

CHAPTER THREE
QING

I. INTRODUCTION

The qing (磬), a "musical stone" popular during Shang and Zhou times, is generally called a "pitched stone" or "stone chime" in English. Neither term is very suitable, because the earliest ones were probably used singly and not in a pitched set, and there is as yet no proof that they were tuned to a specific pitch. Probably they were just meant to give a tone or a signal, like any simple percussion instrument. The word "chime" may incorrectly give the impression of a bell-shaped or tube-shaped instrument. Therefore, to avoid confusion, the original Chinese name qing will be used in this work, unless otherwise specified.

It is generally believed that the modern word 磬 may have come from the OBG 磬 (Sun :385), which shows a triangular qing (𠄎) suspended by some strings (彡), and a hand holding a mallet (𠄎). The radical "stone" (石) has been added to the bottom of the modern word, to clarify that the instrument is made of stone. In my opinion, the pictograph 𠄎 found on a Shang qing (see section III.A.4) and on some oracle bones (see section I.C and section V) is probably the oldest representation of the instrument known so far.

A. Invention

It is impossible to prove who invented the qing, or if it was invented by one person at all. The names of some legendary pre-Shang "inventors" of qing (e.g., "Mu Ju," mentioned in the Shuo Wen, Juan 9.2.:39. 夬句) cannot be verified. It is possible that neolithic people might have invented a "qing" (of any shape) when they found that a pleasant sound could be produced by hitting a stone. It is likely that the earliest qing were perhaps some of their stone tools, and that even when qing were specially made, they may have served only to give a percussive sound rather than a particular musical pitch. In my opinion, the triangular qing of pre-Shang and Shang times might have developed from the triangular stone ploughshare (see section I.C). In the Shang Shu, the legendary pre-Shang musician Kui says: "Oh! When I strike the stone heavily and lightly, the animals all dance!" (Shang Shu, chapter "Yi zhi." 尚書益稷: "予擊石拊石, 百獸率舞"). This legendary story perhaps reflects how pre-Shang people used the qing in dance. The "animals" might have been people wearing masks or furs in a tribal dance.

B. The qing and the stone ploughshare

Guo Pu (A.D. 276-324 郭璞) seems to be the first scholar to have pointed out the similarity between the qing and the metal ploughshare. He says: "A large qing looks like a ploughshare" (Guo's annotation to the Er Ya, chapter "Instruments." 爾雅·釋樂·郭注:"鑿形似人犁金官"). Perhaps inspired by this, Chang Ren-xia suggested that primitive people at first used shells for ploughing, and later made stone tools in the shape of shells, using them for ploughing, cutting meat, and making percussive tones (WW 1978.7:77).

Chang's opinion might be correct, but it is hard to verify. It is not established that shell tools must have come before stone tools in all cultures. Shells were not available in all regions. My theory that the triangular qing has developed from a large stone ploughshare seems more reliable, and is indirectly supported by old texts and archaeology (see interpretation of the graph 𠂔 in section I.C). Some neolithic stone tools are included here to allow comparison with the shapes of pre-Shang and Shang qing:



Figure 4 -- Neolithic stone knife used in farming (石耘田器). Unearthed at Mei Yan, Wu Jiang, Jiang Su Province (江蘇省吳江縣梅堰). Ca. 3000 B.C.
中國原始社會
(From Zhong Guo Yuan Shi She Hui 1977:62)



Figure 5 -- Neolithic stone knife used in farming (石耒云田器). Unearthed at Qian Shan Yang, Wu Xing, Zhe Jiang Province (浙江省. 吳興縣. 錢山漾). Ca. 2700 B.C.

(Ibid.:81)



Figure 6 -- Neolithic stone ploughshare unearthed at the same site as Figure 5.

(Ibid.:81)



Figure 7 -- Stone ploughshare. Pre-Shang (?)
(From WW 1980.8:71)



Figure 8 -- Photo and drawing of a stone ploughshare unearthed in 1974. Pre-Shang (?)

(From WW 1977.1:91)





C. Interpretation of the graph 辰 (辰 :chen) "time"




The normal form of this graph in OBI is 辰, and its transformations can be 辰, 辰, 辰, 辰, 辰, 辰, and 辰 (Sun :562).¹ In OBI and bronze inscriptions it is mostly borrowed to signify the name of the fifth day of the twelve-day cycle. No one has been able to say convincingly what it shows and what its original meaning might be.²







In the classics this word has many meanings, including "suitable time" (Er Ya, chapter "Shi Xun" 爾雅·釋訓 : "不辰.不時也"), "day" (日), "stars" (星辰),

and others. In my opinion, the OBG does not show the sun, nor "a day" nor "a star."³ Its original meaning might be "suitable time"; this can be verified by OBI. One OBI says:

OBI 62 (Cun 1.1716)

			
貞	𠄎	吉	長
Divine: (We shall)	perform zhi-dance. (Is that an)	auspicious	time?

The above is one of the very few OBI in which the graph  is used to mean "time." The term "time" here does not refer to the present concept of hour and minute such as "1:30 p.m.," but "the appropriate time for doing a certain thing." In my opinion, the graph shows a person holding up both hands () to play on a triangular object () which might be an unused stone ploughshare or even a qing. The purpose of striking this object was to signify "time."

The object represented by the triangle in the graph is probably a qing. It may be argued that in the graph  there is no sign of the string with which the qing is suspended, and the "person" () is not holding a mallet. My opinion is that pictographs need not depict things in detail; the absence of the string and the mallet is not a problem. In fact the pictograph for the qing itself is "" without the string, the mallet and the hand (see below, section III.A.4). Two other OBG which I believe to be related to the qing,  and , also show only the triangle (section V). Similarly, the OBG  (莫鼓 = 鼓: jian, "sound of drum to signify danger and enemies," "alarming news") only shows a drum and a drummer, and no mallet is depicted (Sun :341).







I have observed that many examples of the graph  show that the person () is bending his body backward (Sun :562). This is natural when people have to reach up to something. Moreover, the triangular object is always above the person, never written  or . This strengthens my belief that it shows a qing or a piece of stone suspended high up. Correspondingly, a picture on a Zhou bronze wine vessel shows musicians performing; some qing are seen suspended high above the player who is holding up both hands. Part of this picture is reproduced here for comparison, without asserting that the graph  necessarily represents the same situation:



Figure 9 -- Part of a picture on a Zhou bronze wine vessel (hu) showing the qing being played. Ca. 5th century B.C.

(Based on Yang 1980:diag. 25)
For a more complete picture, see Figure 39.

My interpretation that the graph  shows a person hitting a qing is supported by the fact that the modern word 振 (:zhen), with the radical "hand" (扌) added on the left, not only means "to strike," "to perform" (Chapter Two, section I.H), but traditionally was used to refer particularly to performance on the qing. For instance, the Meng Zi says: "... bells are sounded and jade qing are struck (振)" (ch. 5, "Wan Zhang" part B. 孟子萬章下: "金聲而玉振之也").

In my opinion, striking the qing or triangular stone at first was not done for musical purposes but, rather, as a time signal. That the concept "appropriate time" is represented by such a graph has something to do with the social situation at the time when the graph was invented. Tribal people living in a small village needed a device to summon and assemble them when necessary, to tell them when it was time to get up and go to the field to work, and when to stop working and have a meal, and also to warn them of approaching enemies and fierce beasts. For such signals, they needed an object with which a loud sound could be made so that help could be called. Before metal bells and drums, other objects such as whistles, pipes, or horns might have been used. However, a percussion object would be more appropriate because no training would be needed to make it sound. It is reasonable to think that in some villages an unused stone ploughshare or a hollow piece of tree trunk may have been suspended somewhere so that it could be struck to give signals.

A stone ploughshare would suit this purpose. Because of its large size, suitable thickness and high density, it is capable of making a loud, sharp tone. Besides, there were usually holes drilled in the ploughshare, and this enabled it to be suspended and to sound easily. The qing may have developed from such a stone tool. Nowadays the qing is no longer used in regular music, but in some situations it has resumed its original function. In some Buddhist temples in Hong Kong, I have seen iron qing (in the shape of a bat, a fish, or other objects) suspended singly outdoors, usually about eight feet above the ground, and used as signal instruments.

In the old days percussion instruments were often used for timekeeping, signaling, and other functions. For instance, the clapper bell ling (鈴 : 𠄎) was rung by the king to convey orders. An OBG evolved from the pictograph of this instrument has the meaning "now" (𠄎 = 今 :jin) because when the king rang the bell, he wanted the servant to come now (see Chapter Five, sections III.A.1 and 3). Bells, drums and gongs are still used as signal instruments on many occasions.

With the graph 𠄎 interpreted according to my theory, its evolved meanings and the meanings of other words containing this graph as a component can now be explained more convincingly. The striking of the triangular stone (hereafter referred to as the "qing") was to signify "now it is time," as discussed above; this explains why it means "time" in OBI (No. 62 above) and in the classics (Er Ya, ch. "Shi Xun"; Shuo Wen 3.1:39). The stars are a phenomenon that appears timely; that is why in Chinese the stars are also named by this word chen (辰). The stars appear daily; thus this word also means "one day" (Zuo Zhuan, 9th year of Duke Cheng " 浹辰 "). When the sun rises, it is morning; thus with the radical "sun" (日) added to the top, it means "morning" (晨 :chen). In the old days one of the important things people had to watch for was the suitable time for sowing. One of the jobs of the official of agriculture was "to order the farmers to plough the land and not to miss the time" (Lü Shi Chun Qiu, Juan 6, ch. "Yin Lu" 呂氏春秋.音律:"令農覆土,毋或失時"). This explains the important relationship between time (辰) and agriculture, and why, with the radical "plants" (艸) added to the top, it means "agriculture" (蒔 = 農 : nong, Shima :164; Shuo Wen, Juan 3.1:40). This relationship also explains why some other words meaning "to weed" (葦 葦 :ru) also contain "辰" as a component (the stone ploughshare originally represented by the triangle may also have some relationship to this concept).

