Volume 2, Chapter 5: The Earth Supports and Completes the Harmony

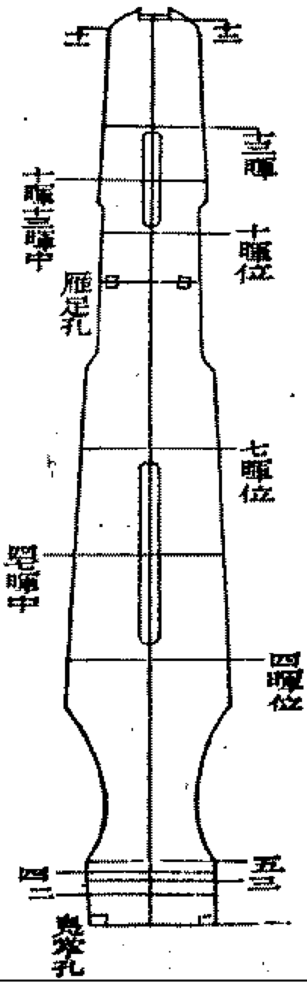

Figure 1: back of ch'in

The bottom of the ch'in is like the earth. The body faces upward and is supportive. The form is in accordance with that of the face. In front and in back there are the ch'ih[1] (池) (pool) and the chao[2] (沼) (pond). Under the han (頷) (chin), on the left and right are the two fu-chang (鳧掌) (lit., "wild duck" feet). Located at both sides of the middle of the waist there are the two yen-tsu(雁足) (lit., "wild geese" feet). Underneath the border of the ch'eng-lu and the bridge are seven chen (軫) (tuning pegs). The fu-chang contain (the pegs) and the feet make the ch'in steady. The pegs are tied on and can be turned. Under the nut is the t'o (託) (receptor), which is sunken into the tail portion and which receives and intercepts the han-hsuan (含絃) (lit "contains strings"). The pool and the pond on the outside are even with the bottom face and on the inside have around their circumference a rim, which serves to retain sound. Although the bottom may seem entirely even and straight, actually both the inner and outer shapes (of the bottom piece) together resemble a tile, which faces up. The regions of the head, tail, bridge, and nut are level and match up with the face board. Also the bottom on both sides, left and right, has a rim that is level everywhere and tallies up with the top.[3]

The method here involves taking a piece of 6/10's inch thick wood with the length and width of the top. *[(Six) is an old Yin number.]* Now according to the form of the body of the face, up and back, left and right, cut out the bottom. Also in the center, lengthwise, *[from the head to the tail in the middle.]* rule in an ink line to serve as the base line. *[Top and bottom both have a center line serving for a base line. One must rely on this for uniformity.]* Now we choose several of the sectional crosswise lines from the face and using a T-square, draw them in. To begin with, draw in crosswise lines, numbers two through five[4]; that is, the lines for the forehead, ch'eng-lu, bridge, and the beginning of the neck. Also draw in line number nine, which is the line for the center of the waist. Also draw in the eleventh and twelfth lines, which are for the cap and the end of the tail. *[Seven lines are thus selected.]* Now from the fourth line, *[at the inner bridge region]* following the base line, measure out nine inches. This marks then the fourth hui position. Again measure off nine inches to mark off the tenth hui position. Now measure off four and a half inches to mark the thirteenth hui position. In each case draw crosswise lines to note the

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[1]Also known as long-ch'ih, (龍池), "dragon pool".
[2] Also known as feng-zhao (鳳沼), "phoenix pond".
[3] Some areas on the inside are not hollowed out; for example., the bridge area. The rim on the outer circumference is also left intact in order to provide a surface for gluing top to bottom.
[4] See the previous chapter for more information.

