

Heirloom Beads and Bronze Plates
of the Burmese Chin

Their links to the ancient Qiang people and Proto-Indo-Europeans originating in
Anatolia/The Levant spreading West and East via the cultures of Yarmukian, Vinca,
Cucuteni, LBK, Greece, Ur, Bactria, Hongshan, Daxi, Majiayao, Qijia, Shang, Zhou, Qin
and Han Dynasties

6000 BC to the present day

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PART 10

Drilling Techniques

The drilling technique used on the beads is ancient. This method has been used for at least four thousand seven hundred and fifty years and is well documented from Indus Valley and Egyptian studies.



Figure 1083

On examination it can be seen that the beads were drilled from both ends (figure 1083,1084). Due to the hardness of the material (Mohs 7.0) it would have taken many days to accomplish. On close-up inspection the stop-start process can be seen. The striations indicated a bow-drill method tipped with a harder material than the bead comprises, possibly emery or corundum.



Figure 1084. Marks from the drilling process can be clearly seen

Expedition

and vice versa. Our methodology provides confirmation about the missing drill (burr) from the drill hole (see barrel) where a match can be made between the pattern exhibited by the drill hole in the artifact and that produced experimentally on a similar raw material.

Findings

The findings for Group 1, Group 2, and the experimental duplicates can be described in terms of the following characteristics (Table 1).

1. the overall shape of the central drill (bore) hole and any holes drilled on the engraved surface (Figs. 6a, 6b, 8c);
2. the pattern on the side walls of the drill holes (Fig. 7a);
3. the pattern produced by the leading edge of the drill (Fig. 8). This was sometimes visible in the central bore, when the drilling was severely misaligned or incompletely drilled (Fig. 8b). It appeared on the engraved surface when the drill hole was part of the design and/or had not been obliterated by an engraving tool.

Both macroscopically and at the high magnification obtained with a scanning electron microscope, it was evident that a different pattern existed for the two seal groups (Fig. 9).

Table 1
Analysis of Drill Marks on the Seals

Shape of the Drill Hole

Group 1	(a) Central bore tapered and biconical in shape because all were drilled from each end (Fig. 5a). The degree of taper was severe, varying from 4:1 to 2:1. The degree of taper probably depends on the shape of the drill.
Group 2	(b) Engraved Surface: a similar degree of taper was found on most drill holes on the engraved surface (Fig. 5b).
Group 2	(c) Central Bore: all were tapered and biconical (drilled from either end). Degree of taper was very slight, and in some instances nearly parallel (Fig. 6a).
Group 2	(b) Engraved Surface: drillings generally very shallow and rounded (Fig. 6b).

Pattern on the Side Wall

Group 1	(a,b) Central Bore: most of the seals exhibited a series of concentric grooves on the side walls of all drill holes (Fig. 7a).
Group 2	(a) Central Bore: most of the seals exhibited concentric lines (Fig. 7b). In several instances these lines were interrupted by areas of smoothness.
Group 2	(b) Engraved Surface: varied from rough to smooth, some holes with concentric lines.

Pattern Produced by the Leading Edge of the Drill

Group 1	(a) Central Bore: no leading edge pattern observed, since there were no examples of misalignment.
Group 2	(a) Engraved Surface: pattern varied from angular to flattened to rounded (Figs. 8b and 8c).
Group 2	(a) Central Bore: roundness at the periphery and a central elevation in the stone observed on the only instance where misalignment occurred (Fig. 8b).
Group 2	(b) Engraved Surface: rounded, flattened or occasionally elevated (Fig. 8c).

6a Macrophotograph of a silicone impression of the central drill hole typical of Group 2 seals. Contrast the nearly parallel sides with the taper of Group 1 seals (Fig. 5a).

6b A scanning electron micrograph of drill holes from the engraved surface of Group 2 seals. Contrast the angular to rounded sides, in contrast to the taper shown for Group 1 seals (Fig. 5b).

7a A scanning electron micrograph shows the pattern of concentric grooves (arrows) found typically on the side walls of the holes in the Group 1 seals.

7b Micrograph of the side walls of a Group 2 seal, showing the characteristic concentric lines.

8a The leading edge of a drill hole shows a most revealing shape and clue to the type of drill used. This may vary from flat to somewhat rounded and occasionally angular. The scanning micrograph was made from drill holes on the engraved surface of a Group 1 seal.

8b Misaligned drillings from either end of the central bore of a Group 2 seal reveal a shape that is totally different from the patterns on Group 1 seals. Note the rounded periphery and central depression (arrow). On the seal itself, the depression is actually an elevation in the stone due to the localized wear of the drill.

8c Drill hole on the engraved surface of a Group 2 seal. The shape is similar to that in the central bore, but it most mimics the hole was either round or flat.

Group 1 seals generally had a strongly tapered biconical central bore hole with concentric grooves on the side walls of this hole. Group 2 seals, on the other hand, had only a slight biconical taper in their central bore hole, and concentric lines on the sides of this hole. Differences were also observed in the range of variation in the shape of drill marks on the outer engraved surface created by the leading edge of the drill. Verification that these differences were caused by the use of chipped stone drills in the manufacture of Group 1 seals, and copper/brass drills on Group 2 seals required the next step, experimental duplication.

Experimental Duplication

In order to exercise control, the following conditions prevailed

9 The three characteristics that demonstrate the difference between Group 1 and Group 2 seals are shown diagrammatically. They consist of (1) the shape of the drill hole (tapered walls versus nearly parallel walls); (2) pattern on the side walls (concentric grooves versus concentric lines); and (3) leading edge (flat or somewhat rounded versus perfectly round or somewhat flattened, occasionally with a central elevation).

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10a Tapered, grooved drill holes with a flat or rounded leading edge created experimentally on marble with a flint drill. Note their close resemblance to Group 1 seals (Figs. 5a,b, 9).

10b Holes made by a copper rod with an abrasive on marble. These do not match Group 1 seals.

11 The results of experimental drilling with the arrow-shaped copper drill. While the tapered shape is similar to that on Group 1 seals, there is no grooved pattern on the side walls (see Fig. 7a) nor any matching characteristics on the leading edge (see Fig. 8a).

12 There is a total mismatch with Group 1 when experimentally drilling with a copper ball drill and an abrasive on marble.

13 The rounded periphery and central depression (arrow) created with a copper rod and an abrasive on hematite is a perfect match to that found in the central bore and occasionally on the engraved surface of the Group 2 seals (Fig. 8b).

rather than fracture. Use of an abrasive did not result in any increase in the speed of drilling. The findings, therefore, provide strong evidence for the use of a flint drill in the manufacture of the Group 1 seals (Table 2).

A flat-bottomed, cylindrical copper rod without an abrasive would not drill. As the bit was rotated on a marble surface, it became slightly rough, and copper plated onto it. When abrasives such as sand, crushed quartz, or emery were used with water or oil, the pattern was completely different from that found in Group 1. The drill hole was nearly cylindrical, with roughened side walls and a slightly rounded leading edge (Fig. 10c). These results strongly suggest that a copper rod was not used to drill Group 1 seals.

An arrow-shaped copper drill was used with and without an abrasive. The bore hole was tapered and conical, but no concentric grooves were produced. The leading edge was slightly rounded. The absence of grooves suggests that such drills were not used to produce the Group 1 seals (Fig. 11).

A copper ball drill without an abrasive produced a pattern different in two respects from that found on the engraved surface of Group 1 seals: the walls of the drill hole were rough and not grooved, and the overall shape was round rather than angular (Fig. 12).

Hematite

We were unable to drill into hematite using a chipped flint drill. This was true whether or not an abrasive was used. A copper rod applied to hematite without an

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13 The rounded periphery and central depression (arrow) created with a copper rod and an abrasive on hematite is a perfect match to that found in the central bore and occasionally on the engraved surface of the Group 2 seals (Fig. 8b).

14 abrasive produced the same negative result. When an abrasive was used, however, the rod produced drill holes that were almost identical to those described for Group 2 seals: the drill hole had nearly parallel sides, and the walls exhibited concentric lines. The leading edge had a central elevation in the hematite (Fig. 13), a pattern not seen in marble.

An arrow-shaped copper drill without an abrasive was ineffective on hematite. Used with an abrasive, it produced a tapered conical shape and concentric lines. Since this tapered shape was not found on any of the Group 2 seals (all of which had nearly parallel sides), the arrow-shaped drill can be ruled out as having been used on hematite seals in antiquity. Contrary to what one might expect, this pointed tool (with an abrasive) also seemed to drill much more slowly than a copper rod (with an abrasive).

A copper ball would not drill without an abrasive. A copper ball drill with an abrasive produced a

Table 2
Experimental Drilling on Marble (M) and Hematite (H) Using Various Drills with Abrasives

Drill	Shape		Side Wall		Leading Edge	
	M	H	M	H	M	H
Flint	Tapered conical	Didn't drill	Concentric grooves	Didn't drill	Angular, flat, rounded	Didn't drill
Copper Rod	Nearly parallel	Nearly parallel	Rough	Concentric lines	Round	Round and/or central elevation
Copper Ball	Round	Round	Rough	Rough or concentric lines	Round	Round and/or central elevation
Copper Arrow	Tapered conical	Tapered conical	Rough	Concentric lines	Slightly round	Round and/or central elevation

The three characteristics of the central bores and engraved surfaces of Group 1 seals were duplicated only by the flint drill, as shown by the boxed sections on the table under the M headings. The three characteristics of the central bores and engraved surfaces of Group 2 seals were duplicated only by a copper rod and ball and an abrasive, also shown by boxed sections under the H headings. The remainder are mismatches.