There are other words related to this graph 𦉳. The qing is struck with the hand, thus with the radical "hand" (扌) added to the left (振), it means "to strike" (Xun Zi, ch. "Wang Ba." 荀子王霸篇註:振擊也). Striking the qing later became a musical event, hence the meaning "to perform" (Zuo Zhuan, 28th year of Duke Zhuang "振蕩"). When the qing is struck, it trembles, hence the meaning "tremble" (Shuo Wen, Juan 14.2:30 "振震也").

Among the reasons for striking the qing were to awaken people, and perhaps to call for help, hence the meaning "to wake someone up" (Lü Shi Chun Qiu, Juan 1, "Meng Chun Ji," Gao's annotation. 呂氏春秋孟春紀高注:振蘇生也), and "to save" (Shuo Wen, Juan 12.1:40 振舉救也). When the qing was struck in the night, it could signify an enemy raid, thus shocking and terrorizing the sleeping soldiers or civilians. This meaning is found in the classics (振驚朕師 = "Terrify my soldiers," Shi Ji, Juan 1, "Wu Di Ji." 史記五帝紀), and also in OBI. For example, the Shang kings often made the following divination: "Tonight (our) army won't be terrified?" (AD 8 不昏 = 今夕師不振 Shima :164).

If my interpretation of the graph 𦉳 is correct, it shows that the qing developed from the stone ploughshare, and had a wide range of uses in ancient times. It was originally a signal instrument, and eventually developed into a musical instrument.

II. PRE-SHANG QING⁴

Traditionally, qing were named after the material of which they were made, or named by the way in which they were used, or simply named by their sizes. For instance, qing made of jade (nephrite 軟玉) were called qiu (玉球) or ming-qiu ("sounding qiu" - Shang Shu, ch. "Yi Zhi." 尚書益稷: "鳴球"). In an ensemble in the Zhou court, the four qing tuned to harmonize with the sheng (笙 "mouth-organ") were called sheng-qing (笙磬 "mouth-organ-qing" - Yi Li, Juan 7, "Da Shi Yi." 儀禮大射儀: "笙磬"). These were suspended on the eastern side of the court. A single large qing suspended on the west side that sounded with bass instruments (e.g. the large bell) was called song-qing or yong-qing (頌磬. 庸磬 Yi Li, Juan y, "Da Shi Yi"). Moreover, large qing could be called xiao (簫 Er Ya, ch. "Instruments." Guo Pu's annotation says that it could be made of jade), or li-qing (離磬 - Li Ji, Juan 14, "Ming

Tang Wei" 禮記明堂位:"離 磬 "). "Li" means "separate," "distinguish." The qing is said to have had a particular tone color that could be distinguished from other instruments, hence its name.

The above terminology sometimes causes confusion. When a qing is unearthed singly, we often have difficulty judging its original name/type. Archaeologists used to describe qing under two names, te-qing (特磬 "single qing") and bian-qing (編磬 "arranged qing" or "a set of qing"). The word te (特) originally referred to a bull, indicated by the radical "cow" (牛) on the left. A bull is usually larger than the female cows, and it often stays alone, hence the word evolved the meanings "large," "single," "separated." The term te-qing also implies that the qing is large and suspended singly. In my opinion, this name fits the song-qing particularly because the song-qing was suspended singly on the west side of the court, and was large.

The term bian-qing refers to a set of qing of sequential sizes and pitches, a melodic instrument. No bian-qing have ever been found at pre-Shang sites. The two qing recovered from pre-Shang sites were found singly, and are classified as te-qing. However, there is no way to tell if they had ever been used in a set.

Making a qing was difficult. It is natural that people would treasure it and use it for a long time. Moreover, large instruments might have been a status symbol, and keeping old instruments might have shown respect for the ancestors. It is highly probable that the ages of the qing depicted in this work are older than the suggested dates, which are the dates of the site or stratum from which the qing were recovered.

A. Te-qing

1. During the 1974-1976 excavation at Dong Xia Feng, Xia Xian, Shan Xi Province (山西省夏縣東下馮), one qing was unearthed (KG 1980.2:97-107). It seems to be chipped from a large piece of stone and was not polished, making it look quite primitive. Yet its tone was reported to be "clear and pleasant." The fact that bronzes were found in association with it shows that the people who owned this qing already enjoyed a high culture. Coincidentally, this qing looks like the triangular stone ploughshare depicted above (Figure 7).



Figure 10 -- Stone qing unearthed at Dong Xia Feng, Xia Xian, Shan Xi Province. 21st-16th century B.C. Length: 60 cm.

(From KG 1980.2:pl.1)

2. In 1975 a qing was unearthed at Er Li Tou, Yan Shi, He Nan Province (河南省偃師二里頭), together with many bronzes and jade objects. It came from the stratum classified as the third period of this site, corresponding to the 17th-16th century B.C. (KG 1976.4: 263). Only a small, unclear photo of this qing was published, and it shows no sign of fine-polishing or decoration. Exact dimensions were not given.



Figure 11 -- Stone qing from Er Li Tou, Yan Shi, He Han Province, 1975. 17th-16th century B.C. Length: about 60 cm. (?)

(From KG 1976.4:263)

It should be noted that the "roughness" of these qing, as well as of the other Shang ones to be depicted later, should not be taken as an indication that the culture at the time was "primitive." Actually, the other objects unearthed at the same sites show that the culture was quite advanced and that the people had already invented writing. One reason the instruments bear no fine decoration was perhaps the people treated them only as percussion instruments rather than as art objects. The possible relationship between the instruments and the stone ploughshares might be a reason for their shape and "rough" look. In fact, what appears as a "rough" finish to us may have been considered admirable by the ancient people. Moreover, it is possible that there are more richly decorated qing from that period yet to be found.

III. SHANG QING

Several dozen Shang qing have been unearthed in this century. However, only those of special significance and in good condition will be depicted. Broken ones will be mentioned only when necessary. Chronological order will be kept in this description whenever possible.⁵ Shang qing will be depicted under the classification of te-qing (特磬 "single qing") and bian-qing (編磬 "a set of qing," "arranged qing") respectively. Pitch data will be provided whenever available, but it must be noted that the accuracy of some pitch tests has been recently questioned (see Chapter Five, section III). Serious study of Shang scales may have to wait until more reliable information is available.

A. Te-qing

1. The earliest Shang qing yet found may be the one recovered at Hui Zhen Fang, Lan Tian, Shaan Xi Province (陝西省藍田懷真坊) in 1973 (WWZL 1980.3:26). The report says:

The qing is made of greenish limestone. Near the upper edge there is a suspension hole drilled from both sides. Its surfaces are rough and not polished. It seems to be half finished.

It goes on to suggest that the instrument could have belonged to some Shang kings or nobles, because it was too big to be used by the common people.

*It seems that the photo does not show the whole length of the qing.



Figure 12 -- Stone qing found at Hui Zhen Fang, Lan Tian, Shaan Xi Province, 1973. Early Shang, ca. 16th century B.C. 71 x 28 x 6-10 cm. * Weight: 20 kilos.

(From WWZL 1980.3:27)

I agree that this qing might have belonged to some Shang nobles, not only because it is large, but because it was unearthed with important bronzes. Bronzes were rare, especially in the early Shang period, and were used by the upper class only. Also, it is difficult to be sure that this qing is half finished, because most early qing, and even some of the late Shang ones, have rough and unpolished surfaces.

2. Between June 1973 and December 1974, thousands of bronze, jade, stone and clay objects were unearthed at Tai Xi Cun, Gao Cheng, He Bei Province (河北省藁城台西村). Two qing were also found, one from a house site and one from a tomb (WW 1979.6:37 and 40). A photo of the one unearthed in 1973 has been published:

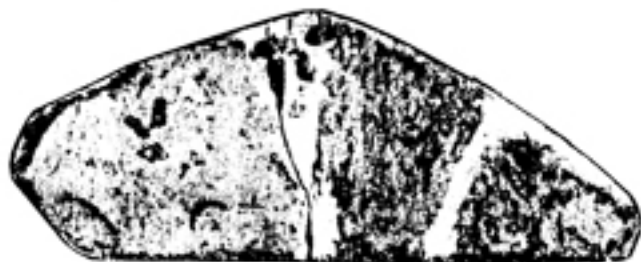


Figure 13 -- Stone qing found at Tai Xi Cun, Gao Cheng, He Bei Province, 1973. Ca. 13th century B.C. or earlier. 55.5 x 22 cm.

(From KG 1973.5:267)

From the photo it can be seen that the qing was polished and seems to have two holes. Perhaps the first one drilled proved unsuitable. The date of the qing is based on the date of the bronzes unearthed with it (Ma 1980:11).

3. One qing made of fine limestone, together with a large wooden drum and fragments of their wooden stands, was found in Large Tomb No. 1217 during the twelfth official excavation at Xi BeiGang (西北岡) in 1935. The report says that it is dark grey in color, and chipped from a large piece of stone. The sides still show signs of chipping by stone tools, and signs of polishing. The upper side of the suspension hole is worn, indicating that it had been hung for a long time. Its tone is beautiful and sounds like metal (Gao 1968:31).



