 30: Treble has a half note F#6, a quarter note E6, and a quarter rest. Bass has a half note F#4, a quarter note E4, and a quarter rest.  
 Measure 31: Treble has a half note G6, a quarter note F#6, and a quarter rest. Bass has a half note G4, a quarter note F#4, and a quarter rest.  
 Measure 32: Treble has a half note A6, a quarter note G6, and a quarter rest. Bass has a half note A4, a quarter note G4, and a quarter rest.  
 Japanese lyrics: ス (Su), オ (O), オ (O), オ (O), オ (O).



(rit.) (a tempo) (b)

33

おハ オハ オ ハ

おハ オハ オ ハ

5 5

37

5

41

5

45

5



System 1, measures 49-52. The music is in 2/4 time with a key signature of two flats (B-flat and E-flat). The right hand features a melodic line with eighth and sixteenth notes, including a trill in measure 52. The left hand provides a rhythmic accompaniment with eighth and sixteenth notes. Measure numbers 49, 50, 51, and 52 are indicated below the staves.

System 2, measures 53-56. The right hand continues the melodic development with some rests. The left hand features a more active line with eighth notes and some triplets. Measure numbers 53, 54, 55, and 56 are indicated below the staves.

System 3, measures 57-60. This system introduces sixteenth-note passages in both hands. The right hand has a more complex melodic line with many sixteenth notes, while the left hand has a steady eighth-note accompaniment. Measure numbers 57, 58, 59, and 60 are indicated below the staves.

System 4, measures 61-64. The right hand continues with dense sixteenth-note passages. The left hand features a bass line with an octave sign (8va) in measure 61, indicating an octave lower. Measure numbers 61, 62, 63, and 64 are indicated below the staves.



System 1, measures 65-68. The music is in 3/4 time with a key signature of two flats (B-flat and E-flat). The right hand features a series of eighth-note chords and a final sixteenth-note triplet. The left hand plays a steady eighth-note accompaniment. Measure 68 includes a fingering '5' above the right hand and a fermata over the final chord.

65

System 2, measures 69-72. Measures 69 and 70 show the right hand with a descending eighth-note scale and a final triplet. Measures 71 and 72 feature the right hand with a half-note chord and a fermata, while the left hand continues with eighth notes. Measure 72 includes a fingering '5' above the right hand.

69

System 3, measures 73-76. Measures 73 and 74 show the right hand with a descending eighth-note scale and a final triplet. Measures 75 and 76 feature the right hand with a half-note chord and a fermata, while the left hand continues with eighth notes. Measure 76 includes a fingering '5' above the right hand and an '8vb' marking below the left hand.

73

System 4, measures 77-80. Measures 77 and 78 show the right hand with a descending eighth-note scale and a final triplet. Measures 79 and 80 feature the right hand with a half-note chord and a fermata, while the left hand continues with eighth notes. Measure 80 includes a fingering '5' above the right hand.

77



81

5

This system contains measures 81 through 84. The right hand features a melodic line with eighth and sixteenth notes, while the left hand provides a harmonic accompaniment with chords and moving lines. A fingering of 5 is indicated in the left hand at measure 82.

85

8, 8<sup>vb</sup>

This system contains measures 85 through 88. The right hand has a dense texture of sixteenth-note chords. The left hand plays a steady eighth-note accompaniment. A dynamic marking of 8, 8<sup>vb</sup> is present at the start of measure 85.

89

8<sup>vb</sup>

This system contains measures 89 through 92. The right hand continues with complex chordal textures. The left hand has a more active role with eighth-note patterns. A dynamic marking of 8<sup>vb</sup> appears at the end of measure 92.

93

This system contains measures 93 through 96. The right hand features a series of sixteenth-note chords. The left hand has a melodic line with eighth notes and rests. Accents are placed over several notes in the left hand across the system.



97

This system contains measures 97 through 100. The right hand features a complex, rapid sixteenth-note pattern in measures 97 and 98, which transitions into a more melodic line in measures 99 and 100. The left hand provides a steady accompaniment with eighth and sixteenth notes.

101

This system contains measures 101 through 104. The right hand continues with a melodic line, featuring some grace notes and slurs. The left hand maintains a consistent rhythmic accompaniment.

105

This system contains measures 105 through 108. The right hand has a more active role with sixteenth-note runs in measures 105 and 106. The left hand continues with a steady accompaniment.

109

This system contains measures 109 through 112. The right hand features a very dense, rapid sixteenth-note passage in measures 109 and 110. The left hand continues with a steady accompaniment. The system concludes with a double bar line and a final chord marked with an 8va.