Figure 1085(a)

To give us an indication of the techniques used to drill the bead holes, we referenced expert works such as shown above (figure 1085(a)): The Change from Stone Drills to Copper Drills in Mesopotamia by A. John Gwinnett and Leonard Gorelick ,

<https://www.penn.museum/documents/publications/expedition/pdfs/29-3/gwinnett.pdf>

The following images (figure 1085(b)) are taken from 'Stone Bead Technologies and Early Craft Specialization: Insights from Two Neolithic Sites in Eastern Jordan' by Katherine I. Wright et al. The images are from beads 6900–6400 BC and (e) appears very similar to the drilling techniques used on the round beads shown underneath the six images (figures 1086,1087).

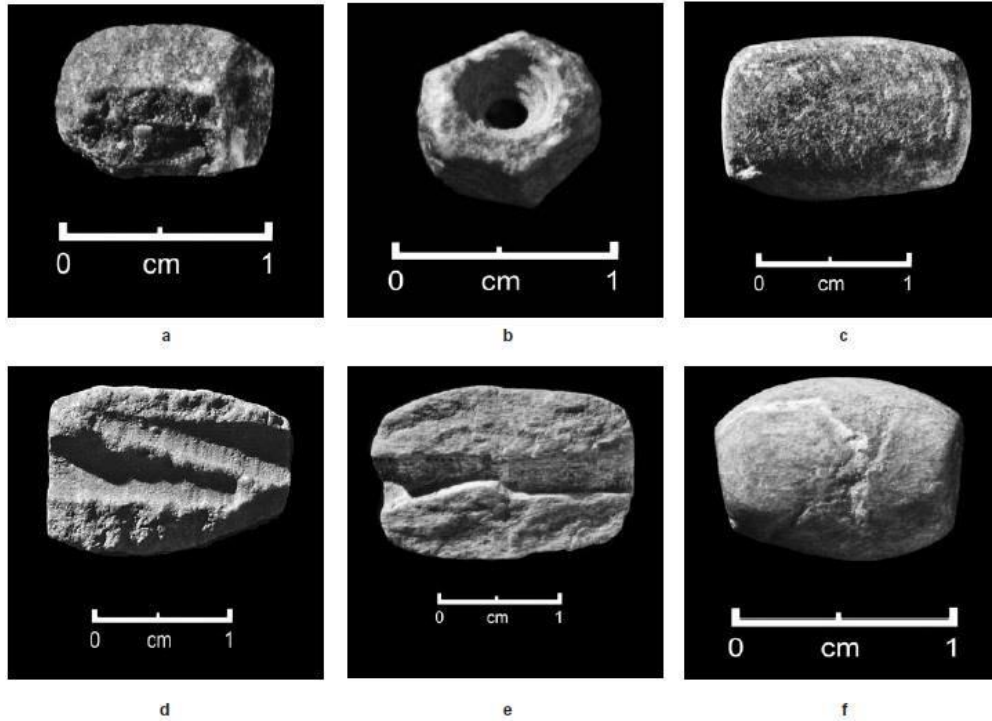


Figure 9 Green Dabba Marble barrel bead blanks and finished beads. (a) Hexagonal blank, flaked but not abraded; (b) Abraded hexagonal blank; (c) Abraded blank, not perforated; (d) Perforation error on abraded blank; (e) Finished bead, broken, showing bipolar perforation and hourglass perforation shape; (f) Perforated barrel bead, almost finished except for final abrasion to smooth out last surface irregularities

Figure 1085(b)



Figure 1086



Figure 1087

The images in figure 1085(b) from Katherine I. Wright et al. give an excellent visual representation of drilling methods. We also found the following passage from 'A Brief History of Drills and Drilling' by A. John Gwinnett, Leonard Gorelick, 1998 very informative:

The Chalcolithic Period further changes to drilling technology occurred during the Chalcolithic period approximately 4,000 B.C.E. and reached their zenith in the Bronze Age. A major innovation centers on the apparent realization that a chipped-stone drill was not an efficient carrier of abrasives. This led to the introduction of a flat rod of soft metal which allowed the abrasive to be temporarily embedded or charged. Copper was ideal for this purpose because it was not easily broken, could be reused and was soft enough to permit the embedding of an abrasive. Another important consideration was that the rods could be mass produced. We have been able to demonstrate and document the change from stone to copper drills (Gorelick and Gwinnett 1987). Archaeological excavations have not yet produced copper or bronze drills in a lapidary context. We have been able, however, to provide evidence for the use of copper drills. through several serendipitous findings.

The first occurred during an examination of quartz cylinder seals whose drill-hole impressions disclosed a peculiar anomaly on the sidewall (Fig. 10). We produced this same phenomenon, which we called a collar (Gorelick and Gwinnett 1989), quite accidentally while drilling on glass using a copper rod, quartz abrasive, and water (Fig. 11). We hypothesized that this occurred through plastic deformation of the copper rod's leading edge as a result of frictional heat and downward pressure on the rod. The ancient craftsman created the collars unwittingly during the course of drilling. If he added loose abrasive and lubricant in inadequate quantity, the drilling advanced slowly. Aware of this, he may have consequently applied greater pressure on the palm rest, thus distorting the drill. As he continued to add abrasive, the flare on the drill disappeared, but not before it produced a characteristic groove in the sidewall of the drill hole (Fig. 10). This phenomenon is unique to copper and the presence of a collar in the perforation of a bead is evidence of the use of a copper drill. While bronze, a mixture of copper and tin,

was used by craftsmen, it is speculated that it was rarely used in early metal-drill technology. The cost and scarcity of tin (Moorey 1982) would probably have precluded its use. Our unpublished experimental studies on drilling efficiency show no significant advantage of bronze over copper. An increase in drilling efficiency occurred in the Bronze Age, however, because of another important discovery, namely emery. With a Mohs' hardness of 9, this material afforded a major increase in abrasiveness and was particularly effective on quartz (Mohs' hardness of 7). We have been able to document its use during the Middle Bronze Age, ca. 2,000 B.C.E. (Gorelick and Gwinnett 1986), and suggest that the increased use of hardstones for beads, seals, and amulets stemmed from the awareness, availability, and use of emery as a loose abrasive.

A Brief History of Drills and Drilling by A. John Gwinnett, Leonard Gorelick

Two studies carried out by Margaret Sax et al. add weight to our theories; *Methods of Engraving Mesopotamian Cylinder Seals: Experimental Confirmation* (1998); and *The identification of carving techniques on Chinese jade* (2003). The second study, on Chinese jade, was to see whether methods used in the first study would prove effective with reference to leaving tool marks:

In an attempt to cover a wide chronological range, artefacts were selected for study from three broad periods in Chinese history: the Neolithic Hongshan and Liangzhu cultures (ca. 4000-2500 BC), the relatively recent Ming and Qing dynasties (14th-20th centuries AD) and an intermediate period, the Western and Eastern Zhou dynasties (11th - 3rd centuries BC). From each of the three periods, three artefacts, in reasonably sound states of preservation and dated on stylistic grounds by Rawson, were selected from the collections of the British Museum (see Table 1). Different styles of carving were chosen within each of the three periods in order to test our approach on as many different techniques as possible. The mineralogical identity of the artefacts was checked to establish that they are composed of nephrite jade rather than one of the many jade simulants, such as quartz, serpentine, pyrophyllite or steatite, frequently used in China and referred to collectively by the term 'Archaic jades' or 'gu yu'.

Authors' note: quartz mentioned as a jade simulant. One of the reasons why we believe that silicified wood, found in its natural state of giant petrified logs would have been a source of wonderment to the ancient Chinese (Qiang), and used for a very special purpose.

Of the nine objects originally selected, seven were shown to be nephrite by Raman microscopy. The identification of six of these artefacts was straightforward but that of one Neolithic pendant proved to be more difficult, and an axe head was unable to be identified by tests as nephrite. The axe head was excluded from the test.

Authors' comment: even though selected by one of the world's foremost experts, Jessica Rawson, from one of the world's great museums, one of the objects could not be identified by Raman microscopy.

The conclusions of the study were:

The present study has shown that the experimental protocol of an earlier study of quartz cylinder seals from the Near East, ca. 3000-400 BC, can be applied to investigate the techniques that were used to carve ancient Chinese jade.' and 'The eight nephrite artefacts examined in this study range in date from the Neolithic period to the Qing dynasty and optical microscopy showed that most retain traces of the original tool marks. The tool marks appear to have been produced mainly during the secondary stages of shaping and incising the objects; very few marks relating to the primary shaping were observed. The results of the initial examination showed one artefact, a heavily patinated pendant, to have suffered the loss of some ancient tool marks during weathering and to have been cleaned or restored, introducing new tool marks. These observations indicate a need for caution in interpreting tool marks on ancient jade artefacts, particularly those dating from the Neolithic period that are likely to have been most heavily patinated.

The first study had been carried out on quartz Mesopotamian cylinder seals. Quartz is very similar to the material used for the beads. Quote from: *Methods of Engraving Mesopotamian Cylinder Seals: Experimental Confirmation*, Sax et al (1998):

Spindle-tipped flint microdrills are widely distributed at third millennium BC sites from Mesopotamia to the Indus Valley and beyond (Unger-Hamilton et al. 1987 and references therein, 269-71). While there is evidence for the selection of a particular quality of flint for drilling quartz beads as early as the sixth millennium BC in Turkey (Calley and Grace 1988, 73), other varieties of quartz also appear to have been used as tools. Implements of flint, chert and rock crystal (as well as obsidian and slate) were excavated from Eridu, southern Mesopotamia, probably in a late fourth millennium BC context; they are illustrated by Hall (1919,33). A particularly tough and hard rock appears to have been used for perforating quartz beads at various sites in the Indus Valley from c. 2600 until 1900 BC.