Figure 14 -- A stone qing found in Large Tomb No. 1217 at Xi Bei Gang, 1935. Collection of Academia Sinica, Taipei. Ca. 13th century B.C. Longest diagonal length: 62 cm. Thickest section: 4.2 cm.

(From Chuang 1968b:diag. 11)

4. In 1976, the royal tomb of Lady Hao at Xiao Tun was excavated. Among the other treasures found are two te-qing, a set of bian-qing, a set of bells, and three ocarinas. One te-qing with an inscription is described as follows:

This is greenish grey in color and made of carbonate rock (碳酸鹽岩). . . . The top and bottom were polished and thinner. There is a round hole near the top, with a diameter of 1.8 cm. The upper side of the hole is worn, due to long-term suspension. The qing was

polished, but one side is partially disintegrated. On one side near the top are cut four graphs: "Ren Zhu offered stone." Ren Zhu might be the name of a tribe or a person. "Offer" means to bring tribute. . . . The inscription probably meant that it was a tributary stone from Ren Zhu.

(Tomb of Lady Hao 1980:198-199)



Figure 15 -- Photo of one of the two stone qing (and detail showing four inscriptions) from the tomb of Lady Hao, at Xiao Tun, 1976. 12th century B.C. or earlier. 44 x 8.5-12 x 2.4-3.2 cm.

(From Tomb of Lady Hao 1980:pl.170.1 & 2)

I think the fourth graph should directly be read as "qing." In pictographs the qing is represented by a triangular shape, as seen in the graphs 𠄎, 𠄏 and 𠄐 (see section I.C and V for interpretations). The inscription then means "Ren Zhu offered this qing."

Many OBI of the period of the 22nd king, Wu King (武丁), mention a Lady Hao (妇好 = 婦女子 :fu hao. Shima :139-140), generally believed to be a consort of Wu King. Many bronzes found in this tomb bear the name Lady Hao, who is believed to be that same person.⁶ Some OBI record that Lady Hao led an army to fight with the king's enemy (Shima :141). It is not surprising, therefore, to find her tomb full of treasures.

5. The other small qing found in the tomb of Lady Hao is also of rectangular shape. The report says:

This is black in color and made of carbonic limestone (石灰岩含碳質). It is flat and rectangular, with a curved top, and a straight bottom. Close to the top, and near one side, there is a round suspension hole with a diameter of 1 cm. On both sides there is cut the figure of a standing barn-owl (鴞 鴞), with hooked beak and big eye, short crest, short wing, long coiling tail, and five powerful claws.

(Tomb of Lady Hao 1980:199)

The incising of the image on this qing is--like images on other qing of this period--mature, fluent and exquisite. Unfortunately the report does not include information on the pitches of the instruments found in this tomb. These two qing are the only known examples of this type of rectangular shape. I believe their shapes have something to do with stone tools and decoration. Qing no. 4 resembles a stone axe. Qing No. 5 is rectangular perhaps because the artist wanted to show a standing bird.



Figure 16 -- Rubbing of one side of a stone qing from the tomb of Lady Hao, at Xiao Tun, 1976. 12th century or earlier. 25.6 x 6.7-8 x 1-1.6 cm.

(From Tomb of Lady Hao 1980:
diagram 99)

6. In 1950, a large tomb of the late Shang period was excavated at Wu Guan Cun (武官村), to the north of Xiao Tun. Among other things found there was a beautiful large qing said to be made of marble. The report says:

It is made of a piece of white and greenish stone. . . . On the front is cut the image of a tiger, with its mouth open as if about to swallow. The cutting is powerful and yet gentle, making it look strong and beautiful. The back is flat and smooth, but there are several places painted red and slightly cut, the decoration seems to be unfinished. When hung up, its upper edge forms a 31° angle with the perpendicular. When hit softly, the tone is musical and clear, as if from a piece of bronze.

(KGXB 1951.5:25)

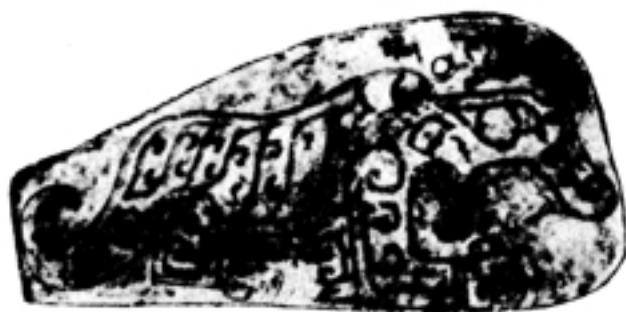


Figure 17 -- Large greenish white marble qing from a late Shang tomb at Wu Guan Cun, north of Xiao Tun, 1950. Ca. 12th century B.C. or earlier. 84 x 42 x 2.5 cm. Frequency: 280.7 cps.

(From Yang 1980:diag. 7)

The upper side of the suspension hole is worn and enlarged, probably due to long-term suspension.

The "tiger" was the most popular decorative motif on Shang objects. Two more qing decorated with tigers found in Large Tomb No. 1001 have been omitted because they are fragmentary (Gao 1962:pl. 92.1-2). One found by a river bank in 1973 will be depicted below (Figure 21), however, because it shows a different shape. Other qing of similar "whale-head" shape, but broken, also will not be discussed.

7. A nearly triangular qing made of limestone, with greyish green patches was found in Large Tomb No. 1004 at Xi Bei Gang, during the 10th-11th official excavation in 1934-1935. The sides are very well polished. The upper side of the suspension hole is worn, again showing that it had been hung for a long time. Its sound is said to be "very pleasant" (Gao 1970:47).



Figure 18 -- A qing found in Large Tomb No. 1004 at Xi Bei Gang during 1934-1935. Collection of Academia Sinica, Taipei. Ca. 12th century B.C. 81.4 x 40.4 x 4.6 cm.

(From Chuang 1968b:diag. 12)

It should be noted that this qing was once wrongly described as being made of "dark green jade" (墨綠玉 Chuang 1968b:9).

8. One fish qing of undocumented provenance is included in a book illustrating objects excavated at Xiao Tun (Huang 1937, vol. 2:34). Fortunately two fragments of a qing found in Large Tomb No. 1004 at Xi Bei Gang, and which date to c. 12th century B.C., bear similar fish-scale designs (Gao 1970:pl. 41.3); thus this qing may perhaps be dated similarly:



Figure 19 -- Stone fish qing perhaps found at Xiao Tun. Ca. 12th century B.C.

(From Huang 1937, vol. 2:34)

9. One white stone qing shaped like a leaf was unearthed in a late Shang tomb in 1976, at Jing Jie Cun, Ling Shi, Shan Xi Province (山西省靈石縣旌介村), together with sixteen bronzes. It is polished, and gives a beautiful tone with a frequency of 91+ cps (WWZL 1980.3: 46-49).



Figure 20 -- White stone qing from a late Shang tomb at Jing Jie Cun, Ling Shi Xian, Shan Xi Province, 1976.
12th-11th century B.C.
38 x 18 x 2.5 cm.

(From WWZL 1980.3:49)

10. In 1973 another qing decorated with a tiger motif was discovered by the river bank at Xiao Tun. The report says:

It is made of grey stone, and has a tiger cut in each side. The upper edge of the suspension hole is worn on both sides. Judging from this, and from the wear on the side caused by performing, this instrument had been used for a long time.

(KG 1976.1:61 and 16)



Figure 21 -- Rubbing of a stone qing with a tiger motif, found at the river bank at Xiao Tun, 1973. Ca. 13th-11th century. 88 x 28 x 4.2-4.6 cm.

(From KG 1976.1:16)

In this sample we see the freedom in choices of shape when the Shang people made qing. Perhaps limited by the size and shape of the piece of stone, they made the tail of the tiger in the form of a fish tail.

11. Between 1969 and 1977, 939 small graves mainly of common people were excavated at a Shang graveyard west of Xiao Tun. In one grave a set of five qing was found (to be described later -- B.2). In another a large qing was found; the report says:

It is thin and flat, rectangular in shape with curved edges on both ends, and there are signs of chipping on the four edges. It has one hole, and is made of grey sandstone.

(KGXB 1979.1:103-104)

"Sandstone" is an obscure word. It might mean limestone, or more precisely, calcareous sandstone, a sedimentary rock which Chuang Pen-li judged to be most suitable for making qing (Chuang 1968a:50).



Figure 22 -- Grey stone qing from a late Shang grave at Xiao Tun.
Ca. 11th century B.C.
76 x 34 x 0.8 cm.

(From KGXB 1979.1:103, and pl. 15)

12. One broken qing found in Large Tomb No. 1003 during the 10th and 11th official excavations in 1934-1935 at Xi Bei Gang is worth mentioning, because of its shape. The four fragments on the right were found in another Large Tomb (No. 1002). Probably clandestine excavators moved the qing around and used it to knock open other objects. This qing is made of fine greyish limestone (灰色細質石灰岩). The sides were originally well polished and decorated, but have partially disintegrated, creating many small holes.