113

B

8vb. →

117

121

125



129

133

137

fast

141



Measures 145-148. The score is written for two staves. The left staff (treble clef) contains a melodic line with eighth and sixteenth notes, including a triplet in measure 146. The right staff (bass clef) contains a rhythmic accompaniment of eighth notes, with some measures featuring beamed sixteenth notes. Measure numbers 145, 146, 147, and 148 are indicated at the bottom of the right staff.

Measures 149-152. The score continues with two staves. The left staff (treble clef) features a melodic line with eighth notes and some rests. The right staff (bass clef) continues the rhythmic accompaniment with eighth notes. Measure numbers 149, 150, 151, and 152 are indicated at the bottom of the right staff.

Measures 153-156. The score continues with two staves. The left staff (treble clef) has a melodic line with eighth notes and rests. The right staff (bass clef) continues the rhythmic accompaniment with eighth notes. Measure numbers 153, 154, 155, and 156 are indicated at the bottom of the right staff.

Measures 157-160. The score continues with two staves. The left staff (treble clef) has a melodic line with eighth notes and rests. The right staff (bass clef) continues the rhythmic accompaniment with eighth notes. Measure numbers 157, 158, 159, and 160 are indicated at the bottom of the right staff.



161

(rit.)

ハ オ ハ オ ハ

(rit.)

ハ オ ハ オ ハ



• Natsu no Kyoku

(moderate Tempo (♩ = 90))

(a)



1



5



9



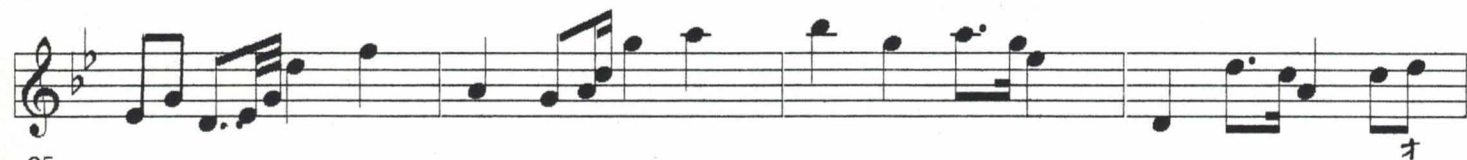
13



17



21



25



29



(Maenta) I - so - o -

33  $\frac{1}{2}$ -

no - ka a - mi, Fu ru - ki

37

i - mi - ya - ko - no

41

Ho to o - to - gi - su.

45



49

(A note)

This system contains two staves. The top staff has a whole rest in the first measure, followed by a half rest in the second, and then a series of eighth and sixteenth notes in the third and fourth measures. The bottom staff begins with a half note, followed by a quarter note, and then a series of eighth and sixteenth notes. A handwritten annotation "(A note)" is placed above the first measure of the bottom staff.

53

Ko e ba --ka

This system contains two staves. The top staff has a whole rest in the first measure, followed by a half note, and then a series of eighth and sixteenth notes in the second, third, and fourth measures. The bottom staff begins with a half note, followed by a quarter note, and then a series of eighth and sixteenth notes. The lyrics "Ko e ba --ka" are written below the top staff.

57

ri ko - .. - - so Mu ka -

This system contains two staves. The top staff has a half note, followed by a quarter note, and then a series of eighth and sixteenth notes in the second, third, and fourth measures. The bottom staff begins with a half note, followed by a quarter note, and then a series of eighth and sixteenth notes. The lyrics "ri ko - .. - - so Mu ka -" are written below the top staff.

61

si na ri - i . . . . ke - . . .

This system contains two staves. The top staff has a half note, followed by a quarter note, and then a series of eighth and sixteenth notes in the second, third, and fourth measures. The bottom staff begins with a half note, followed by a quarter note, and then a series of eighth and sixteenth notes. The lyrics "si na ri - i . . . . ke - . . ." are written below the top staff.



65

e - re

(ainote)

Na tsu

69

ya

ma ...

ni

73

Ko

i - i - si - ki -

77

hi -to

o - ya



81

8<sup>ve</sup>

ri - - ni - - ke - - n -

85

(a note)

Ko e fu - ri - -

x 2.

(4/2)

89

ta - te - -

te - -

Na - ku - - ho -

3

93

to - - to - - gi - - su

(rit.)

40

45



(Trans.) (a tempo)

97

(rit.) (change Tune)

101

tr.