Figure 1088



Figure 1089



Figure 1090

The three images shown in figures 1088-1090 are Mesopotamian quartz cylinder seals from the Metropolitan Museum of Art. Quartz and petrified wood have roughly the same hardness, Mohs 7. An abrasive, such as garnet or emery with a bow drill could have been used to drill holes on both cylinder seals and quartz/petrified wood beads. Diamond-tipped drills were in use in the Indus Valley at this time and would have been the ultimate tool.

Bead Decoration Techniques.

By comparing etched/engraved ceramic balls from the Daxi culture, 5000–3300 BC (figure 1091) we can see that this technique was practiced during Neolithic China. None of the Chin beads show signs of etching or engraving. We can compare these with modern day artisans making copies of the beads shown in figures 1093–1095.



Figure 1091. Daxi ceramic ball. http://www.gucn.com/Service_CurioStall_Show.asp?ID=10585700



Figure 1092. Daxi ceramic ball of a similar pattern to that shown in figure 1100.
http://www.gucn.com/service_curiostall_show.asp?id=2996840

From examination of our beads, we would tend to agree with E. H. Moore's comment in her 'Beads of Myanmar' study (ref methods of decorating the beads):

The third method involves the use of a resist material to paint lines on the bead. The bead is then baked and the surface blackened, except under lines painted with the resist. The black colour penetrates to a depth of one millimetre, although often the colouration is much shallower. The pattern of white lines is revealed when the resist is removed. This technique is similar to South Asian methods described as "etched".

In Myanmar and Thailand, due to Chinese demand, there is a thriving business making reproduction 'pumtek' beads. Note the new beads being worn by the lady in the image below (figure 1094). Deep black against pure white.



Figure 1093



Figure 1094



Figure 1095

Figures 1093-1095. Modern bead-making techniques in Myanmar
http://blog.sina.com.cn/s/blog_6cdc59fd0101g95e.html

Digging for petrified wood in Myanmar then fashioning into items for sale in China. The process is shown in the following images (figures 1096-1098).



Figure 1096



Figure 1097

Figures 1096,1097. Digging for petrified wood in Myanmar. <http://www.jsy70.com/html/news371.htm>



Figure 1098. Burmese petrified wood. From excavation to the finished article in Chinese shops. <http://www.jsy70.com/html/news371.htm>

We follow up the subject of digging for petrified wood in Myanmar. This interesting piece shows the extent of the practice and indicates which type of wood is excavated.

During January, 2007, an exploration by the author and a staff of Pakhangyi Archaeological Museum has made to record Megalithic site near Kyauk-htet Village in Yesagyo Township, Pakokku District. Kyauk-htet Village lies on the west 3 miles from Pakokku-Mandalay Road near the mile-post 9/1. Unfortunately it was known that that Megalithic site made up of fossilized wood (Ingyin-kyauk) had been destroyed by the hunters of wood-fossils when the illegal markets of such fossil-woods were taken place in Upper Myanmar during this decade. But two more items of archaeological interest was fortunately investigated in this area; Preliminary Report on the Discovery of Mesolithic Tools in Shinma-daung Area, Central Myanmar by Aomar, Association of Myanmar Archaeologists, May 6, 2009. <https://aomar.wordpress.com/category/uncategorized/>

We continue with comments from people in the pumtek bead business with the received wisdom that pumtek beads are made from fossilized palmwood. Although pumtek beads manufactured in Burma since the 1920s (and possibly earlier) may be made from petrified palmwood, this source of material had been disproved by us as the type used to manufacture our Chin beads which we consider to be very ancient. It may well be that there any twentieth century beads amongst the loose piles we have, but those on the necklaces would appear to be as originally stringed, showing great wear around the holes depending on their position on the necklace, i.e. greater hole wear on beads near the bottom where the string angle would make most impact over many generations.

Pumtek beads are composed from fossil palmwood, that is a variety of non-precious opal (unlike many fossil woods that have become agatized). It is correct to say they are “fossil wood,” “fossil palmwood,” opalized wood,” and “petrified wood.” The opalization of palmwood (or any wood) is a petrification (though it is different from agatization).

Global Beads Inc. <https://www.globalbeads.com/2011/03/14/pumtek/>

Here we reproduce a piece which seems to have set the scene for the general understanding of pumtek beads in the bead collecting community. It is quite lengthy but provides information which we feel needs to be printed in its entirety. It was published about a year after we procured our beads. Obviously, our findings disagree with the article which assumes the Pyu sold the beads to the Chin. Our investigations clearly point to Proto-Indo-Europeans journeying into China south of the Tarim Basin, becoming known as the Qiang, who in order to avoid the great turmoil at the time, moved en-masse into Burma c. 225 BC. An idea supported by eminent anthropologists/ archaeologists such as G.H. Luce. The types of petrified wood mentioned in the article seem to be exclusively palmwood species, especially dipterocarpoxyton. We have shown that this species is not one which provided the material for our beads. We have also previously quoted Jamey Allen as stating that a variety of species were probably used.

From: The Margaretologist (1992) 5(1):4 <http://www.thebeadsite.com/5.1.pdf>

The Pumtek Bead: What is its story?

Beads popularly called "Pumtek" (see cover) were imported to the U.S. from India in the mid-1980s. Indian dealers had acquired them from the Northeast, a mountainous region with a great variety of linguistic and ethnic groups. The stone beads have patterns similar to those on soda-etched carnelians, "dZi," and related beads. Their material was identified by the Center and later other institutions as a petrified wood, in which the wood was replaced by common opal. Allen [1986] compiled a few ethnographic works to show the cultural significance of the beads, especially among the Chin of Burma (Myanmar) and their relatives. Shortly afterwards, a second type of "Puntek" bead was available. Visually identical to earlier ones, they were not made of the same petrified wood. Again, they were bought from Indian dealers who acquired them from the Northeast, but they were much less expensive than the others and were 'acknowledged as imitations; there were rumors that they were still being made by one old man in Myanmar. Many questions are now been raised about Pumtek beads. What was their origin in time and space? How were they made and for what purpose? How did they come to

the Chin and their neighbors? What is the relationship between the two types?
Who made the imitations and why?

The Pumtek Bead Story

Now the remarkable story of Pumtek beads and their imitations can be told, and many questions about them answered. The key is a report by U Aung Myint, Conservator of Forests, Mandalay Division, who investigated the ancient city of Wadi in central Myanmar. The internal government paper, *A Preliminary Study of the Ancient Town of Wadi*, dated 8 August 1980, had a very limited circulation and was written in Burmese. It was acquired and translated by Virginia Di Crocco, secretary of the Siam Society, Bangkok. A partial translation and detailed commentary will be published by us in the *Journal of the Siam Society*. Here is a summary of Myint's discovery. Myint's interest in the ancient ruined city of Wadi led him to interview nearby villagers to see what they had found, and those of Payagyi told him a fascinating story. Early in this century some of them began picking up beads from an area of Wadi they called the "Red earth Pit. They recognized them as "Chin Padi" or "Chin Beads," heirlooms among the highlander Chin people, beads which they call Pumtek. A 1904 report cited by Myint suggests that the first finds were made around that time. Digging to find more, the villagers discovered a cemetery with urn burials, containing Pumtek beads, semiprecious stone beads shaped like elephants and other animals, and precious metals. Based on these artifacts, Myint concluded that Wadi was a center of the ancient Pyu people, a conclusion tentatively adopted here. The Pyu dominated central Myanmar during the first millennium A.D. The first written pyu script is from the 5th C. A.D. Hall [1960:35, 121-2] believed their kingdom was destroyed after their capital was plundered in 832. However, a quadrilingual inscription of 1297 has a Pyu passage and the Chinese referred to the pyu Kingdom in 1369/70. the pyu were eventually absorbed into the emerging Burmese population, but it is not clear when this happened [Luce 1985: 61-2] . The pyu adapted several traits with Indian roots, including beads, spindle whorls and pottery decoration. In addition to finished beads, the villagers found unfinished ones; the beads were being made as well as worn at Wadi.

Somehow, word reached the highlands that there was a source of these beads for sale. In the 1920s the village was described as a small festival market, with shops springing up to sell the beads to the Chin, who came down from their mountain fastness annually to buy them. Because of the great demand and the lucrative nature of the trade, the villagers also finished some themselves, perforating (and it appears) polishing them. Around 1926 'the sources of the original Pumtek became exhausted. However, the people of Payagi were onto a good thing and did not want to lose it. U Ba Kyi, who was interviewed by Myint, either originated or took advantage of a solution to the problem of the diminishing number of beads; he and others began making imitation Pumtek beads. The imitations were made in the same size and shape and with the same decorations as the original Pumtek beads, even though "prettier designs" could have been made. A characteristic which distinguishes them from the original appears to be the material on which they were made. What are probably the older Pumtek beads are made of a grainy (petrified) wood, corresponding to the toddy palm, *Borassus flabellifer*. The imitations are of a finer-grained wood, which the people call *ingyin kyauk hpyu*, or "white stone of the sal tree (*Shorea sp.*)". It seems that the fossilized wood available is actually *Dipterocarpoxyton Burmense(s)*, which closely resembles the sal tree's wood [Oldham 1973:1839] as it is a close relative. On the white stone a (white) design was painted with a mixture of lime, washing soda, and borax. Then the whole bead was covered with a black mixture of copper sulfate, potassium chlorate, orpiment, and sulfur mixed - it is baked, said - cooled, in the milk of the human breast. After being decorated, the beads were and washed. The Chin knew that these were imitations, yet they continued to buy them, though at reduced prices. Long barrel beads with many stripes were the most valuable, along with the distinctive diamond tabulars (oblates are the other common shape). Production and sales continued until the Japanese invasion in 1942, resuming in 1950 for a fading market. Though it is not certain when the work ceased, it was over in 1980 when Myint visited Payagi, having stopped some years before.