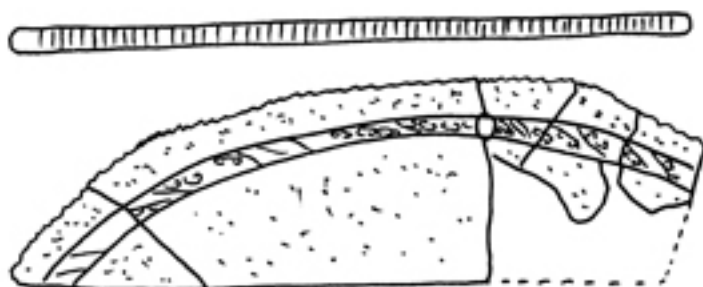


Figure 23 -- Drawing of a broken qing found in Large Tomb No. 1003 at Xi Bei Gang, 1934-1935. Collection of Academia Sinica, Taipei. Ca. 11th century B.C.
85 x 24.5 x 2.9 cm.

(Based on Gao 1967:pl. 24.2)

The upper edge of this qing (and also of No. 17, Figure 28) is decorated with denticulation. In my opinion, this design might perhaps be the prototype of the dentated strip built on the back of the Zhou instrument yu (敔). For further discussion, see Chapter Seven, IV.B.

In the beginning of this century Luo Zhen-yu (羅振玉), noted antique collector and scholar in Beijing, acquired three stone qing and three fragments from Xiao Tun. There were probably privately recovered by the local villagers, and there is no excavation information to date them accurately.⁸ Five of them are included here because they provide interesting shapes (nos. 13-16), and because one was said to be made of jade (no. 17).

13. This stone qing with a suspension hole at the center is similar to the large one in the set recovered in the tomb of Lady Hao (see below; III.B.3).

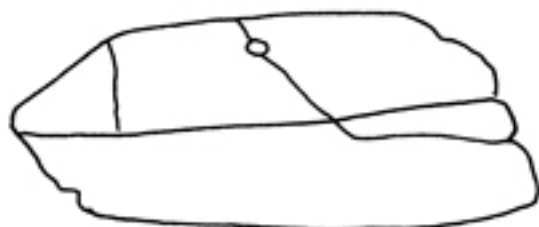


Figure 24 -- Stone qing in the collection of Luo Zhen-yu.
Ca. 13-11th century B.C.
80.5 x 40 cm.


(Based on photo in Luo 1916b:9)

14. This stone qing with the suspension hole on the larger end is comparable in shape to the famous tiger qing found in the Large Tomb at Wu Guan Cun, depicted above (No. 6, Figure 17). The only difference is that this one is not decorated, and the lower right corner is not complete.



Figure 25 -- Stone qing in the collection of
Luo Zhen-yu.
Ca. 13-11th century B.C.
85.3 x 37 cm.

(Drawing based on photo in Luo
1916b:7)

15. This stone qing has a particularly high "head." The right edge (marked "r" in the picture) bends inward, making it look somewhat different from the other Shang qing. Perhaps this could be regarded as a prototype of the standardized Zhou shape: , to be discussed below (section IV.E).

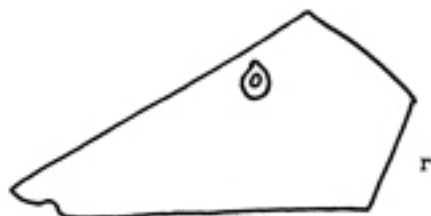



Figure 26 -- Stone qing in the collection of
Luo Zhen-yu.
Ca. 13-11th century B.C.
57.5 x 30.5 cm.

(Drawing based on Luo 1916b:8)

16. This stone qing is broken on the right end. Tang Lan (唐蘭, d. 1979), noted scholar, guessed that its original shape was a semicircle, , and that this type is perhaps the kind of qing called qiu (球 "jade qing") or xiao (簠 "large qing" that look like a ploughshare) because it resembles a ploughshare (Tang Lan 1933:94). This is hard to verify and may not be correct. This qing is not made of jade, and a normal ploughshare does not look like a semicircle.⁹

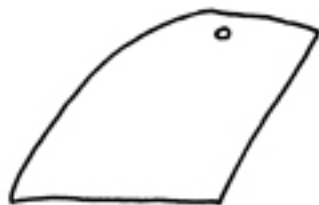


Figure 27 -- Broken qing in the collection of Luo Zhen-yu.
Ca. 13-11th century B.C.
70.5 x 40.5 cm.

(Drawing based on photo in Luo 1916b:10)

17. This broken jade (?) qing, decorated on both sides, is said to be made of jade.¹⁰ Its edge is also decorated with denticulation (see qing No. 12, Figure 23).

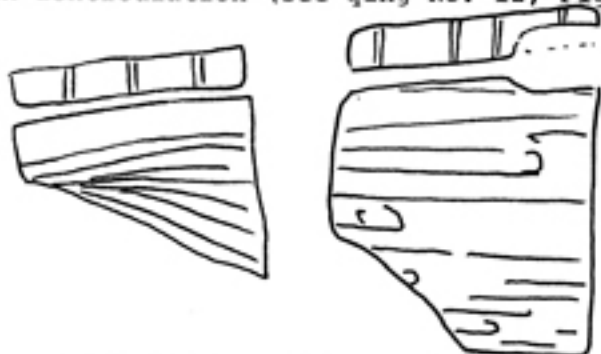


Figure 28 -- Broken jade (?) qing in the collection of Luo Zhen-yu.
Ca. 13-11th century B.C.

(Drawing based on Luo 1916b:6)

B. Bian-qing

As far as I know, there are three sets of stone bian-qing recovered from Shang sites dating to the second half of the Shang Dynasty. Some scholars mention the discovery of a set of three jade qing in Large Tomb No. 1004 at Xi Bei Gang in 1935 (Hu 1955a:81). This might be a misunderstanding. The official report on that tomb, eventually published in 1970, only depicts three stone qing, two of which are in fragments, and there is no evidence that they belong to a set (Gao 1970:47).

The Shang bian-qing currently known have three or five qing in a set. During the eight centuries of the Zhou Dynasty, sets of qing became progressively larger in number. Zhou bian-qing with 9, 10, 11, 12, 13, and 15 pieces have been unearthed (KG 1972.3:46-48). The largest set yet recovered is the set with 32 qing, found in the fifth century B.C. tomb of Marquis Yi of Zeng in Hu Bei Province in 1978 (WW 1979.7:5). Since the late Zhou period, 16 has been considered a standard number of qing in a set.

The known Shang bian-qing are depicted below.

1. A set of three stone qing was unearthed by the local villagers at Xiao Tun early this century, and sold to Yu Xing-wu, noted oracle bone scholar in Beijing. It was donated to the Palace Museum after 1949. According to Yu, this set was found with some bronzes. This implies that it belonged to some Shang nobles. There are two graphs inscribed on each qing, to the right of the suspension holes. It is not difficult to read the graphs, but their meaning is not certain because they do not seem to form a complete sentence, or to include any known tone names of ancient China, or to represent the names of the owners because it is unlikely that one set of instruments was owned by three persons.¹¹

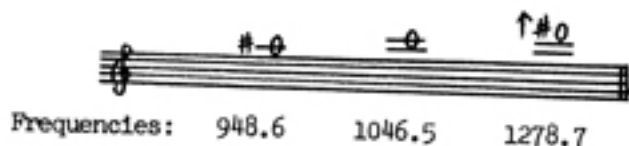


Figure 29 -- A set of three stone qing with inscriptions, unearthed at Xiao Tun. Ca. 13-11th century B.C.

(Pitch data from Yang 1980:24; photo from Hu 1955 :diag. 88)

2. During the major excavations undertaken between 1966 and 1977 at a late Shang graveyard west of Xiao Tun, 939 small graves were excavated. Only two graves were found to contain qing. One yielded the single qing depicted above (No. 11, Figure 22), and one produced a set of five. The report says:

The (five) qing are thin and flat, irregularly pentagonal in shape. There is one hole (one qing has two holes) on the edge of each. They are greyish white in colour, and on the surface there are paintings in white, which seem to be images of birds or animals.

(KGXB 1979.1:103-104)

According to the field report, the people buried there were mostly poor. Each had an average of less than ten humble daily household things buried with them, and no musical instruments have been found in their graves. The person

who had five qing had 93 bronzes among his 305 pieces of valuable things. The report suggests that he was a noble (KGXB 1979.1:118). This fact seems to indicate that the common people of Shang times did not own instruments.

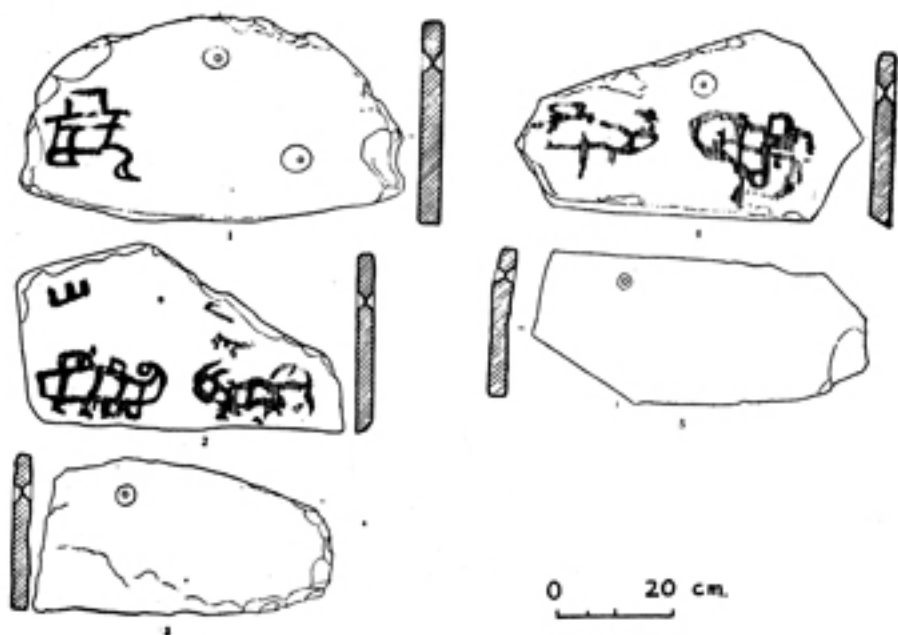


Figure 30 -- A set of five stone qing found in a late Shang grave at Xiao Tun. Ca. 11th century B.C. or earlier. Length: 50-66 cm.; thickness 3.2-4 cm.