105

109

113

117

x2

(4/2)

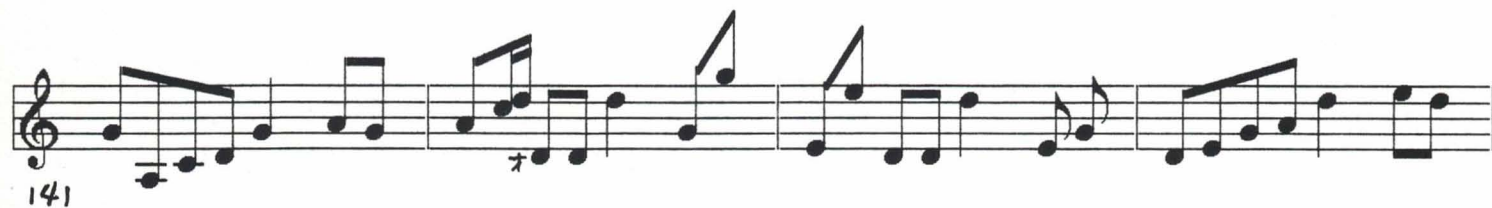
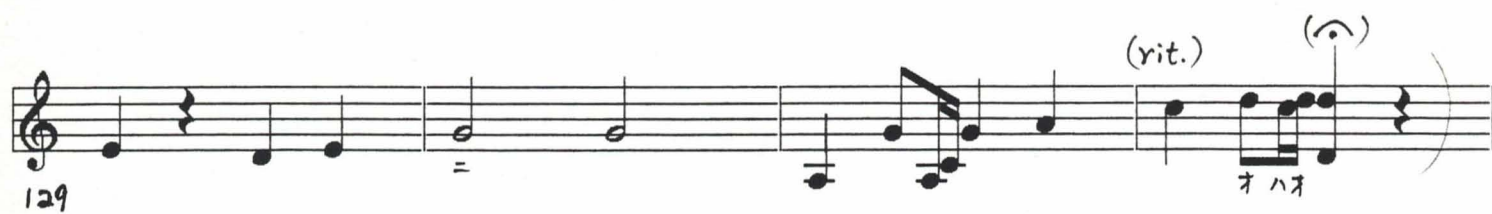
(4/4)

(a tempo)

121

125







Tegoto

d  
①

Ichidan

Nidan  
156

160

164

168

172



176

ス ス ス ス

ス ス オ

A musical score for the song 'The Rose Tree'. It consists of two staves. The top staff is the melody, written in treble clef with a key signature of one flat (B-flat). The bottom staff is the accompaniment, also in treble clef with a key signature of one flat. The melody starts with a quarter note G4, followed by eighth notes A4-B4, a quarter note C5, and eighth notes B4-A4. The accompaniment features a rhythmic pattern of eighth and sixteenth notes, with some triplets indicated by a '3' over a group of notes. The score is divided into measures by vertical bar lines. The tempo '180' is written at the bottom left.

Chirashi (Original Tune)

Chirashi (Original Tune)

The musical score for "Chirashi (Original Tune)" is written for two staves in G major (one sharp) and 4/4 time. The melody is composed of eighth and sixteenth notes, often beamed together in groups of four. The accompaniment consists of a steady eighth-note bass line. The piece concludes with a final cadence. The number "192" is printed at the bottom left of the page.



196

200

204

208

212



216

220

224

228

232



Handwritten musical score system 1, measures 236-239. The system consists of two staves in G major (one sharp). The melody in the upper staff features eighth and sixteenth notes, with measure 236 containing three equals signs (= = =). The lower staff provides a harmonic accompaniment with similar rhythmic patterns.

Handwritten musical score system 2, measures 240-243. The system continues the melody and accompaniment from the previous system. Measure 240 starts with a treble clef. The notation includes various note values and rests, with some notes marked with a '7'.

Handwritten musical score system 3, measures 244-247. This system includes a key signature change to E major (two sharps) in measure 244. Above the first staff, there is a handwritten annotation 'x2' with a bracket. The notation includes complex rhythmic figures and rests.

Handwritten musical score system 4, measures 248-251. The system includes vocal lyrics: "(Atouta) Ha - chi - su - ba - - - no -". The melody is written in the upper staff, and the accompaniment is in the lower staves. Measure 248 begins with a treble clef. The system concludes with a triplets (3) marking over the final notes.



Ni - go - ri - ni - si - ma

252

- nu - - - Ko - - ko - ro - mo - - te

256

(ainote) Na ni ka - - - wa

260



tsu yu - o - - - Ta - ma - - to - a za -

264

mu - ku -

268

Na -

272



tsu

- to

a - ki -

- to -

276

Yu ki

- ko -

u so ra

a

280

no -

Ka yo

- i -

- ji -

284



288

wa - (a note) Ka - ta - e

292

Su zu - si - ki - ka ze - (rit.)