Conclusions and Implications

Who could ever have guessed the story of the Pumtek beads? They originated in

the ancient Pyu Kingdom (fl. 4th to 9th centuries), made at least in Wadi. Although the technique for decorating the original beads has not been confirmed, it was! probably much like onyx, dZi beads, and other light colored beads embellished with dark lines (not likely the formula stumbled upon by the Payagyi villagers). As such, the work of the Pyu conformed with the contemporary Indo-Southeast Asian Cultural Sphere which produced decorated stone beads of various types. . The beads were favored by the pyu themselves and became popular with the Chin, who were then friendly neighbors, not yet having been driven to the highlands by the Myanmar (Burmese). The pyu are long gone, but the Chin continued to treasure the beads down into the early 20th century (they are apparently selling them now due to economic hardship). This makes the Pumtek beads candidates for the oldest heirloom beads thus far recorded. Around 1900 a new source was found as pyu graves were robbed by villagers who sold the beads to the Chin "like hot cakes." As they ran out, the people of payagyi made imitations from a different stone, which sold, though not as well. The imitations were made from about 1925 to 1942 and 1950 to 1970. Both the originals and the imitations are now on the world bead market, but only now. has their extraordinary story come to light. There are lessons to be learned from the Pumtek bead story and the unraveling of their mystery. One is that the information on beads is available, though often obscure and often requiring considerable work. The persistence of Myint in uncovering Myanmar's past and the diligence of Di Crocco in bringing Myint's work to a wider audience are examples of the kind of devotion to the truth that is necessary to further Bead Research. Another lesson is that the story of the Pumtek beads/Chin Padi is illustrative of the complexity of the bead trade. As we have discussed in an earlier issue [Francis 1991], to assume that the bead trade involves the smooth movement of beads from Point A to Point B is to oversimplify reality. Pumteks, anciently traded from the Pyu to the Chin, later from looted graves to the Chin, then imitations made by villagers after the graves were empty, is as elaborate a story of the bead trade as any and serves to remind us that it is complicated, indeed.

The beads are there. Their stories are there, too. We must be patient and persistent, and in time the truth will be discovered.

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- Luce, G.H. [1985] Phases of Pre-Pagan Burma: Languages and History, Vol. I. Oxford University Press, Oxford (3 vols.).
- Oldham, R.D. [1973] A Manual of the Geology on India and Burma Vol. III. Controller of Publications, Delhi.

Note that there is no mention of A.G.E. Newland's 1894 seminal work with the Chin in the above article. We now turn our attention to the question of uranium in Myanmar, where the truth about actual deposits of uranium in the country is difficult to prove.

The bulk of Myanmar's uranium output is a byproduct of its gold mines. In the absence of any domestic demand for uranium, most of it is being exported to China, to the best of our knowledge. According to some reports, it is also could be used for trade-in-kind with North Korea. The country also has several uranium deposits. There are five, according to a 2001 report by the Myanmar energy ministry: Magwe and Taungdwingyi in Magway province, Kyaukpadaung and Paongpyin in Mandalay province, and Kyauksin in Rakhine province. Four of them contain low-grade uranium ore (less than 0.1 per cent uranium content); only one deposit, Magwe, has up to 0.5 per cent medium-grade. In 2001 Russian geologists took part in a joint uranium exploration program, but then Myanmar decided to suspend it.

In the absence of detailed information about the Myanmar uranium deposits it is hard to make any projections about the prospects for uranium mining in the country. But the low-grade of the ore in the deposits found so far suggests that mining would probably be commercially unviable. Myanmar specialists are now conducting feasibility studies; some of these studies are part of their education programs and doctoral research at Russian universities.

Russia, Myanmar and Nuclear Technologies by Anton Khlopkov and Dmitry Konukhov, Russia, 2011



Figure 1099

Figure 1099 shows a Google map adapted to show the area where the Russian survey indicates sources of uranium could be found in Myanmar, i.e. Magway, Mandalay and Rakhine provinces. This map needs to be viewed in context with the following maps locating gold deposits found in the country as the Russian report states that most uranium recovered is as a result of by-products of gold mining.

There is a distinct lack of clarity regarding uranium found in Myanmar and we have been unable to find any maps depicting any such deposits. Our purpose in pursuing this was to try to put forward any case for uranium in any petrified wood located in the country. We have failed to find any concrete evidence of any examples, let alone araucarioxylon species of greater age than the Tertiary. With the foregoing in mind, we reproduce maps of gold deposit areas in Myanmar.

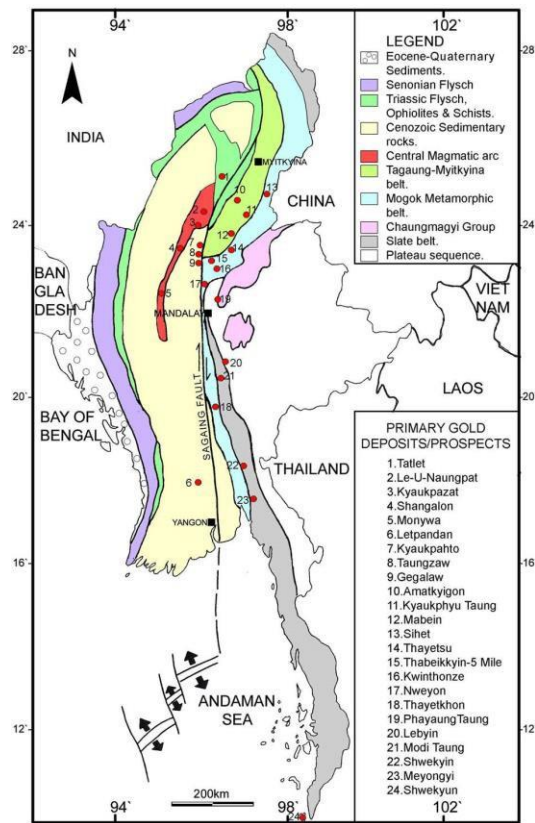


Figure 1100

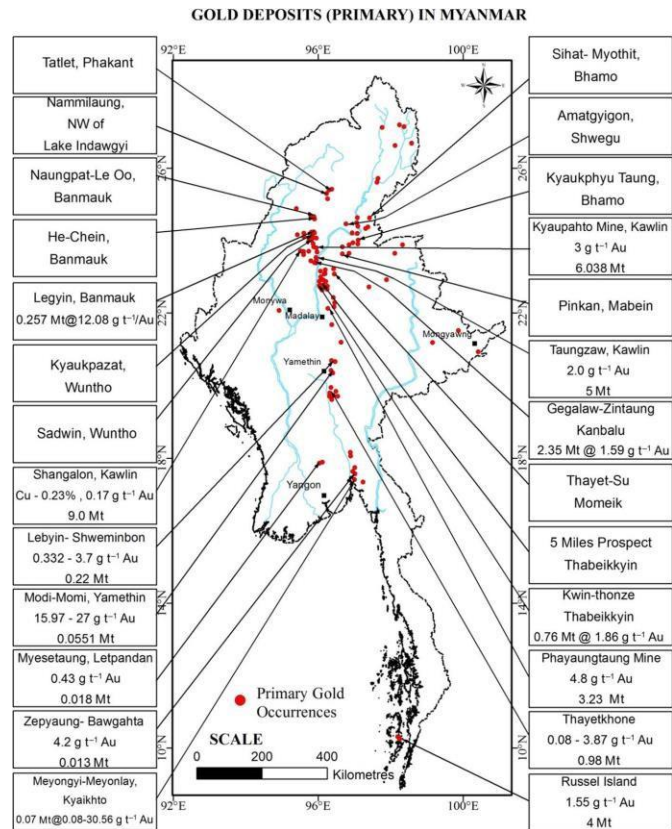


Figure 1101

Above (figures 1100,1101) are shown maps from an in-depth report: Chapter 25 Gold deposits of Myanmar Article in Geological Society London Memoirs, by Khin Zaw, University of Tasmania, January 2017. There would appear to be no gold mining in the Rakhine or Magway provinces, thus we cannot reconcile the Russian report with the Khin Zaw article.

A reference study for silicification in petrified wood is *Silica Recrystallization in Petrified Wood* by C. L. Stein, Department of Geological Sciences Harvard University Cambridge, Massachusetts 02138 Manuscript received June 21, 1979; revised March 22, 1982.

Quotes from the study:

It is well established that chalcedony and microgranular quartz are the most common (if not exclusive) forms of siliceous petrification in fossil woods older than Eocene (Buurman, 1972; Frondel, 1962). Mizutani (1966, 1967) reports a sample of petrified wood of Miocene age composed primarily of low-cristobalite, with minor quartz, and another sample, of Triassic age, composed wholly of quartz. Other investigators (Buurman, 1972; Mitchell, 1967; Mitchell and Tufts, 1973) re-port the occurrence of tridymite-like silica, as identified by X-ray powder photography, in many specimens of opalized wood. They suggested that "disordered tridymite" is a common form of fossil wood mineralization, although the evidence presented for this is not conclusive. In this study, thirty-three samples of silicified wood ranging in age from Upper Devonian to Recent were examined by X-ray diffraction and scanning electron microscopy in order to identify the silica phases present and to establish a correlation between silica recrystallization and geologic age.

The results suggested general trends of increases in both of these parameters with increasing sample age.

The now familiar conversion sequence, opal-A →opal-CT →quartz, has been well established by experimental work (Ernst and Calvert, 1969; Kastner et al., 1977; Mizutani, 1970, 1977; Oehler, 1976) and numerous field studies.