(From KGXB 1979.1:103)

3. In 1976, a set of three white qing made of marl (泥質灰岩) was unearthed in the tomb of Lady Hao at Xiao Tun. The report says that the upper edges of the suspension holes are worn, due to long-term handling. One qing is in good condition; the other two are broken and disintegrated. Considering the fact that they are made of the same stone, and are found together in the same coffin, they might belong to one set (Tomb of Lady Hao 1980:199).

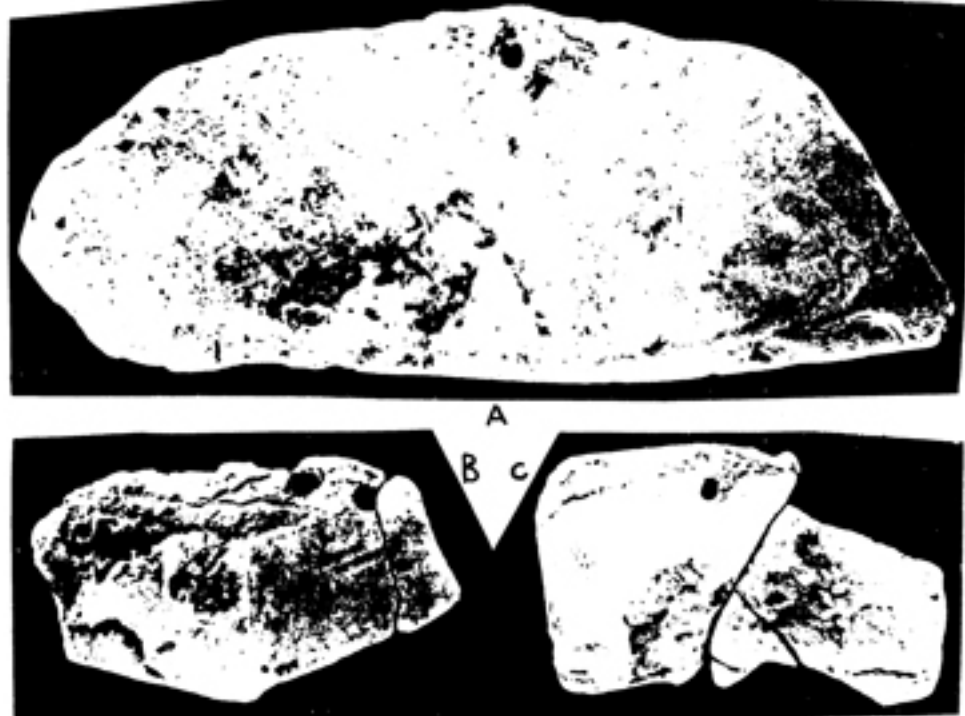


Figure 31 -- Photo of the three stone qing, perhaps of one set, found in the tomb of Lady Hao, at Xiao Tun, 1976. 12th century B.C. or earlier.

A: 97 x 42 x 4 cm.

B: 51.5 x 32 x 4 cm. (broken)

C: 47 x 30 x 4.2 cm. (broken)

(From Tomb of Lady Hao 1980:
Plate 171, diagrams 1-3)

IV. CONSTRUCTION

A. Materials

All except perhaps one of the qing depicted above (section III.A.17) are made of stone. The Zhou classics mention the use of jade qing (see next section), but none of the 156 Zhou qing recovered before 1972 and listed by the Hu Bei Museum is made of jade (KG 1972.3:46-48). The only notable Zhou jade qing I know of are the several pieces in the set of 32 qing found in the tomb of Marquis Yi of Zeng in 1978 (WW 1979.7:5).

Strictly speaking, jade is just one of many kinds of stone. However, the Chinese people used to consider jade and stone as different materials, a view based on cultural rather than scientific concepts. Because of their traditional love of jade, when they came across a stone which looked like jade, they would rather loosely call it jade. To clarify matters, a discussion of jade will be presented in the next section.

There are reported discoveries of wooden and earthenware Zhou qing, perhaps made for burial purposes. 12 Moreover, bronze qing were made in the sixth century A.D.

B. Jade

In Chinese the word "jade" (玉 :yu) refers loosely to a variety of semi-precious stone. Technically, there are only two types of stone which are considered "jade": jadeite and nephrite. Jadeite (翡翠 or 硬玉), found in Burma, is "a sodium-aluminum silicate belonging to the pyroxene group of minerals" (Chang 1980:156). This greenish stone was not introduced to China until the 17th century A.D. (Watt 1980:29). In archaeology and in Chinese books before that time, the word "jade" refers to nephrite, or "soft jade" (軟玉), "a calcium-magnesium silicate, a mineral of crypto-crystalline structure" (Chang 1980:156).

Ever since the pre-Shang period, jade had been considered an object which could facilitate communication between human beings and Nature (交通鬼神). Important vessels used in court and religious activities were often made of jade. In the tomb of Lady Hao alone, 590 jade objects were found in 1976 (KGXB 1977.2:74). When Zhou nobles made oaths, they threw precious jade objects into the river to show their seriousness, and to invite the spirit of the river to be a witness (Zuo Zhuan, 30th year of Duke Xiang). When they made covenants, two things were considered essential: blood and jade. They killed cattle and drank the blood before burying pieces of jade objects with the dead animals (Zuo Zhuan, 9th year of Duke Xiang). The covenants were sometimes written, with red mineral-ink, on pieces of jade which were then buried.

The Zhou classics prove that jade qing, especially old ones, were considered precious. After being defeated by the state of Jin (晉) in the year 589 B.C., the state of Qi (齊) offered a piece of land and two jade "national treasures" (國寶), including a qing, to seek peace (Zuo Zhuan, 2nd year of Duke Cheng). When there was a famine, the Duke of Lu (魯) sent his ancestral jade qing to the state of Qi in exchange for grain (Guo Yu, Juan 4, "History of Lu").

During the later part of the Zhou Dynasty, Confucianists attributed to jade the virtues appropriate to an upright scholar. The Li Ji suggests that an "upright person should imitate the virtues of jade," and that, except during a funeral, he should carry pieces of jade (Li Ji, section 13, "Yu Zao." 禮記玉藻: "君子無故玉不去身。君子於玉比德焉"). The Shuo Wen dictionary defines jade as "stone that is beautiful, and has five virtues" (Shuo Wen, Juan 1.1:19. "石之美者有五德"). One of the five virtues is "being musical" (Li Ji, section 48 "Ping Yi" 禮記聘義樂也). The Li Ji also records how people in the early times used the "sound of jade" (玉聲), which represents peace and innocence, to regulate their deeds and thoughts. "In the old days educated people always hung pieces of jade on their clothes. The pieces on their right are pitched to sol and mi, those on their left are pitched to do and la. (They walk according to music and rites, and) the jade pieces sound musically. . . . Thus wicked thoughts would not come to their minds" (Li Ji, section 13 "Yu Zao" 禮記玉藻: "古之君子必佩玉,右徵角,左宮羽。...然後玉鏗鳴也。...是以非僻之心無自入也。"). In classical and modern Chinese, letters or speeches from friends are courteously called "jade tone" (玉音).

It would be easy to explain why there are so few jade qing unearthed. Perhaps people seldom buried jade qing with the dead because jade qing were precious. Also, large pieces of jade suitable for making qing are rare. It is possible that some jade qing, especially those which became cracked, were carved into other smaller objects.

C. Stone

It is not possible to list all the kinds of stone that were used to make qing in the Shang period, because some archaeological reports did not employ scientific terminology in describing the material. The available information is shown in Table 1 below:

Table 1: Stone used for making qing

No.	Color	Rock	Remarks
Te-qing			
1	greenish	limestone	
3	dark grey	limestone	
4	greenish grey	carbonate rock	
5	black	carbonic limestone	
6	white, greenish	marble	marble is crystallized limestone
7	greyish green	limestone	
9	white		
10	grey		
11	grey	"sandstone"	means "calcareous sandstone" ? -- a limestone
12	greyish	limestone	partially disintegrated
Bian-qing			
2	greenish white, greyish white		
3	white	marl	disintegrated seriously

In Table 1, the majority of qing fall in the class of limestone, a sedimentary rock; this is also the case with Zhou qing (WW 1979.7:5; KGXB 1982.1:96; Chuang 1968a: 50). This fact may be related to one item about stone and qing in the Shang Shu, which, when listing famous products of different places, says: "The qing-stone appears by the bank of River Si" (Shang Shu, ch. "Yu Gong" 尚書禹貢: "泗濱浮磬."). This perhaps refers to a sedimentary rock as well.