296

ya - fu - ku u - ra - (rit.)



A handwritten musical score on three staves, likely for a piano or guitar. The music is written in a key with two flats (B-flat and E-flat) and a common time signature. The first staff begins with a treble clef and a key signature of two flats. The second and third staves also begin with a treble clef and a key signature of two flats. The notation includes various notes, rests, and trills. The first staff has a series of eighth notes followed by a trill. The second staff has a series of eighth notes followed by a trill. The third staff has a series of eighth notes followed by a trill. The score ends with a double bar line.

300



## APPENDIX C:

Graduate Lecture-Recital: Program, Notes and Handout

This appendix contains the program, notes and handouts from the  
Lecture-Recital.



San Diego State University  
 College of Professional Studies and Fine Arts  
 Department of Music  
 presents

## Graduate Lecture-Recital

KAZUKO KOBRYN  
*ethnomusicology*  
*koto*

*In partial fulfillment of requirements  
 for the Master of Arts degree*

*with*

HIROMI HASHIBE  
*koto*  
 MASAKAZU YOSHIZAWA  
*shakuhachi*

Tuesday, April 2, 1991  
 seven o'clock  
 Smith Recital Hall

A survey of the tuning and scale systems of the Ikuta School of Koto as evidenced through selected works.

### I. Lecture

1. Introduction: Historical Background of Koto Music
2. The Structure of Koto Compositions, Including Ornamentation and Melodic Form
3. Analysis of Tuning System and Related Scale Systems in Selected Koto Compositions
4. ~~Examples of Ikuta~~ Tuning Systems in Selected Koto Compositions *Koto Construction and Playing Techniques.*
5. Conclusion/Summary: Koto Tunings of the Ikuta School

— INTERMISSION —

### II. Selected Koto Compositions of Ikuta School

1. *Karaginuta* ..... Michio Miyagi  
 (1894-1956)

This work was inspired by the sounds of women pounding cloth with blocks in a moonlit river. Influences from Western and Chinese-derived Korean music are evident in its style. It was composed in 1913 while the composer was in Korea.

2. *Gen no Shirabe* ..... Hozan Yamamoto  
 (b. 1934)

A contemporary work in Classical style. It follows *danmono* (classical sectional works) form in a rather free style. It was composed in 1976 for a shakuhachi and koto duet.

3. *Natsu no Kyoku* ..... Kengyo Yoshizawa  
 (1800-1872)

This is one of five classical works called *Kokinumi* (compositions for four seasons and one other piece). Associated with summer time, the lyrics are derived from ancient poems in the *Kokin Wakashuu* (913 A.D.). In this piece two poems are separated by an instrumental *tegoto* section, ~~that suggests clear water flowing deep in the mountains.~~