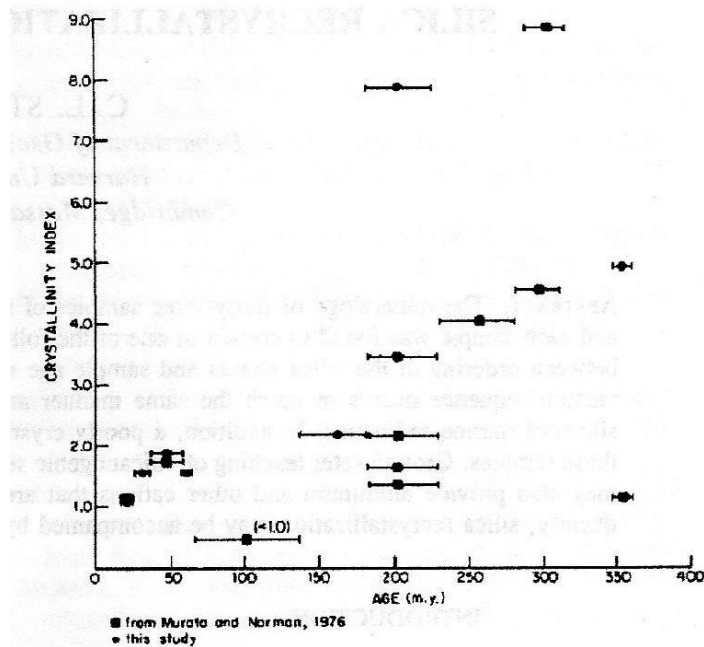


FIG. 1.—Crystallinity index of silicified woods versus age of sample (in m.y.), including data of Murata and Norman (1976). Error bars indicate uncertainty in sample age.

Figure 1102. Graph from the C L Stein study

.....In summary, it is not surprising that the silica deposited in the interstices of plant material should recrystallize from opal-A to opal-CT, and from opal-CT to quartz. The corresponding changes in crystal habit of these phases are seen to alter fine detail in the wood structure, although the gross morphology of plant tissue is preserved even in Paleozoic samples. Furthermore, the results of this study indicate that the time scale over which this transformation occurs is comparable to the conversion rate of biogenic silica in marine sediments.

The C. L. Stein study suggests that in order to reach the quartz-like stage of silicification, a period of tens of millions of years is necessary.

The importance of white quartz to the Qiang, and the Shang viewing the color white as their most precious, leads us to note that as far as we have been able to discover, the Chin beads are made from white, or as near white as possible, quartz-like silicified wood. We sought out Chinese experts' views on the subject of silicified wood in China and found this interesting quote from one of the most comprehensive pieces available on the internet, with translation via Google Chrome.

七、硅化木种类

1、硅化木矿物种类

作者对数千件硅化木标本鉴定结果及相关资料分析，硅化木矿物种类以石英为主，其次玉髓，蛋白石十分稀少。

矿物学分类为：石英硅化木、玉髓硅化木、蛋白石硅化木。

从硅化木的残余结构分析，部分蛋白石硅化木已转变为石英硅化木，尚见脱水作用下的弯曲裂隙残留。中生代时期形成的蛋白石硅化木，由于时间长远，应力作用、热力作用及陈化，现已转变成石英硅化木，只有新生代的蛋白石硅化木才得到保存

2、硅化木颜色种类

1)、白色硅化木

矿物纯净度高，粒度均匀，组成单一，细胞残留色浅，细胞壁残留物极少，细胞形态主要从石英、玉髓交代、充填、堆积形成的细胞轮廓判断。树种多以水杉，银杏等非产树脂性植物为主，后期浸染作用微弱。

白色硅化木较少见。

Seven, silicified wood species

1. Silicified wood minerals

The author analyzed thousands of pieces of silicified wood specimens and related data. The silicified wood minerals are mainly quartz, followed by chalcedony and opal.

Mineralogy is classified into quartz silicified wood, chalcedony silicified wood, and opal silicified wood.

From the analysis of the residual structure of silicified wood, some opal silicified wood has been transformed into quartz silicified wood, and the residual cracks under dehydration are still seen. The opal silicified wood formed during the

Mesozoic period has been transformed into quartz silicified wood due to long-term, stress, thermal and aging, and only the new generation of opal silicified wood is preserved

2, silicified wood color types 1), white silicified wood

The mineral has high purity, uniform particle size, single composition, light residual color, and little residue in the cell wall. The cell morphology is mainly judged from the contour of the cell formed by quartz, chalcedony, filling and accumulation. Most of the species are mainly non-resinous plants such as metasequoia and ginkgo, and the late dip is weak.

White silicified wood is rare.

Shanghai Mineral Gemstone Testing Center Hu Jiayan

作者: 上海地矿珠宝玉石检测中心 胡家燕 <http://bbs.tianya.cn/post-150-526141-1.shtml>

The last sentence of the quote notes that white silicified wood in China is rare. We have previously commented on the fact that the ancient Qiang chose a rare material to work with, much rarer than white quartz. The material is also very difficult to fashion. We refer to the possible Feng Shui aspects quoted by us elsewhere in this study.

Jade and their simulants in ancient China

We have previously quoted sources stating that there were certain materials used as jade 'simulants'. To demonstrate that silicified wood may fit into this category we use the following articles as evidence that the ancient Chinese considered several jade-like stones valuable. As shown by us, silicified wood can easily be interpreted as quartz.

Ebay and other world markets are currently flooded with all kinds of carved stone from China, much of it from tombs- but then much of it is supposedly “fake”- how to know which is which? Well, if it is covered in dirt and has gravel still stuck in cracks, chances are it is real! But really what? There were all kinds of people in China from all different levels of society and not all of them could afford the best jade, nor were they even allowed to wear the best even if they wanted to by imperial decree in some time periods. Also when people were buried often corners were cut in carving the exorbitant amount of goods to be placed in the tomb- since they were never used nor even seen by people in life- and were largely symbolic. Also tastes for carved stone has become more and more exclusive instead of inclusive over time, or at least for Hong Kong markets as well as overseas buyers which is much of what we see as westerners when researching jade, while the domestic market is somewhat different and people can't afford the very finest nephrite jade.

<https://lootingchina.wordpress.com/2016/09/04/fake-jade/>

Therefore, from the preceding article it could be suggested that most jades claimed to be ancient Chinese are copies or fakes. The next quote is from the National Palace Museum, Taiwan:

The Jade Simulants-rock Crystal, Chalcedony, and Lapis Lazuli

The ancients did not make fine distinctions between true jade and its simulants.

The distributions of four classes of jade simulants: serpentine, feldspar, carbonate, and the quartz groups, are illustrated in the Geographical Location of Jade Deposits found in the outer room.

Quartz group specimens are the most frequently observed jade simulants. Composed of silicon dioxide, quartz can be subdivided into the macrocrystalline and cryptocrystalline types, both of which can be further subdivided into numerous varieties. Among the varieties in the former class is the transparent, colorless Rock crystal known to the ancients as "aquajade." Also numbered among these varieties are citrine containing the ferric ion, rose quartz containing the titanium ion, and amethyst containing iron hydroxide. Occasionally, quartz may be found with needlelike inclusions. Lastly, upon exposure to radiation, transparent rock crystal is transformed into the darkly colored smoky crystal as a result of an alteration in atomic structure.

Cryptocrystalline varieties, substances whose minute crystals are visible only under high magnification, and grouped under the name chalcedony and appear in numerous forms. Agate contains striae of assorted colors which form in the presence of coloring elements.

<http://www.npm.gov.tw/exhibition/cjad2000/english/ejad2000.htm>

Jade in ancient China from the Xinglongwa Culture onwards

For comparison with authentic excavated jades, we use the 玉器起源探索 The Origin of Jades in East Asia 興隆窪文化玉器研究及圖錄 Jades of the Xinglongwa Culture book by Yang Hu, Liu Guoxiang (China Shekuai Kexue Yuan Institute of Archeology); Deng Cong (Chinese Archeology and Art Research Center of the Chinese University of Hong Kong). Placed alongside silicified wood, used to make the Chin beads, it can be seen that they are quite similar in appearance. The Xinglongwa Culture is dated 6200–5400 BC and shows that jade was being fashioned at this early stage. We have previously quoted S. Howard Hansford who believed the jade came from Khotan. This would indicate long-distance trade from the Southwestern edge of the Taklamakan Desert to Liaoning.

Images: <http://m.sohu.com/n/424614704/>.



Figure 1103



Figure 1104

Figure 1103. Tomb 135 Xinglongwa

Figure 1104. Tomb 117 Xinglongwa

<http://m.sohu.com/n/424614704/>

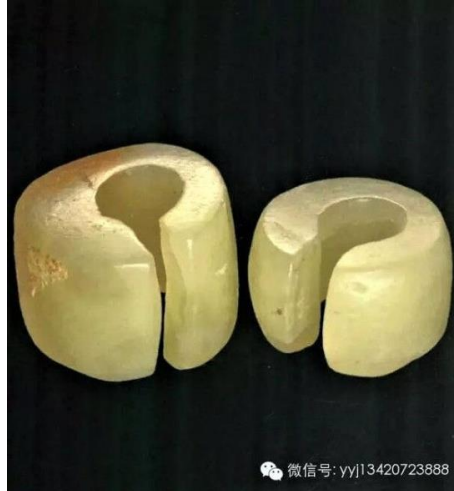


Figure 1105

Figure 1106

Figure 1105. Tomb 135 Xinglongwa

Figure 1106. Tomb 108 named as Chalcedony 興隆窪遺址 108 號墓出土的玉髓玦飾

This is proof that jade simulants, as reported in our study, were considered invaluable.
<http://m.sohu.com/n/424614704/>



Figure 1107. The similarities between the Chin bead material here, and jade shown in figures 1105,1106, is apparent



Figure 1108. Images from: Jades of the Xinglongwa Culture book.
<http://m.sohu.com/n/424614704/>



Figure 1109. Tomb 4 beads. These are authentic Neolithic beads excavated from the Xinglongwa site.
<http://m.sohu.com/n/424614704/>