Jade is ideal for qing in terms of sound, but it is rare and hard to work. Marble, a crystallized limestone, may be the second best choice, as far as higher density and smoothness is concerned. The two te-qing made of carbonic rock and carbonic limestone, both being hard rock of high density, and described as "close to jade" (WW 1978.7:77), are in good condition. On the other hand, two of the set of three qing made of marl are seriously disintegrated, showing that marl might not be as durable as limestone. The Chinese name for "marl" (泥質灰岩), meaning "greyish rock like earth," already shows that it is not a hard rock.

D. Shape

Shang qing show great variety in the choice of shapes. Some simply seem to be in the natural shape of the piece of stone, already suitable for various uses. This might be evidence that qing were related to stone tools, and that the Shang Dynasty was a period of transition and development. The Zhou people had a "standardized" triangular shape for their qing (see next section).

Owing to the fact that not too many Shang qing have yet been found, and that those found cannot be dated accurately, it is not possible to tell the exact chronological development of their shapes. As a matter of fact, even among the examples which are dated to the second half of the Shang Dynasty, more than one shape is seen. Perhaps the Shang people did not have as strong a desire as the Zhou people to "standardize" many things.

The shapes of the qing discussed so far are shown in Figure 32 to allow for comparison:

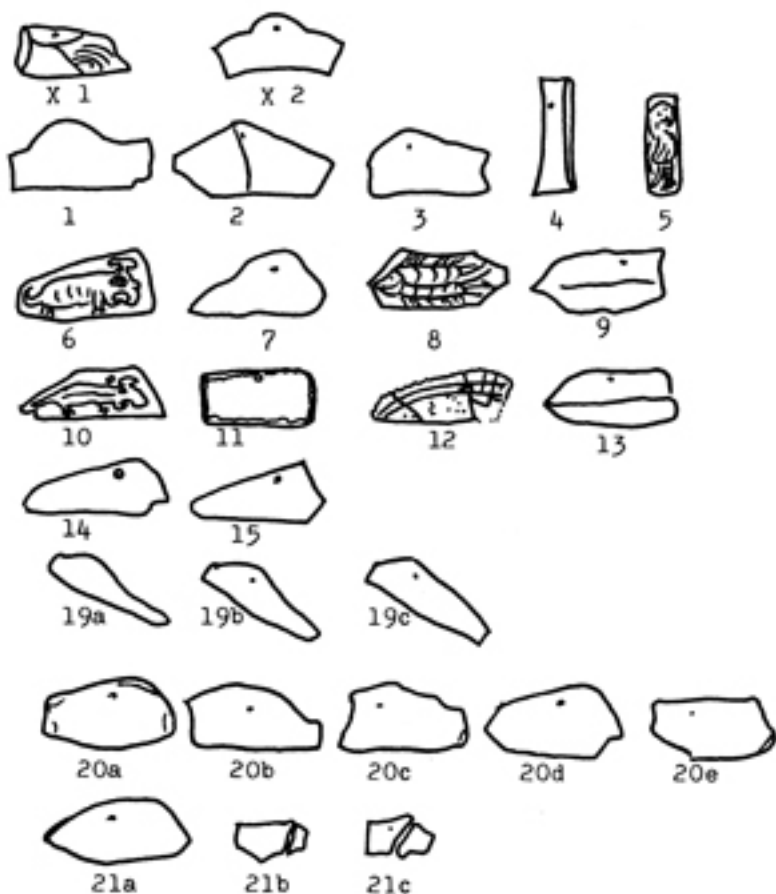


Figure 32 -- Different shapes of Shang and pre-Shang Qing

- | | |
|-------|-------------------------------|
| X1-X2 | Te-qing of pre-Shang times |
| 1-15 | Te-qing of the Shang period |
| 19-21 | Bian-qing of the Shang period |

As can be seen in Figure 32, the two characteristics of the standardized Zhou qing, the "triangular shape" and the "arched top and bottom edges," are already present in the two pre-Shang qing. Shang qing no. 4 and 5, with their vertical rectangular shapes, are unique. No. 4 seems to show a possible relation to the stone axe. No. 11 and the set of five recovered from the late Shang graveyard are perhaps not finished (in the sense of shape and decoration). They might have looked like the tiger qing or the fish qing had more work been done on them.

It seems that the "triangle" was the main shape in the development of these qing. Nos. X1, 2, 6, 7, 9, 10, 14, 15, and the set of three with inscriptions are particularly obvious. The others, though not too close to triangular, still show the different lengths of the two sides, which is a characteristic of qing triangles (e.g., Nos. 1, 12, and the set of five).

However, there is a major difference between the triangular qing of the Shang and those of the Zhou. The bottom edges of the Shang ones are straight or even convex, while those of the Zhou are concave. It should also be noted that in either case the differences in the measurements of the two sides are obvious, and that the holes are mostly drilled on the shorter side, opposite the most acute angle. The following diagram might, to a certain extent, show the possible development of qing from the pre-Shang period to the Zhou Dynasty (Figure 33).

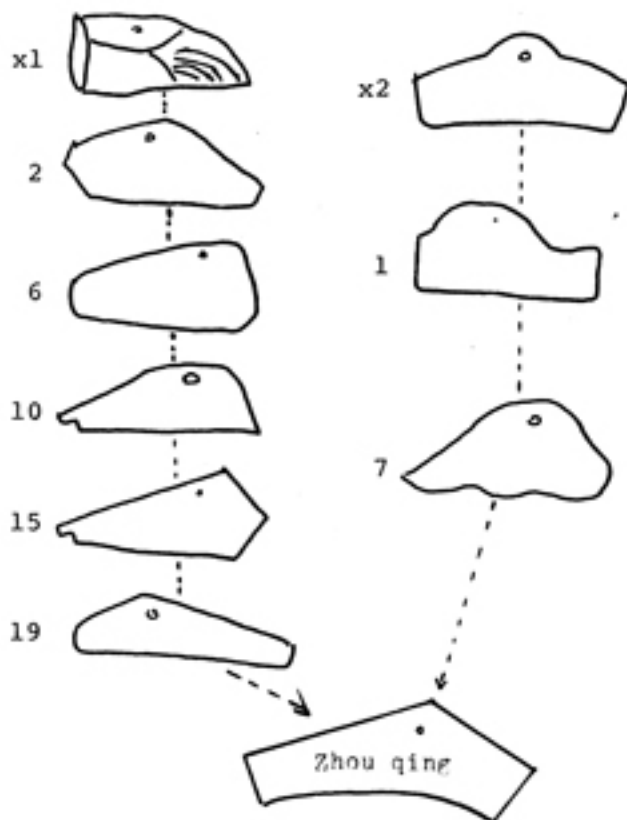


Figure 33 -- Diagram showing the possible development of the Zhou qing from earlier Qing

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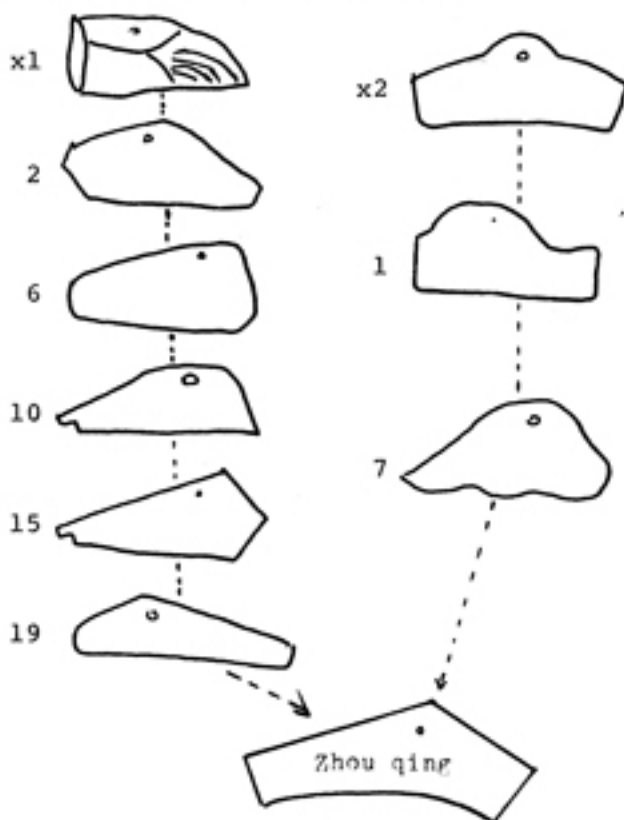


Figure 33 -- Diagram showing the possible development of the Zhou qing from earlier Qing

E. Standardized Shape and Measurements

We do not know at what point in the Zhou Dynasty a rather standardized shape and set of measurements of qing were employed, such as can be observed in all unearthed Zhou qing.¹³ However, this "standard" is recorded clearly in a late Zhou classic, the Zhou Li (chapter "Kao Gong Ji," meaning "Craftsmanship," which may have been written in the fifth century B.C.). What it says could be represented by the following diagram:

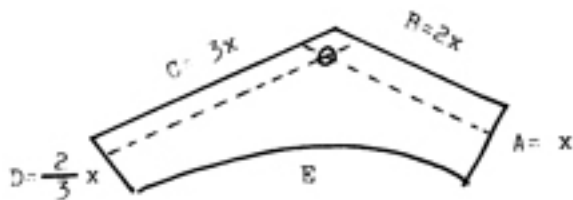


Figure 34 -- Standardized shape and measurements suggested in the chapter "Kao Gong Ji" of Zhou Li (周禮考工記).