*The Introduction*



# **Tuning and Scale Systems of the Ikuta School of Koto**

*A Graduate Lecture-Recital*

Kazuko Kobryn  
Music Department  
San Diego State University  
April 2, 1991



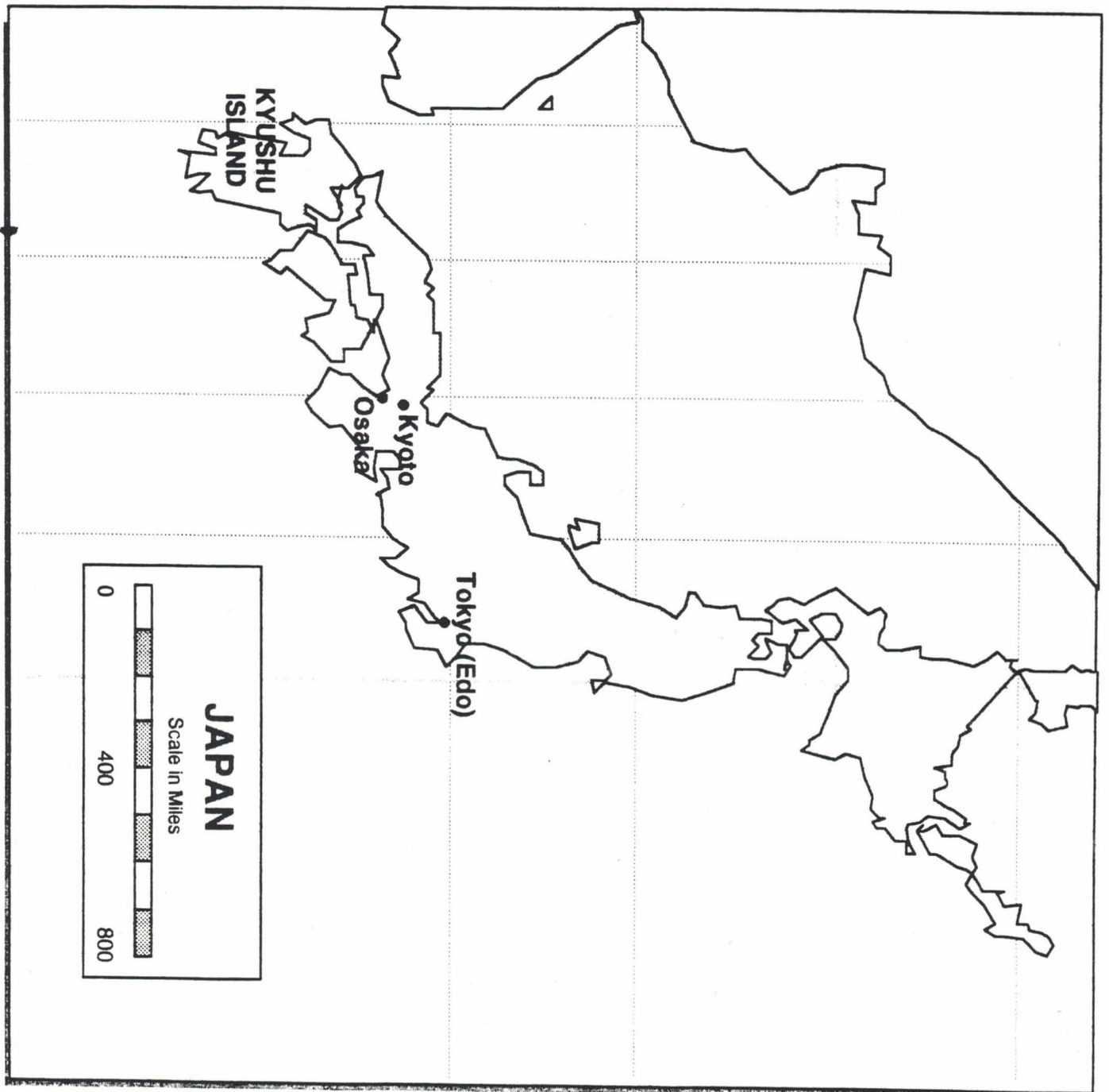
# ***Koto Tuning & Scale Systems***

## **Lecture Overview**

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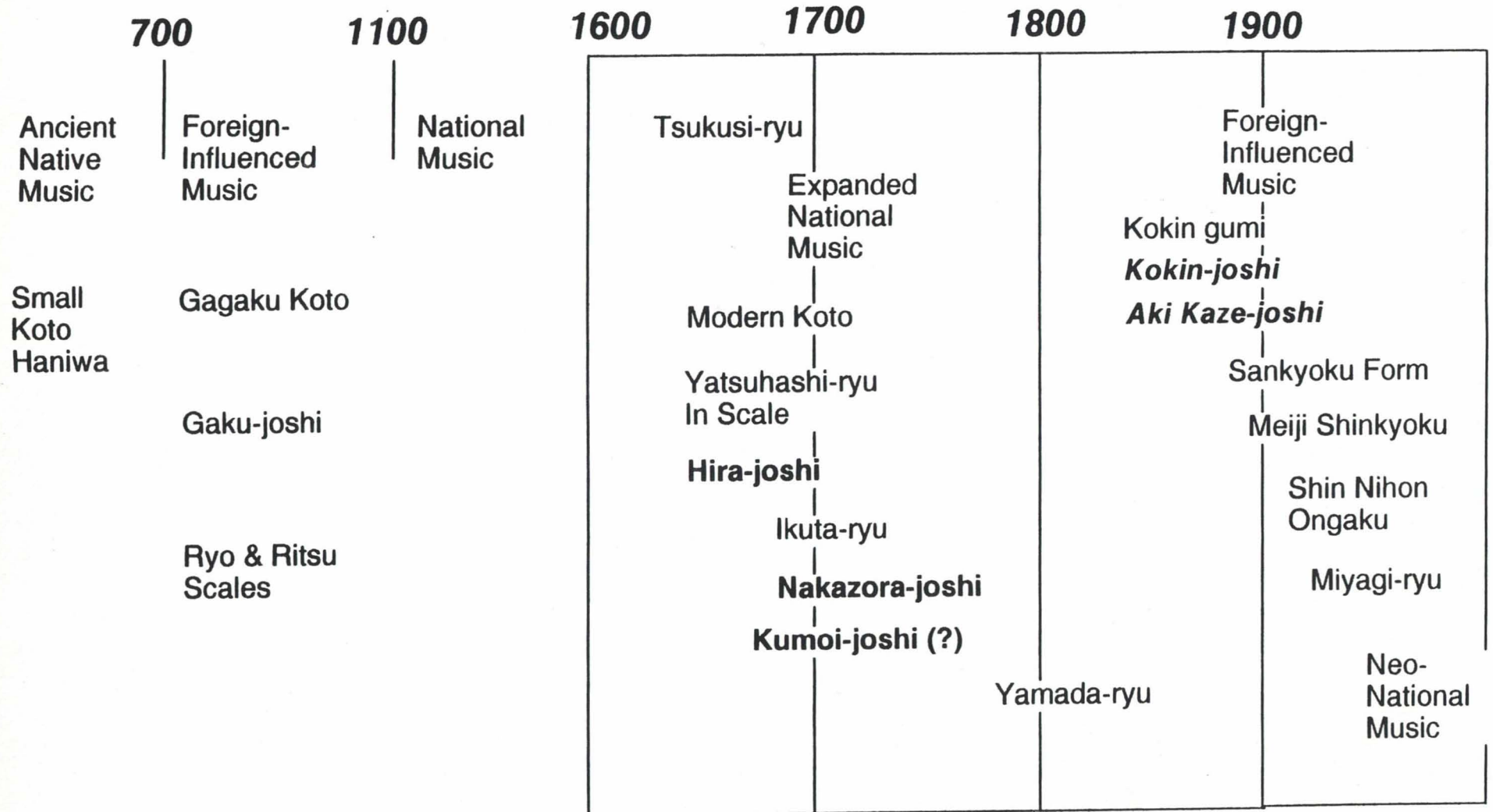
- I. Introduction: Historical Background of Koto Music**
- II. Koto Construction and Playing Techniques**
- III. The Structure Of Koto Compositions,  
Including Tuning**
- IV. Analysis of Tuning Systems and Related Scale  
Systems in Selected Koto Compositions**
- V. Conclusion/Summary: Koto Tunings  
of the Ikuta School**