Figure 1110. Xinglongwa artifacts. <http://m.sohu.com/n/424614704/>

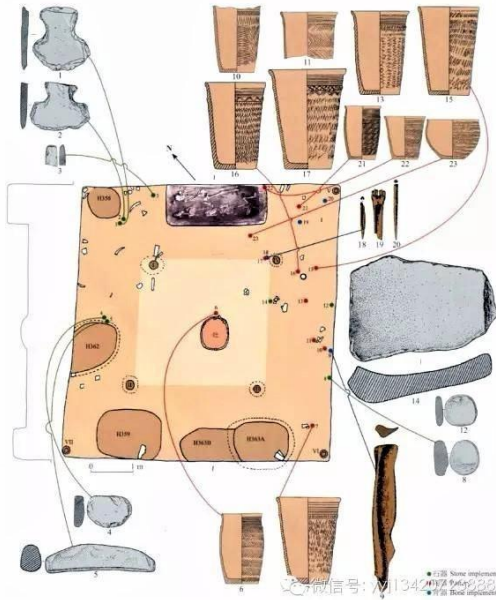


Figure 1111

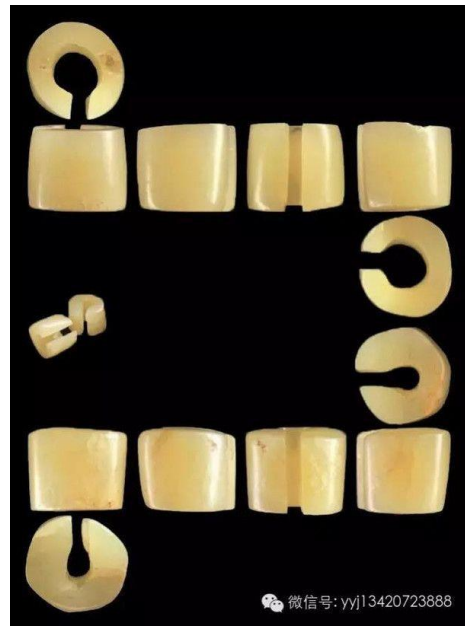


Figure 1112

Figure 1111. Grave goods from the Xinglongwa site.

Figure 1112. Tomb 142. Images: <http://m.sohu.com/n/424614704/>



Figure 1113. Drilling methods from Tomb 22. <http://m.sohu.com/n/424614704/>

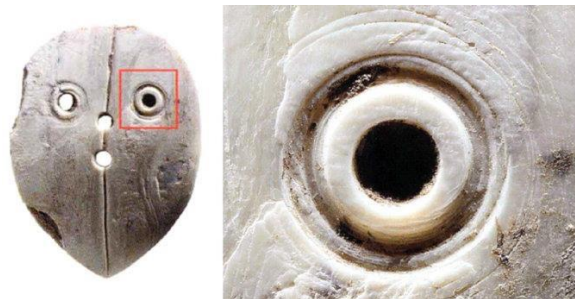


Figure 1114. Xinglonggou site, Tomb 22, mussel shell drilling.: <http://m.sohu.com/n/424614704/>



Figure 1115



Figure 1116

The Xinglonggou site is dated to the Xinglongwa culture 興隆洼文化 6200–5400 BC. Figure 1115 shows Tomb 7 with a male of about 25 years of age. The recovered pottery above right (figure 1116) is typical of the culture. Was the jade supplied from the Khotan area? In the absence of concrete evidence of any jade mine in the Liaoning area we are left with this as the only source. Obviously, the Liaoning area cannot be ruled out one hundred per cent as not having an ancient local source of jade.

Figures 1115,1116: <http://m.sohu.com/n/424614704/>



Figure 1117

The enamel ornaments and jade beads (figure 1117) unearthed from the Hemudu site in Zhejiang, China. This may prove that the ancient Xinglong monks were a very remarkable maritime nation. They entered the Yangtze River basin along the sea route more than 7,000 years ago, and the Yangtze River jade route more than 7,000 years ago, and the Yangtze River jade civilization began here.

http://blog.sina.com.cn/s/blog_12e5a65cd0102x9tw.html



Figure 1118

Above: Jade unearthed from the Tashan site in Zhejiang, China (figure 1118). The site is located in the southeast of Dancheng Mountain, Xiangshan County, Zhejiang Province. It covers an area of about 30,000 square meters. The site belongs to the Hemudu culture, dating back more than 6,000 years.

Source: http://blog.sina.com.cn/s/blog_12e5a65cd0102x9tw.html

The Fu Hao Kneeling Man Jade

This jade figure (figure 1119) deserves particular attention. The figure is displaying the symbol which we followed on our journey from the Ukraine, Southeast Anatolia and the Levant to Neolithic China. As can be seen from the quote below, some scholars speculate that the figure depicts Fu Hao herself. In any event, the fact that the figure, obviously of someone of great importance, is wearing the symbol prominently on a chain or rope, means that the symbol was indeed of great significance. The symbol is described as a 'square design' and on a belt which could indicate the Chin bronze pieces were copied onto the figure. The description below is from the National Museum of China website at:

<http://en.chnmuseum.cn/tabid/549/Default.aspx?AntiqueLanguageID=3259>

Jade figure with protruding object Late Shang (1300–1046 BC) Height 7 cm,
Width 3.5 cm

Excavated in 1976 from the tomb of Fu Hao, Anyang, Henan Province

This yellowish-brown jade kneeling figure, carved in the round, rests his hands on his thighs.....

His long buttoned gown has lapels and long narrow sleeves, is pulled in at the waist with a belt and decorated with a square design.

A long piece of cloth hangs over his front and he wears shoes. The sleeves and jacket have a double hooked cloud pattern and eye design. Over his right buttock are traces of a silkworm pattern, the heads resembling the auspicious Chinese 'ruyi' symbol. A broad-handled object protrudes from his back, its ends scrolling into cloud shapes, cloud designs on one side and the silkworm designs on his finely decorated clothes and imposing bearing suggest he belongs to the upper ranks of society. Most distinctive is the protruding object, but the hat is also interesting, resembling a roll of silk. One of the most precious jades of the late Shang period, with very fine engraving, it is a useful source for research into Shang headgear, clothing and ornament. Some scholars believe that this is not a male figure but is Fu Hao herself. (Zhang Runping)



Figure 1119. Fu Hao jade. <https://www.duitang.com/people/mblog/223856017/detail/>

Comparison with Chin bead and bronze pieces show a remarkable similarity. The same can be said of the myriad of items shown by us in this study.

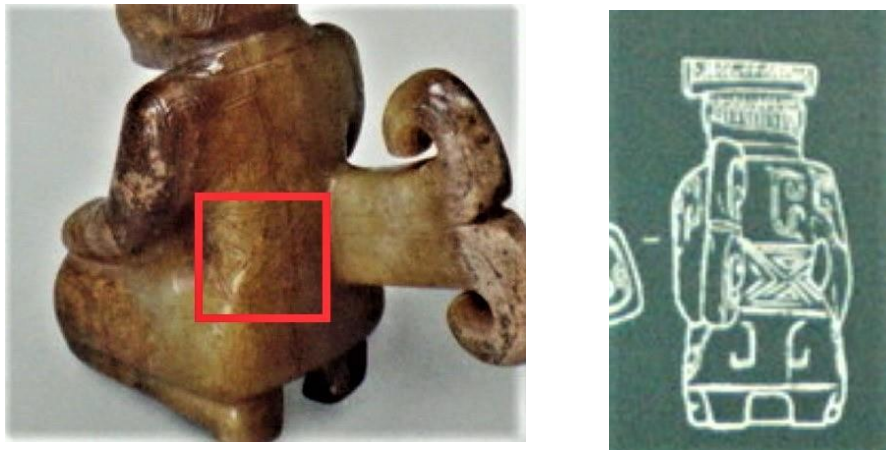


Figure 1120. Fu Hao jade. http://www.360doc.com/content/10/11/10/05/380916_68253462.shtml

The figure also has the symbol on the back. As the item is 7cm tall, and the Chin bronze piece is approximately 22mm x 20mm, the symbol on the figure, although would appear to be more or less the same size as the bronze piece.



Figure 1121. Fu Hao's kneeling man at the National Museum of China. Second from left. <http://forum.xitek.com/forum-viewthread-tid-1035618-extra--action-printable-page-27.html>



Figure 1122



Figure 1123



Figure 1124



Figure 1125

Figure 1122. Chin bead and bronze piece

Figure 1123. Mehrgarh vase detail, c. 3300 BC, Pre-Indus and Early Indus Cultures of Pakistan and India, Pt 1, by Shaffer and Thapar 1992

Figure 1124. Detail of kneeling man <https://www.duitang.com/people/mblog/223856017/detail/>

Figure 1125. Bactria Margiana seal, third or second millennium BC

<https://www.pinterest.co.uk/pin/311381761712552627/?lp=true>

Reference the Fu Hao ‘kneeling man’ jade. Due to its very small size and positioning in the museum (figure 1121) clear, concise images are hard to come by. However, we managed to obtain further images from the internet indicating that the ancient symbol which we propose to be Proto-Indo-European, which is portrayed throughout our study, does indeed form a continuous belt around the figure. We consider this significant; particularly should the figure indeed represent Fu Hao as claimed by some scholars. We are now certain that the symbols are arranged in a belt formation. Whoever the figure represents, the fact that the belt closely resembles the Chin belt pieces is a good indication that this type of belt was worn by Shang Dynasty dignities at the latest, and possibly by earlier persons of great importance. We speculate that they may have also been worn as pendants in other situations.