position. Now in the middle between the fourth and seventh hui markers, *[at the fifth hui, sixth fen, second li, fifth hao (豪), or halfway to the tenth hui]* measure off four inches up and down. *[Altogether equal to eight inches, which stands for the eight winds.]* This is the length for the dragon pool. In the middle between the tenth and thirteenth hui positions, *[at the eleventh hui, third fen, fifth li position]* measure off two inches up and down. *[Altogether equal to four inches, which represent the four seasons.]* This is the length of the phoenix pool. Now from the base line measure off 4/10's of an inch for the width of the pool and of the pond. *[Altogether 8/10's of an inch to the left and right.]* At the center of the waist, away from the sides about 3-4/10's of an inch on both left and right, draw lines to make squares half an inch on a side for the holes for the wild geese feet. From the third crosswise line, *[this is the ch'eng-lu bridge border]* measure up and down 4/10's of an inch. *[Altogether equal to 8/10's of an inch.]* Now from the base line measure out on left and right two and 2/10's inches. *[Altogether four and 4/10's inches.]* These are the dimensions for the chen-ch'ih (軫池底)[5] (peg pool). At the head section, under the chin on both corners left and right, draw out one inch squares for the wild duck feet. The t'o is put at the extreme end of the tail. One must wait until the top and bottom have been put together, and the han-hsuan[6] on the tail made, with the base by the tail shrunken in, and only then make the t'o. *[The extreme end of the base is shorter than the top (board) by 2-3/10's of an inch.]*

When all the outside areas of the bottom have been measured, the demarcations clear, left and right on the sides, up and down, then from the inside rim measure out 35/100's of an inch.[7] Also rule in an even straight line which will be construed as (marking out) the raised form. One will plane down to this line and stop. This is the thickness for the side of the bottom board.

When the lines and sections for these inner and outer parts have been divided up, it is then appropriate to make the overturned tile form. This resembles a crescent moon, or a bow with the string drawn in towards the bow. This is because inside it is shallow and concave and outside it is slightly bulging. On the other hand, the outside shape looks level, upside down. It is not as obvious as the face, for it just bulges slightly up out of the plane face.

Moreover the outside has no influence on the sound, plus it does not bother the fingering, so one need not be so painstaking about it. So going out left and right from the base line, and starting from the center of the eleventh crosswise line, *[the cap position.]* the (inside) should gradually slope to the left and right rims with a ⊓ shape. Also from this position there should be down to the beginning of the neck, *[the fifth crosswise line.]* on both sides left and right, a 3-4/10's of an inch border, forming straight lines up and down (the ch'in lengthwise). Also at the square hole positions of the wild geese feet, around the three sides, *[the square hole has four sides, but discount the one next to the*

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[5] Or ch'en-chih-di (軫池底), "peg-pool back". See the glossary for more information.

[6] The han-hsuan is a term for the cutaway section in the tail end on bridging top and bottom that holds the strings. The nut is mounted above it. The t'o is mounted below it.

[7] He means the side. Mark a line on the side, 35/100's of an inch from the inner face and plane down to it to make the curved form.

rim, this leaves the front, back, and inner sides.] one should leave 3/10's of an inch in the shape of a half coin like . Also around the mouths of the pool and the pond; that is, the four sides, *[front, back, left, and right make up the four sides]* for each leave a 2/10's of an inch rim and mark it out. These (rims) are for retention of sound. Now starting from the  shaped eleventh crosswise line position and going down to the fifth crosswise line position, *[beginning of the nape]* everything can be chiseled out except for those areas that should be left; that is, the rims of the sides and of the pool and pond, plus the wild geese feet areas that are shaped like half-coins. Thus the inside will take on the hollow overturned tile form. So then on the left and right sides it is shallow, and it is deeper in the center. *[That is, the base line.]* Altogether one should take out 3/10's of an inch. If one should make it too deep, then the base will be too thin. In as much as the bottom board originally was 6/10's of an inch thick, then one should scoop out five to six tenths or so. 4-5/10's should be left. So then the bottom will still retain 25-26/100's of an inch in thickness, or (in other words) 3/10's is sufficient (to hollow out). When hollowing it out see that the body is made uniform; that is, without any overly thick or thin places. Also one must first clear up what places to leave alone by marking them out clearly. Although one will be unable to observe any of this from the outside, the work should still be done well.