In brief, if the length of edge A is x , then edge B will be $2x$, edge C will be $3x$ and edge D $2/3x$. Edge E should be curved concavely, and its length decided by the angle between edges B and C.¹⁴ The thickness is one-third of the length of edge D. Striking should be done on the small end (near side D), which is called 鼓 (:gu, "to strike"). The bigger end (near side B) is called 股 (:gu, "thigh").

The position of the suspension hole is not mentioned, but according to the observations of Chuang Pen-li, it should be at the intersection of two lines drawn parallel to edges B and C, each at a distance of one-third the length of edges A and D respectively. The reason for the whole design might be that when the qing is suspended, edge A will be close to perpendicular and D will be almost horizontal, taking up less room than if the whole long axis of the stone were horizontal (Chuang 1968a:35-37).

The Zhou Li also mentions the method of tuning the instrument by scraping the sides (when the pitch is too high) or scraping the edges at the two ends (when the pitch is too low). In this case the original measurements would be altered. At any rate, according to the scholars in the Hubei Museum in China, most Zhou qing were close to the above standard (KG 1972.3:41-48).

Judging from the above information, it seems that the dimensions are based on the ratio of three to one, the same ratio that the Zhou people used in deriving the steps in an octave, as mentioned in the Guan Zi (chapter "Di Yuan," information ca. 7th century B.C. 管子.地員).

The Shang qing seem to reflect a more direct relationship to stone tools. This, along with their wide variety of shapes and decoration, makes them seem like pieces of folk art. The Zhou qing, with their standardized shape and largely undecorated sides, appear more technically and less artistically inspired.

In both Shang and Zhou times, the qing in a set were constructed in different sizes, but with a basically uniform thickness. The smaller the instrument, the higher the pitch would be. Since probably the Han Dynasty, a change has taken place: the qing in a set have uniform sizes, and the differences in pitch are the result of differences in thickness. In this case, thicker qing have higher pitches. The set sent to Korea in the 12th century A.D. (which is still used in Seoul), and the set I saw at the Imperial Heavenly Altar (天土壇) in Beijing in 1980 are examples of this type.

F. Suspension

As can be seen in the graph Figure 35, Shang qing were suspended and struck with mallets. No Shang mallet has been recovered, but considering that some unearthed Zhou qing-mallets are wooden sticks with a knob on one end (KGXB 1982.1:97), Shang mallets may have been similar. The shape of the graph supports this idea. In 1935, in the twelfth official excavation at Xi Bei Gang, the remains of a large wooden drum and a stone qing in good condition, together with their decayed wooden stands, were found (Gao 1968:24-27). This is the only notable example of Shang instrument stands. Though similar stands were buried in Large Tomb No. 1001, they did not survive (Gao 1968:25).

According to the report, the drum and qing were removed from the stands, and the stands were also dismantled into separate pieces when buried. The wood had decayed, but the pieces of marble and shell inlay were still in position, so the shape of the horizontal beam, the poles and the "+" shape bases could be traced. The following picture roughly shows the shape of the parts of the qing stand as preserved in the earth (Figure 35); my drawing (Figure 36) suggests the possible original construction of the stand. The inlay on the beam included a tao-tie (animal face) at the center; the poles were also decorated.¹⁵ The poles are

only about 1.3 meters (4'3") tall, which means the instruments were about two feet above the ground when suspended. Probably the musicians were sitting or kneeling when they played on the qing, as the Shang and Zhou people were accustomed to the kneeling position.



Figure 35 -- Photo and drawing of the qing-stand in Large Tomb No. 1217 at Xi Bei Gang, 1935. Ca. 12th century B.C.

Beam: ca. 2.25 m. long, 33 cm. tall, 25 cm. thick.

Pole: ca. 1.3 m. long.

Base (+ shape): ca. 70 cm. long, 18 cm. wide, 25 cm. thick.

(Photo: from Gao 1968:plate 13)

(Drawing: from Gao 1968:24)

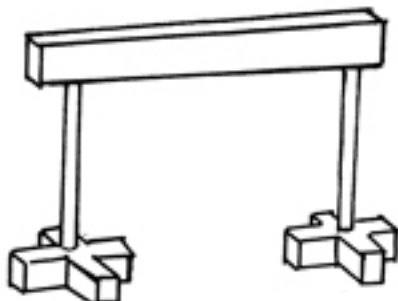


Figure 36 -- Tentative reconstruction of the wooden stand, based on measurements and the drawing of the remains in Large Tomb No. 1217.

(Based on information in Gao 1968:24-25)

It is uncertain whether the stand was really used for the one qing found near the stand, or if it was meant for a set of bells or qing which might have been in the tomb originally. The tomb had been clandestinely excavated in historical times, and there were no bronzes found at the time of the official excavation. The 2.25-meter beam can in fact accommodate more than one instrument. The following stone picture from a ca. 3rd century A.D. tomb is included here to show how bells and qing were suspended on low stands. Observe that the stands are also decorated (Figure 37):



Figure 37 -- Rubbing of a stone picture showing musical activities of the nobles. Four qing and two bells are suspended on low stands. (For a more complete picture, see Figure 50 in Chapter Four, V.C.)

Ca. 3rd century A.D.

(From Yang 1980:diag. 44)

Since there was a large wooden drum found with the qing and the stands in the above-mentioned Shang tomb, two representations on late Zhou bronze hu (甬 wine vessel similar to a bottle) are reproduced below to help us envision how musicians in the old days played sets of bells and qing together with panpipe, mouth-organ, and pole drum (Figures 38 and 39).



Figure 38 -- Decoration on a Zhou bronze wine vessel "hu." Collection of Si Chuan Provincial Museum, China. Ca. 5th century B.C.

(From Fang 1980:317)



Figure 39 -- Decoration on a Zhou bronze wine vessel. Collection of Palace Museum, Beijing. Ca. 5th century B.C.

(From Yang 1980:diag. 25)

In this picture the bells and the qing are suspended on a long beam supported by two birds (?). The existence of similar stands has recently been verified. The set of 32 qing found in the tomb of Marquis Yi of Zeng is also suspended on a bronze stand with two "long-necked strange beasts" (長頸怪獸).



Figure 40 -- A set of 32 qing and the bronze stand found in the tomb of Marquis Yi of Zeng in 1978 at Sui Xian, Hu Bei Province. Ca. 433 B.C.


Length of stand: 2.15 m.
Height of stand: 1.09 m.











(From Sui Xian Zeng Hou Yi Mu 1980:diag. 23)

V. USE




The Zhou classics do not give any detailed descriptions concerning how the qing and other instruments were played in Shang times. The poem Nuo (那 "numerous"), which was probably written by the descendants of the Shang people in the small state of Song (宋), and which mentions several instruments used in a sacrifice held for the first Shang king, Tang (湯), might be the only notable source. On that occasion, people played the qing, guan (管 double pipe) and the tao-drum (鞀鼓 -- this term usually refers to the clapper drum, but in this poem it refers to the pole drum; see Chapter Four, V.B) to accompany the wan (萬) group dance (Shi Jing, section "Shang Songs," Poem No. 301). This poem, though written in Zhou times, may be considered a reliable record of Shang performance practice, because it does not mention any later instruments that the Shang people did not have; and everything it does mention, including the wan-dance, is found in OBI (see Chapter Eight, section III, IV).

In the beginning, possibly, the qing was used only as a signal instrument. When it was first used as a musical instrument, the single qing might have been used merely as a percussive instrument. By the time of the Shang Dynasty, it is clear that the qing was already a melodic instrument because it could be used in sets of three and five pieces, each with a different pitch. The statement in the Guo Yu analyzing the musical functions of different instruments according to the material they were made of is interesting. It says: "Bronze (=bells) and stone (=qing) energize the melody, string (=zithers) and bamboo (=winds) keep the direction" (Guo Yu, Juan 3, History of Zhou. "國語周語:"金石以動,絲竹以行").

As for evidence in OBI, unfortunately there is no case where the graph  is clearly referring to the qing. Shima listed about twenty OBI in which this graph occurs (Shima :314), but it seems to be a place name.

It is hard to be convinced that this instrument, which was so popular in the Shang period, is not reflected at all in the OBI. In my opinion, the pictograph for a natural piece of stone would look like "". If this belief is reasonable, then the graph  which has long been interpreted as "stone" (石) should be reconsidered. My research shows that the graph  in fact might mean the qing. In this chapter (section I.C), I have pointed out that the graph  (長 :zhen) shows a person playing the qing. Also in this chapter (section III.A.4), I have explained that the graph  inscribed on a qing found in the tomb of Lady Hao, should be read as "qing." If this is correct, then several OBI containing this "" and which were not understood before might now be interpreted:  (or ) ,  , and .

A.  or 

In my opinion, this graph  (also written ) perhaps means "to play the qing." The radical "ancestral tablet" ( = 示 :shi) is added to indicate that this is a sacrifice. One OBI reads:

OBI 63 (Ku 106)

				
				
Divine: (Should we.)	play the qing (for)	(ancestor) Da-jia	during	(sacrifice with) meat?

Other OBI containing this graph (Shima :312) could be translated similarly.