Figure 1126. Jade ‘kneeling’ figure from Fu Hao’s tomb c. 1200 BC <http://www.eise.org.cn/404.html>

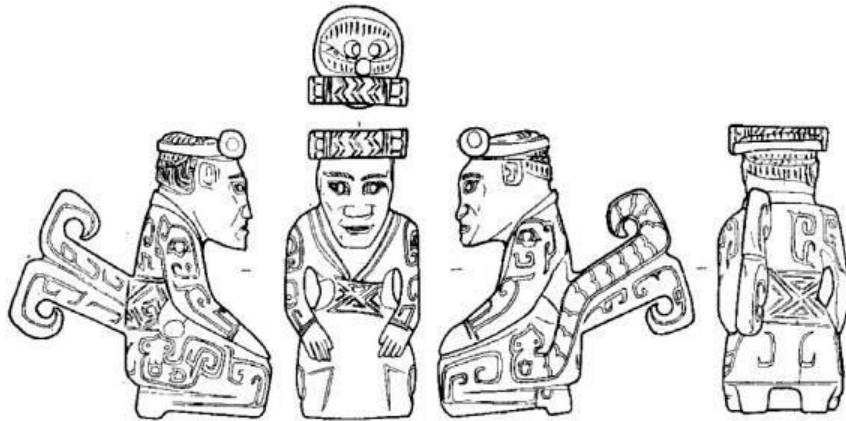


Figure 1127

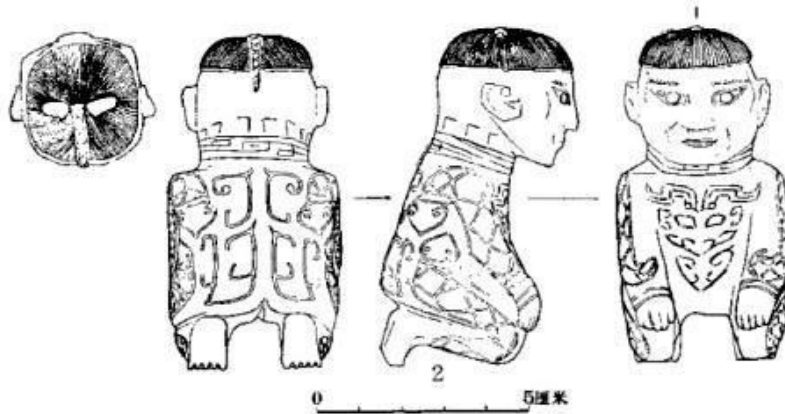


Figure 1128

Figures 1127,1128. Fu Hao jades. https://www.thepaper.cn/newsDetail_forward_1590314

The description given by the article, referring to Fu Hao jades (figures 1127,1128) is as such (Translation via Google):

The Distinguishing and Traceability of Women's Good Jade (Stone) People. The excavation report of the women's tomb said that a total of 13 jade people were used, and these jade people could be divided into several different types. From the body posture, it can be divided into three categories: half-bow, knee-length and knee-length. According to the headgear and hair style, the jade portrait has the distinction between wearing a crown and not wearing a crown. The crown has a high crown and a low crown. Those who do not wear a crown have a long squat and a short hair.

Based on the above classification criteria, these jade people can be clearly divided into two categories, one is wearing a crown, the arms are bent to the shoulders, the kneeling position, and the other is crownless, arms drooping, kneeling position. The origin of the woman's tomb statue can be as far back as 5,000 years ago, the Lingjitan culture, the Hongshan culture and the Liangzhu culture in the eastern part of China have discovered the jade people. Cultural jade.

《妇好玉（石）人的辨形与溯源》

妇好墓发掘报告称共使用玉人 13

件，可以将这些玉石人分为几种不同的种类。从身形姿势上，可分为三类：半蹲姿、踞姿和跏姿。根据头饰与发式，玉石人像有戴冠者和不戴冠者之区分，冠又有高冠、低冠之别，不戴冠者有长辫、短发之别。综合以上分类标准，这些玉人明显可以分为两大类，一类是戴冠、双臂屈折向肩部、踞姿，另一类是无冠、双臂下垂、跏姿。妇好墓人像身姿的起源可以到距今 5000

年前后，中国东部地区的凌家滩文化、红山文化和良渚文化都发现了玉人，妇好墓玉人的姿态均可追溯至这些文化的玉人身上。



Figure 1129. Fu Hao jade. http://www.kaogu.cn/en/News/Academic_activities/2016/0325/53400.html

The jade above (figure 1129) appears to have a design on the right arm similar to the Chin bead and bronze pieces.

The Links between the Southwest Native American Indians and Neolithic China

We have noticed some remarkable similarities between ancient pueblo Indian cultures of the American Southwest and the cultures of ancient China. Possible route shown below.

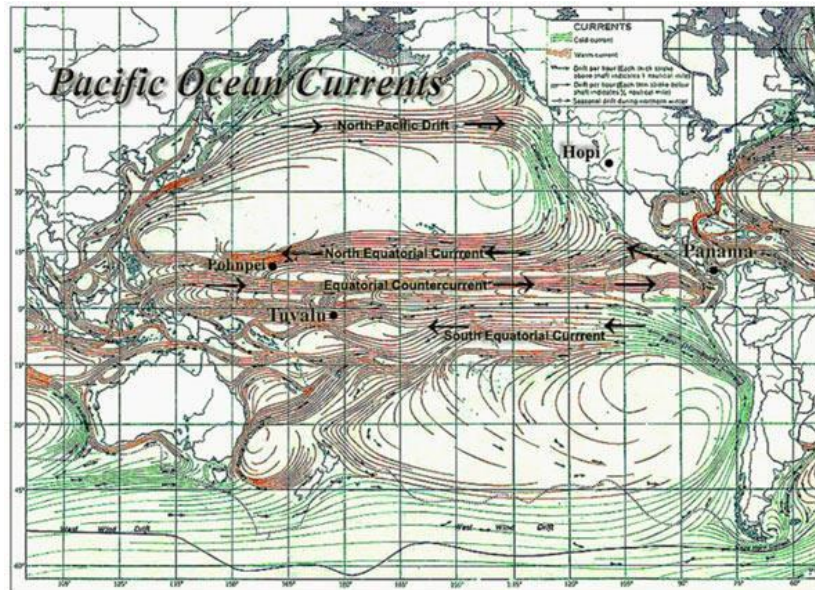


Figure 1130. Ocean currents. <https://www.ancient-origins.net/myths-legends-opinion-guest-authors/gene-flow-and-counter-current-hopi-sea-voyages-lost-continent-mu>



Figure 1131

Figure 1131. House built of silicified wood. <http://lithiccastinglab.com/gallery-pages/agatehouselarge.htm>



Figure 1132

Figure 1132. Arizona silicified wood detail. http://www.americansouthwest.net/arizona/petrified_forest/agate-house-wall_1.html

Petrified wood houses and trunks from the Petrified Forest Arizona are shown in figures 1131 and 1132. The Hopi and their ancestors chose to live in an area where the Triassic-era silicified wood, similar to which we believe the Chin beads were made from, was also abundant. Perhaps this area is unique in the Americas.



Figure 1133



Figure 1134

Figure 1133. Silicified log. <http://www.ecotravellerguide.com/2012/08/the-petrified-forest-national-park-arizona/>

Figure 1134. Silicified wood from Liaoning, China

<https://s.taobao.com/search?tab=all&q=%E6%9C%A8%E5%8C%96%E7%9F%B3&sort=price-desc>

The Native American Indian connection:

...archeological evidence gives insight into ancient civilizations that once roamed or lived in the Petrified Forest National Park and the Painted Desert over the course of about 13,000 years. Evidence shows that prehistoric cultures of the ancient Anasazi, Mogollon and Hohokam had impact on these lands over varying periods of time. These ancient peoples were not considered as specific Indian Tribes, but are ancestors of some of today's Indian Tribes in the Southwest such as the Hopi, Navajo and Zuni...Ancient Civilizations in the Arizona Petrified Forest.

<http://www.arizona-leisure.com/ancient-people-petrified-forest.html>

John A. Ruskamp Jr., Ed.D., reports that he has identified an outstanding, history-changing treasure hidden in plain sight. High above a walking path in Albuquerque's Petroglyph National Monument, Ruskamp spotted petroglyphs that struck him as unusual. After consulting with experts on Native American rock writing and ancient Chinese scripts to corroborate his analysis, he has

concluded that the readable message preserved by these petroglyphs was likely inscribed by a group of Chinese explorers thousands of years ago.

On the fringe of archaeology have long been claims that the Chinese reached North America long before Europeans. With some renowned experts taking interest in Ruskamp's discovery, those claims may be working their way from the fringe to the core. But, the disparate and widespread symbols he has found show many indications of authenticity. They have the potential to inspire a more serious investigation into early trans-Pacific interaction.

To date, Ruskamp has identified over 82 petroglyphs matching unique ancient Chinese scripts not only at multiple sites in Albuquerque, New Mexico, but also nearby in Arizona, as well as in Utah, Nevada, California, Oklahoma, and Ontario. Collectively, he believes that most of these artifacts were created by an early Chinese exploratory expedition, although some appear to be reproductions made by Native people for their own purposes.

One of Ruskamp's staunchest supporters has been David N. Keightley, Ph.D., a MacArthur Foundation Genius Award recipient who is considered by many to be the leading analyst in America of early Chinese oracle-bone writings. Keightley has helped Ruskamp decipher the scripts he has identified. One ancient message, preserved by three Arizona cartouche petroglyphs, translates as: "Set apart (for) 10 years together; declaring (to) return, (the) journey completed, (to the) house of the Sun; (the) journey completed together." At the end of this text is an unidentified character that may be the author's signature. New Evidence Ancient Chinese Explorers Landed in America Excites Experts,

<http://www.theepochtimes.com/n3/1348894-new-evidence-ancient-chinese-explorers-landed-in-america-excites-experts/>

See figure 1135.