# Koto History



## Notes:

1. Dates are approximate, especially pre-1600.
2. Questionable dates are followed by "(?)."
3. Tuning system developments are shown in **bold** type.



## ***Koto Tuning & Scale Systems*** **Construction**

---

- **13 -String Zither**
- **Shape Resembles a Dragon**
- **Approximately 6' Long and 10" Wide**
- **Usually Made of Pawlonia Wood**



## ***Koto Tuning & Scale Systems***

### ***Playing Techniques***

---

- **Right-Hand Examples**

- + *Sukuizume*

- + *Uraren*

- + *Kororin*

- + *Awasezume*

- + *Surizume*

- + *Waren*

- + *Warizume*

- + *Kakezume*

- **Left-Hand Examples**

- + *Oshide*

- + *Atoosae*

- + *Kakeosae*

- + *Hiki iro*

- + *Yuri iro*

- + *Tsukiosae*



## ***Koto Tuning & Scale Systems*** **Composition Structure**

---

- **Elegant, Serene and Pure**
- **Based on Traditional *Gagaku* (Court) Music**
- **Thin Harmonic Structure**
- **Melody is Built on a Pentatonic Mode**
- **Mathematically-Precise Beat Units**
- **Basic Types**
  - + *Kigaku Kyoku*
  - + *Utamono*



## ***Koto Tuning & Scale Systems***

### **Basic Structure Types**

---

- ***Kigaku Kyoku***
  - + **Purely Instrumental Music**
  - + **e.g., *Karaginuta***
  - + **Subtype: *DanMono***
    - **Sectional Form**
    - **e.g., *Gen no Shirabe***
  
- ***Utamono***
  - + **Instrumental & Vocal Music**
  - + **Three-Part Structure:**
    - ***Maeuta* ("fore song")**
    - ***Tegoto* ("hand matter")**
    - ***Atouta* ("after song")**
  - + **e.g., *Natsu no Kyuku***



## ***Koto Tuning & Scale Systems***

### **Tuning System Analysis**

---

- **Modern Tuning Systems Are:**
  - + Based on 5-Tone *In* and *Yo* Systems
  - + Derived from *Ryo* and *Ritsu* 7-Tone Scales
- **Tuning is Effected by Positioning *Ji* (Bridges)**
- **5 Basic Pitches Are Arranged into Octaves**
- **Tone Hierarchy is Based on Main Tone and 4th and 5th Intervals**
- **Examples**
  - + *Hira-joshi, Kumoi-joshi, Kokin-joshi*