B. 𠄎 and 𠄎

The OBI containing the graph 𠄎 (a mouth and a qing), which might mean singing with the instrument, are unfortunately incomplete sentences (Shima :312). However, one OBI with the graph 𠄎 is very clear. This graph perhaps means singing songs with the qing in a building. The OBI reads:

OBI 64 (Qian 1.30.7)

𠄎	干	𠄎	𠄎	𠄎	𠄎	𠄎
保	于	母	辛	家	宕	酉
...	pray	at	(ancestor)	temple,	play qing	offer
			Mother Xin's	(should	and sing,	wine?
			we)	(and)		

Coincidentally, the word meaning "melodic" in classical Chinese is 宕 (:dang). It is possible that it is the modern word of the graph 𠄎.

VI. CONCLUSION

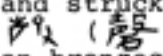
In this chapter, seventeen te-qing (特磬 "single qing") and three sets of bian-qing (编磬 "arranged qing"), representing the majority of known Shang qing, are depicted. The qing may have developed from stone ploughshares. This opinion is supported by the similarity in their shapes, and also by my interpretation of the graph 𠄎 (chen). My discovery that the graph "𠄎" is the pictograph of a qing sheds new light on research concerning the graph 𠄎. In my opinion, this graph shows a person holding up both hands to strike a triangular object, which I suggested might be an unused stone ploughshare or a qing. The original purpose of hitting this object may have been to signify time or approaching danger, or to give signals; later it could have developed into a musical stone. This interpretation explains why the word 辰 means "suitable time" and "time" in the classics, and why its evolved meanings include "stars" and "day." With the radical "hand" (扌) added to the left (振), the word means "to strike," "to awaken," and "to save." Some words associated with farming also contain "辰" as a component: 晨 (:nong, "agriculture"), 𠄎 (:ru, "to weed"). These are clues that the triangular object in the graph represents a stone ploughshare originally, and became a musical instrument later.

The most exquisite qing unearthed came from the mid-Shang and late Shang periods. However, considering that a qing could be used for a long time, and that the upper side of their suspension holes is worn (probably due to long-term hanging), it is possible that some qing dated to the mid-Shang period might have been made earlier. Most qing were found in tombs and sites associated with Shang nobles. Those with undocumented provenance often show decorations similar to other bronze and jade objects belonging to the Shang ruling class. There is no evidence that the Shang common people had their own qing.

Of the qing depicted, only one (Figure 28) is said to be made of jade (nephrite); the others are mostly made of limestone.

The bian-qing found are all dated to the second half of the Shang Dynasty, but this need not mean that qing were not used in sets before that time. The number of qing in a set is either three or five, each with different size and pitch. It is hoped that when more pitch data of Shang qing are available, the scale systems of the Shang might become more clear to us.

The lengths of known Shang qing range from 25.6 cm. to 97 cm. The majority are between 60-80 cm. long, 2 to 4 cm. thick. Unlike the later Zhou qing, which show a "standardized" triangular shape, the Shang qing show a versatility in shape and decoration. Some of them reveal possible relationships with the shape of stone tools, and some still show the shape of a piece of natural stone. It seems, however, that the "triangle" was the main shape in the development of qing from the pre-Shang period to the Zhou Dynasty. The major difference between Shang and Zhou triangular qing is that the bottom edge of the Shang ones are straight or even convex, while those of the Zhou are concave. The tiger is the most popular motif of decoration on Shang qing; images of birds and fish are also seen.

Qing were suspended on a stand and struck with a mallet, as can be seen from the graph  (箠 (箠) :qing, "qing") and some ancient pictures cut on bronzes and stone. No qing mallets have been recovered. The remains of a wooden stand discovered in Large Tomb No. 1217 at Xi Bei Gang in 1935 is generally thought to be the stand for the qing found near it. In my opinion, that stand with a beam 2.25 meters long seems too large for one qing. In fact, the exact way qing were suspended in Shang times is still not known.

1. We know that is the normal form because it is most popular, and appears mainly in earlier oracle bones. The other transformed versions appear on oracle bones of the late Shang period. When used as a component of other graphs, this graph is usually carefully written as (Shima :164).
2. Interpretations of at least four scholars are listed in the OB dictionary. In 1931, Guo Mo-ruo observed that several words (農, 女, 耨, 耨) which contain this graph mean "to farm, to weed"; thus he suggested that the graphs show a stone knife or a shell knife with a handle (he ignored the earlier normal form and discussed only the later transformed versions -- OBD:4351-4355). Ye Yu-sen (1932) thought that the graph shows a person holding up both hands in order to push a stone on a cliff (OBD:4355). Qu Wan-li (1948) thought that the graph shows a person holding a stone knife (OBD:635). Li Xiao-ding (1965), also neglecting the early form, thought that the (later) graphs show a shell knife, and that the lower part depicts the mussel reaching out (OBD:4356).



The above interpretations are not reliable because they tried to determine the structure of the graph by tracing its evolved meanings instead of its original meaning. The opinions that the graph shows a shell knife are especially misleading, since the shape they mention belongs only to the latest transformations. Li's interpretation is very unlikely: when a shell is used as a knife, the shellfish is already removed.

3. In OBI the graph for "sun" (which also means "day") is (Sun :283). The graph for "star" is (星) or (Sun :293).
4. For the dates of the two pre-Shang sites that yielded qing, see note 4 in Chapter One.
5. In this work, some instruments recovered from the several large "royal" Shang tombs at Wu Guan Cun (武官村) and Xi Bei Gang (西北岡), both near Xiao Tun (小屯), will be depicted. The dates of the tombs and the division of the archaeological period of this site, traditionally called Yin Xu (殷墟 = Shang ruined city), follow those given by Zou Heng (Zou 1980:76-87).

6. Some scholars argue that the tomb might belong to a later Lady Hao of the late Shang period. In this case the date of the tomb would be a century later. However, the general consensus favors an earlier Lady Hao. For a discussion, see Chang 1980:90; KG 1977.5:341-350; also see WW 1977.11:32-37.
7. There is one broken "whale-head" shaped limestone qing in the collection of Kyoto University, Japan (Kuo 1933:115; Umehara Sueji 1964:pl.143.2).
8. The measurements of the qing given by Luo are in the ancient Jian-chu (建初) ruler of the Han Dynasty. I have converted them into centimeters on the basis of 1 Jian-chu foot = 23.5 cm. Two misprints in Luo's measurements have been corrected.
9. 球 (:qiu) used as the name of a jade qing is seen in the Shang Shu (ch. "Yi Zhi"). Originally the word Xiao simply meant any "big qing" (Er Ya, ch. "Instrument." 大磬謂之磬). It was Guo Pu (276-324 A.D.) who said in his commentary that it looks like a ploughshare (郭注: "磬形似犁鋤"), but Guo did not specify the shape of the ploughshare.
10. The qing fragment with similar decorations, perhaps belonging originally to the same instrument, is illustrated by Umehara Sueji (Umehara 1964:102).
11. The reading suggested by Chang Ren-xia seems reasonable (WW 1978.7:77):
- 永啟 = 咏啟 (:yong qi) "singing starts."
 大舒 = 大余 = 大舒 (:yao shu) "dancing leisurely."
 永舒 = 咏舒 (:yong shu) "singing leisurely."
12. Concerning earthenware, there was a discovery of 48 (four sets of twelve) qing of miniature size (shorter than four inches each) in a seventh century B.C. tomb (WWZL 1980.3:75). In tomb No. 2 at Chang Tai Guan, Xin Yang, He Nan Province (河南省信陽長台關), two sets of wooden qing (nine in each) were found (KGTX 1958.11:80; KG 1972.3:47).

As for bronze qing, some were made during the Liang Dynasty (502-557 A.D. 梁), according to the Tong Dian written by Du You (735-812 A.D. 杜佑; Tong Dian, 通典, Juan 141-147). Moreover, the Bo Gu Tu Lu (compiled 1107-1110 A.D.) has a drawing of four bronze "qing," said to be Zhou qing (Juan 26, pp. 7-10). It is difficult to judge on the basis of those drawings whether they were Shang or Zhou objects, or whether

they were qing at all. Tang Lan suggests that they might have been the prototype of the Yu (鬲), to be struck to mark the end of a piece of music (Tang Lan 1933:100). This is difficult to verify.

13. A set of two greenish stone qing unearthed in Tomb No. 24 at Xin Cun, Jun Xian, He Nan Province (河南省浚縣辛村) is already in the "standardized" shape (Jun Xian Xin Cun 1964:18, 24; KG 1972.3:46).
14. The original text concerning this angle is "倨句一矩有半." The explanation of this sentence is problematic and there are various interpretations by different scholars. The correct explanation might be, as Cheng Yao-tian (A.D. 1725-1814) suggested, "the top angle is one and a half right-angles." For a discussion, see Zheng Yong-yi 1965:6-10; Chuang Pen-li 1968a:25-32. However, the unearthed Zhou qing show that the top angle is always a bit larger than one and a half right-angles (135 degrees), typically 140 to 150 degrees (KG 1972.3:42, 46). Since the late Zhou times the lower edge of the qing has also become angular: .
15. "Tao-tie" (饕餮) is the most popular flat-surface pattern decorating bronzes (and other objects) from the mid-Shang through the first half of the Zhou Dynasty (there are earlier and later examples, however). It is a complicated lineation of the front-view of the head of an animal, sometimes believed to be the tiger. The fact that the Chinese word for this pattern involves the radical "tiger" (虎), and that "tao-tie" was also explained as "a gluttonous fierce beast" may be the clue to the origin of this name. The pattern includes the eyes, eyebrows and nose: . Some tao-tie decorations also include the teeth, and even ears and horns (when depicting a cow or goat). There may be many tao-tie decorations on each side of a vessel; they are often diffuse and difficult to decipher.