Volume 3, Chapter 26:
String Tuning Methods

Translator's note: This section gives a number of tuning methods including pressed notes and harmonics. The tuning methods given in this chapter are relative to an assumed reasonably high or low pitch. For example one may assume that string seven is correct, and then proceed to tune string five to it, etc. One can say that in general string 1 has been tuned somewhere around A1 to C2, although since the qin often lacks accompaniment, no fixed absolute pitch may be used. In terms of absolute pitch, modern players often tune the lowest string (string one) to two Cs below middle C (C2 at 65.406 hz) and thus string seven would be tuned to D3, one octave and one whole tone higher. Qin (possibly with silk strings as opposed to the nylon-metal hybrid string) have also been tuned lower with string one set at or around a minor third lower at A1 (55) hz. In relative terms we say that the normal tuning from string one to string seven is: 5 6 1 2 3 5 6. In absolute terms assuming C2 for the first string, we would have: C D F G A C D. Strings six and seven are an octave higher than strings one and two. Of course other tunings have been used, but the normal tuning is the object of this chapter. Students should learn this tuning first, and then learn how to move to other tunings based on the fundamental ideas here.

We use the left and right hands according to the proper fingering techniques. Using the ring finger of the left hand press at the tenth hui on the fifth string. With the right hand first play the seventh open string using tiao (挑). Then play the fifth string with gou (勾).[1] The tones should match and should sound like the two words "xian-weng" (仙翁).[2] If the tone matches at a position below the tenth hui, then the fifth string is high, or the seventh string is low. If the tone matches above the tenth hui, then the fifth string is low, or the seventh string is high.[3] One may tighten or loosen the fifth string, or tighten or loosen the seventh string as appropriate as long as tones match at the tenth hui position.[4]

Here when we begin to tune the strings, we may not have a fixed standard, but instead may according to our inclination, tighten or loosen (one string in the pair). If we then have decided that this (tuned) string will provide a fixed standard, we may take (this initial tuning) as our chief (tone). Then as for achieving harmony by tightening or

[1] Tiao is played with the index finger moving away from the player. Gou is played with the middle finger plucking in towards the player. See Volume 4, Chapter 4, *Dictionary of Right-Hand Symbols* for more information.

[2] Xian-weng cao (Immortal old man's lament 仙翁操) is a qin tuning piece in various forms and begins with the words "xian weng" with two notes at the same pitch on different strings. Thus the term xian-weng can refer to matching up one pressed and one open string in harmony.

[3] Put another way, the tones should match with the pressed finger exactly lined up with the hui. Matching tones are typically in unison. In some cases they may be an octave apart.

[4] A beginning student might best take the seventh string as the correct pitch and tune the fifth string to it. This is because the seventh string if too tight might break. Of course if it is too low, then all the strings will be too low. You must use your judgment. String one or string seven should not be too slack or too tight.

loosening, here we are referring to the string (of the current pair) that is not yet tuned. We tighten or loosen it. We do not tighten or loosen the string that we regard as the chief (tone).[5]

Next take the left hand thumb and press the ninth hui of the fourth string. The right hand plays tiao on the seventh open string. Play the fourth string with kou. The tones should match. If the tone matches above or below the ninth hui, one should only tighten or loosen the fourth string *[the untuned string]*. If you change or move the seventh string *[the tuned string]*, then it will no longer harmonize with the fifth string *[a tuned string]*. At this point strings five, seven and four are set. Next using the left hand ring finger, press the fourth string at the tenth hui. The right hand plays the sixth open string with tiao. And then the fourth pressed string is played with kou. The strings should match in terms of their tones. If the tone matches above or below the tenth hui, only tighten or loosen the sixth string. Do not change or move the fourth string, else it may not match the seventh string. Now strings five, seven, four, and six are set. According to the previous method, press the third string at the tenth hui, eighth fen. This should harmonize with the fifth open string. Then press the second string at the tenth hui. This should harmonize with the fourth open string. Press the first string at the tenth hui. This should harmonize with the third open string. Only with the first string, use the middle finger (to press the string). With the others use the ring finger. As for the right hand, tiao is used to play open strings, and kou is used for pressed strings. Thus we make "hsien-weng". This technique can be called the small interval *[separated by one string]* tuning technique.