## ***Koto Tuning & Scale Systems*** **Summary/Conclusions**

---

- **History Can Be Traced to 8th & 9th Centuries**
- **Significant Tuning Developments During Last 400 yrs.**
- **Modern Tuning Systems Are:**
  - + **Based on 5-Tone *In* and *Yo* Systems**
  - + **Interchangeable Among Schools**
- **Predetermined Elements and Flexible Elements Combine to Express *Jo-Ha-Kyu***
- **Flexible Tuning Capability Represents Significant Potential for Music Experimentation**



## BIBLIOGRAPHY

- Adriaanz, Willemn. *The Kumiuta and Danmono Traditions of Japanese Koto Music*. Berkeley: University of California Press, 1973.
- Apel, Willi. *Harvard Dictionary of Music*. 2nd ed., Cambridge, Mass.: Harvard University Press, 1981.
- Cogan, Robert & Escot, Pozzi. *Sonic Design, The Nature of Sound and Music*. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1976.
- Harich-Schneider, Eta. *A History of Japanese Music*. London: Oxford University Press, 1973.
- Hirano, Kenji. *Nakanojima Kinichi Zenshuu*. Tokyou: Kinyosha, 1973.
- Hood, Mantle. *The Ethnomusicologist*. New ed., Kent, Ohio: The Kent State University Press, 1982.
- Kikkawa, Eishi (ed.). *Hoogaku Hyakkajiten*. Tokyo, Japan: Ongakunotomosha, 1984.
- Kikkawa, Eishi. *Nihon Ongakuno Rekishi*. (The History of Japanese Music.) Osaka: Sougensha, 1965.
- \_\_\_\_\_. *Miyagi Michio Den*. (Biography of Michio Miyagi.) Tokyo: Hougakusha, 1981.
- \_\_\_\_\_. *Hoogakueno Shootai*. (Invitation to Japanese Music.) Tokyo: Houbunkan, 1978.



- \_\_\_\_\_. *Hoogaku to Jinsei. (Japanese Music and Life.)* Tokyo: Soogensha, 1969.
- \_\_\_\_\_. *Nihon Ongakuno Biteki Kenkyuu. (Studies in the Aesthetics of Japanese Music.)* Tokyou: Ongakunotomosha, 1984.
- \_\_\_\_\_. *Nihon Ongakuno Seikaku. (Characteristics of Japanese Music.)* Tokyo: Ongakunotomosha, 1987.
- Kishibe, Sigeo. *The Traditional Music of Japan.* Tokyo: Ongakunotomosha, 1982.
- Kitahara, Yasuo (ed.). *Zenyaku Kogo Reikai-jiten.* Tokyo: Shoogakukan, 1987.
- Koizumi, Hideo. *Nihon Dentoo Ongakuno Kenkyuu. (Studies in Japanese Traditional Music.)* Tokyo: Ongakunotomosha, 1958.
- LaRue, Jan. *Guideline for Style Analysis.* New York: W.W. Norton, & Co., Inc., 1970.
- Malm, William P. *Japanese Music.* Tokyo: Charles E. Tuttle Co., Inc., 1968.
- \_\_\_\_\_. *Music Cultures of the Pacific, The Near East, and Asia.* (pp. 185-211) Englewood Cliff, N.J.: Prentice-Hall Inc., 1977.
- \_\_\_\_\_. *Six Hidden Views of Japanese Music.* Berkeley and Los Angeles: University of California Press, 1986.
- May, Elizabeth. *Musics of Many Cultures: Some of Japan's Musics and Musical Principles.* Berkeley: University of California Press, 1980.



- \_\_\_\_\_. *The Influence of the Meiji Period on Japanese Children's Music*. Berkeley: University of California Press, 1963.
- Morgan, Hazel B. *Music Research Handbook*. Northwestern University, Evanston, Illinois, 1962.
- Nettle, Bruno. *Theory and Method in Ethnomusicology*. London: Collier-Macmillan Ltd., 1964.
- \_\_\_\_\_. *The Western Impact on World Music*. New York: Shirmer Books, 1985.
- Ongakujiten. (Music Dictionary.)* Tokyo: Heibunsha, 1986.
- Sadie, Stanley (ed.). *The New Grove Dictionary of Music and Musicians*, 6th ed. s.v. "Japan".
- Sadie, Stanley ed. *The Norton/Grove Concise Encyclopedia of Music*. New York: W.W. Norton & Co., 1988.
- Tanabe, Hisao. *Hoogakujiten. (Dictionary of Japanese Musical Terms.)* Tokyo: Tokyodo, 1975.
- Touyama K. and Ebizawa S. (eds.) *Larousse de la Musique. "Hoogaku"*. Japan: Fukutake Publishing Co., Ltd., 1989.
- Ueki, Yasue. *Koto no Renshuu. (Koto Learning.)* Tokyo: Nihon Hoosoo-Kyookai, 1982.
- Wade, Bonnei C. *Tegotomono Music for the Japanese Koto*. Westport: Greenwood Press, Inc., 1976.
- White, John D. *The Analysis of Music*. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1976.