Again using the left hand thumb, press the fourth string at the ninth hui. The right hand plays tiao on the open seventh string. And then plays kou on the pressed fourth string. They should match. Then press the string at the ninth hui. This should match the open sixth string. Then press the second string at the ninth hui. This should match the open fifth string. Then press the first string at the ninth hui. This should match the open fourth string. In all cases use the thumb to press (the string). The right hand uses tiao with open strings, and kou with pressed strings and plays "hsien-weng". This is the big interval tuning method *[two strings separate the fingers]*.

Again play the seventh string with tuo (托) and the second string with kou. And then play the sixth string with tuo and the first string with kou. All are open strings and one makes a "hsien-weng". Alternatively press one string and leave the other open or press both strings and make a "hsien-weng". Any pressing must be done at the seventh hui. When pressing the first string, use the middle finger. When pressing the second string, use the ring finger. Use the thumb with strings six and seven. All are best done in a continuous style. The small and large interval tuning methods are thus made ready.

It is also appropriate to use harmonics for tuning. Here we also have small and large interval methods. The left hand thumb floats and presses the seventh string at the ninth

[5] One proceeds two strings at a time, taking one string as the correct string, and another string as the string to be tuned. For example, here we could start with string seven as correct, and tune string five to seven. Then proceed to the next set of strings, which are made to harmonize with strings five and seven.

hui. The index finger plays the harmonic at the tenth hui of the fifth string. The right hand plays tiao on the seventh and gou on the fifth string with a resulting matching tone. Now according to the method employ the same technique on strings six and four, then five and three, four and two, and three and one. All make a "xian-weng", except that the five three string pair does not work at nine ten *[the fifth string ninth hui, and the third string, tenth hui]*. Harmony instead is found at the tenth hui for the fifth string, and the eleventh hui for the third string. In addition, string five, hui seven and string three, hui eight also make matching pairs. This is the naturally derived from the so called Ming tuning with the third string as gong (宮) and the fifth string as jue (角).[6] This then is the small interval harmonic tuning method.

One may also take the left hand ring finger and play a harmonic at the tenth hui of the seventh string. Then play a harmonic with the index finger at string four, hui nine. The right hand uses tiao on string seven and gou on string four and produces a "xian-weng". In succession proceed according to the method. Go on to string pairs six and three, five and two, and four and one. All should match. This then is the large interval harmonic tuning method.

There are three tuning methods in all: pressing (strings), harmonics, and open strings. Only the open string method is difficult.[7] One must have a sharp and well practiced ear that is well versed in the musical tones. How could a beginner have this facility? One must first begin with the two methods of pressing strings and playing harmonics and learn it well with an intelligent ear and no mistakes. Then after a long time, you can use the open string method. In qin playing, one cannot avoid diligent preparation. It is thus appropriate to first study tuning the strings. The ancients said: "if you do not study playing in tune, you cannot master the string instruments."[8] This illustrates our meaning. Any beginning of study must include tuning methods, and then later proceed to studying qin songs. Thus in making music, one will have a natural harmony. If the tuning is not in harmony, songs are played in vain. The making of music stems from attention to the qin. From this one can naturally see that those who are good at qin playing will be good at tuning.

[6] The author is referring to the traditional pentatonic scale of gong, shang, jue, zhi, yu, with the third string taken as gong (or do as in do re me so la)

[7] On the other hand, a modern student can purchase an electronic guitar tuner and use it with the qin, thus rendering this particular technique quite easy. One can set the first string to C2 or A1 (as mentioned in the translator's note at the beginning of this chapter) and tune all the other strings either with harmonics or the electronic tuner.

[8] This is from the Confucian Li Ji (The Book of Rites), Xue Ji: 不學操縵, 不能安弦. The basic sense of the passage is that one should study details and then enjoy a greater mastery over an art.