Yuize, Shinichi. *Sankyokujin no Tameno Kiso Gakuri Nyumon*.  
(Basic Introduction Theory for Sankyoku Ensemble  
Performers.) Unpublished lecture material.

#### PERIODICALS

*Kikanhogaku*, #26, Spring, by Hogakusha, 1981.

*Miyagikai Kaiho*, #129, Spring, by Miyagikai, 1984.

#### SCORES

Hozan, Yamamoto. *Gen no Shirabe*, unknown.

Miyagi, Kazue and Kiyoko. *Natsu no Kyoku, Kaede-tsuki* (Ikuta-ryuu  
Sookyoku). Tokyo: Hogakusha, 1986.

Miyagi, Kazue and Kiyoko. *Karaginuta* (Miyagi Michio Sakkyokushuu,  
Tokyo Geijutsu Daigaku Sookyokukayoo). Fukuoka: Masao  
Sakamoto, 1983.

Miyagi, Michio. *Ikuta-ryuu Sookyoku Senshuu*, vol. I, 37th edition.  
Tokyo: Hogakusha, 1988.

\_\_\_\_\_. *Ikuta-ryuu Sookyoku Senshuu*, vol. II, 23rd edition. Tokyo:  
Hogakusha, 1985.

\_\_\_\_\_. *Haru no Kyoku, Kaede-tsuki* (Ikuta-ryuu Sookyoku). Tokyo:  
Hogakusha, 1983.

\_\_\_\_\_. *Shintakasago* (Ikuta-ryuu Sookyoku). Tokyo: Hogakusha,  
1987.



\_\_\_\_\_. "*Miyako Odori*," Miyagi Michio Sakkyokushuu, Tokyo Geijutsu Daigaku Sookyokukayoo. Fukuoka: Hideo Sakamoto, 1964.

\_\_\_\_\_. "*Tooginuta*," Miyagi Michio Sakkyokushuu, Tokyo Geijutsu Daigaku Sookyokukayoo. Fukuoka: Masao Sakamoto, 1988.

Miyagi, Michio. "*Nara no Shiki*," Miyagi Michio Sakkyokushuu, Tokyo Geijutsu Daigaku Sookyokukayoo. Fukuoka: Masao Sakamoto, 1988.

\_\_\_\_\_. "*Chiyo no Yorokobi*" and "*Noki no Sizuku*," Miyagi Michio Sakkyokushuu, Tokyo Geijutsu Daigaku Sookyokukayoo. Fukuoka: Masao Sakamoto, 1990.

Nakajima, Yasuko. "*Taka*" by Tadao Sawai (Seiha Kookan Sookyoku Gakufu). Tokyo: Maekawa Shuppansha, 1985.

#### RECORDS AND TAPES

Grafe, Marc and Tsuge, Gen'ichi. *Koto Kumiuta*, voice and koto by Namino Torii, New York: Lyrichord Discs Inc., 1976.

Kikkawa, Eishi. and Miyagi, Ei. *Miyagi Michio Sookyoku Zenshuu*, vol. I. Tokyo: Nihon Victor Co., 1962.

King Orchestra. *Nihon no Shirabe*, Japan: King Record Co., 1982.

Miyagi, Kiyoko and Miyagi, Kazue. *Sookyoku; Haru no Kyoku, Natsu no Kyoku, Aki no Kyoku, Fuyu no Kyoku, Chidori no Kyoku*. Tokyo: Victor Ongaku Sangyoo Kabushikigaisha.

Miyagi Sooke. *Miyagi Michio-Hen Ikuta-Ryuu Sookyoku Senshuu*, vol. I (*Joo* and *ge*). Tokyo: Victor Ongaku Sangyoo Kabushikigaisha (VCK-1316 and VCK-1317).



*Sakura Sakura/Rokudan no Shirabe*, Japan: Nippon Columbia Co.,  
Ltd., 1981.

Takasago, Katsumasa. *The Imperial Court Music of Japan*, performed  
by the Kyoto Imperial Court Music Orchestra, New York:  
Lyrichord Discs Inc., List 7126.