Figure 1135



Figure 1136



Figure 1137

Figure 1135. J. Ruskamp, see previous article

Figure 1136. <https://www.ancient-origins.net/ancient-places-americas/new-evidence-ancient-chinese-explorers-landed-america-excites-experts-003087>

Figure 1137. <https://factslegend.org/new-evidences-show-chinese-discovered-america-not-columbus/>

Our findings of similarities in symbols on both sides of the Pacific



Figure 1138



Figure 1139



Figure 1140

Figure 1138. Hohokam dish. <https://www.ebay.co.uk/itm/PREHISTORIC-HOHOKAM-RED-on-BUFF-BOWL-WITH-FLARED-RIM/332047273186?hash=item4d4f8f4ce2:g:hKEAAMXQtUxTdWEY>

Figure 1139. Daxi culture ceramic ball. http://www.gucn.com/Service_CurioStall_Show.asp?ID=10585700

Figure 1140. Machang phase dish. <https://bbs.artron.net/thread-2919174-1-0.html>

Whilst not showing any examples of the symbols from the Pacific Islands, we have noticed them widespread in this area as well as South America.



Figure 1141



Figure 1142



Figure 1143

Figure 1141. Anasazi ware. https://www.ebay.com/itm/Ancient-Anasazi-Very-Large-Mesa-Verde-Black-amp-White-Dipper-NM-Restored-15-034-/271527137362?nma=true&si=tMmXUuTHXLRZjp%252B0bzvog2KZFNk%253D&orig_cvip=true&rt=nc&_trksid=p2047675.12557

Figure 1142. Machang phase. https://tieba.baidu.com/p/1090688206?red_tag=0429707629

Figure 1143. Daxi/Qijia/Majiayao. bbs.sssc.cn/viewthread.php?tid=291980



Figure 1144



Figure 1145

Petroglyph and Ancient Native American Design by Alice Seely. These designs, based on ancient Navajo folk art which can be traced back to the Ukraine 18000–15000 BC, and its evolution in the Southeast Anatolia/Levant area 10000–6000 BC are very similar.



Figure 1146

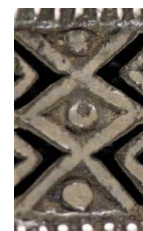


Figure 1147

Figures 1144-1147. Navajo Earring designs. <http://www.aliceseelywholesale.net/product-category/southwestern/petroglyph-earrings/>

Figure 1156. Detail from Chin bronze.



Figure 1148

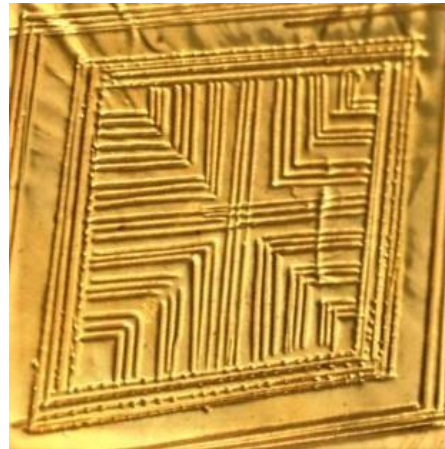


Figure 1149

Figure 1148 shows a Petroglyph from Waterflow, New Mexico. This symbol is identical to those we have followed across the world. The website (www.frankstehno.com) has a comprehensive collection of Native American rock art and is very well presented.

Figure 1148 credit: <http://www.frankstehno.com/sagemesa/destinations/newmexico/waterflowas/rockart01.htm>

A detail from the Clandon Barrow Lozenge, Dorset, England, third millennium BC is shown in figure 1149 and is sourced from: <https://www.silentearth.org/dorset-county-museum>



Figure 1150. Native American Indian sign for Medicine Man or Shaman. Surely this important symbol is more than just pure coincidence, being brought to the Americas by migrants?



Figure 1151. Chin 'eye' beads similar to the Native American sign shown in figure 1150.

Figure 11. Pre-Columbian seals with rectangular shape and bilateral (a) and rotational (b) symmetries. (c) shows a monkey and a jaguar (adapted from [26]). (e) and (f) are Taino round stamp seals.



Figure 1152

In figure 1152 (e) is a remarkable stamp likeness from the Taino culture of North America. The culture dates to c. 400 BC. Compare this symbol, which could be the earliest example in North America, with figures 1138-1148. It is hoped that experts in this field may be able to elaborate on this.

Image: Symmetries in Images on Ancient Seals Amelia Carolina Sparavigna Dipartimento di Fisica, Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino, Italy.



Figure 1153. Navajo rug, c. 1863–1900 AD. Harvard University Museum



Figure 1154



Figure 1155

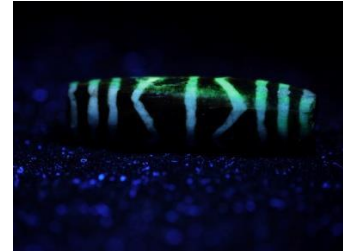


Figure 1156

Figure 1154. Native American bead of unknown origin, according to the website owners on enquiry from us. Remarkably similar to the Chin bead design.

<https://www.firemountaingems.com/resources/jewelry-making-articles/ea71>

Figures 1155,1156. Chin bead of rare design.



Figure 1157. Map showing the Hopi Indian homeland, in the area of the Arizona Petrified Forest National Park, USA <https://www.lakeforest.edu/academics/programs/environmental/courses/es368/steele.php>

The Native American bead shown in figure 1154 is of such a design that it would be almost impossible to replicate unless based on a similar design. Unfortunately, the website owners were unable to supply us with any information as to the origins of the bead. It is hoped that on reading our study, someone may be able to provide further knowledge on this. The Chin bead shown in figures 1155,1156 is of rare design and we only have a few from the 1543 beads in our collection.



Figure 1158

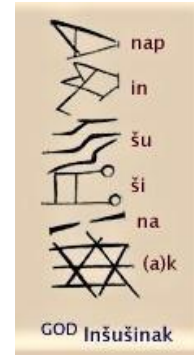


Figure 1159

Above is shown an arrangement of Native American triangular decorations (figure 1158) the pairs forming hourglass-shape figures connected by an encircling line passing through their points of junction. This is very reminiscent of the original design from the Blombos Cave c. 77000 BC which we have followed across the world. The image was obtained from Chapter XII, The Origin and Symbolism of Navaho Blanket Designs by George Wharton James 1920, http://www.library.arizona.edu/exhibits/swetc/inbl/body.1_div.12.html. Figure 1159 shows Proto-Elamite script with similar symbols. Sourced from: www.ancientscripts.com/elamite.html. The figures can be compared to the petroglyph in figure 1160 (image on the right). This may appear as an optical illusion, at first presenting as a row of lozenges. The petroglyph is in fact composed of hourglasses.



Petroglyph, Chaco Canyon, New Mexico



Petroglyphs, Largo Canyon drainage, New Mexico

Figure 1160. Although not the same symbol as shown in figures 1158,1159, this symbol is found on oracle bones. <http://patagoniamonsters.blogspot.com/2013/10/chelolon-hourglass-labyris-or-double-ax.html>



Figure 1161

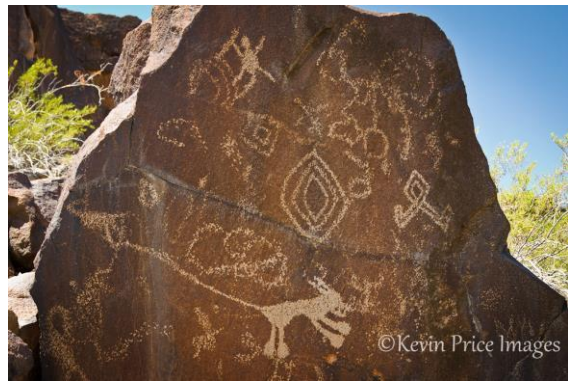


Figure 1162

Figure 1161. Hohokam Rock Art. <http://www.seibelstudio.com/blog/?p=104>

Figure 1162. Rock art. <https://snakeshooter.wordpress.com/tag/sears-point-petroglyphs/>



Figure 1163. Chin 'eye' beads



Figure 1164. Hohokam Rock Art. The circles may be compared with the far-right bead shown in figure 1163. <http://arizonaexperience.org/remember/hohokam-rock-art>

Some points for discussion

We put forward a few thoughts that occurred to us during our earlier forays into the whole subject. These may not be considered too seriously, but we include them on the off-chance that there may be some basis for our suppositions.

Is this bronze piece inscribed? Only one in the collection of nearly 1000. The markings appear to be deliberate (figures 1165,1166).

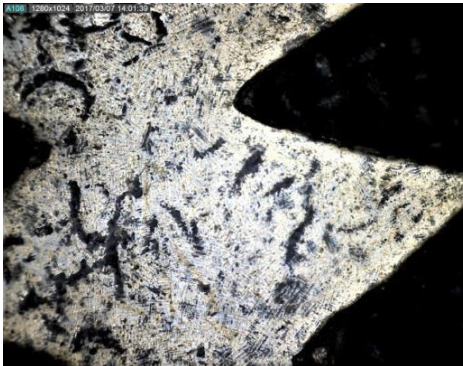
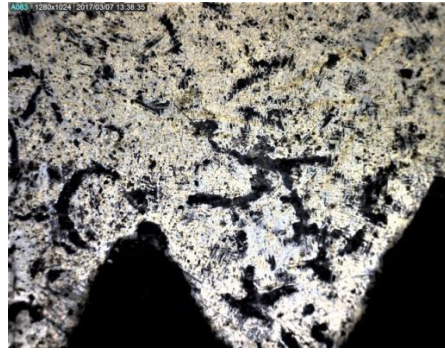
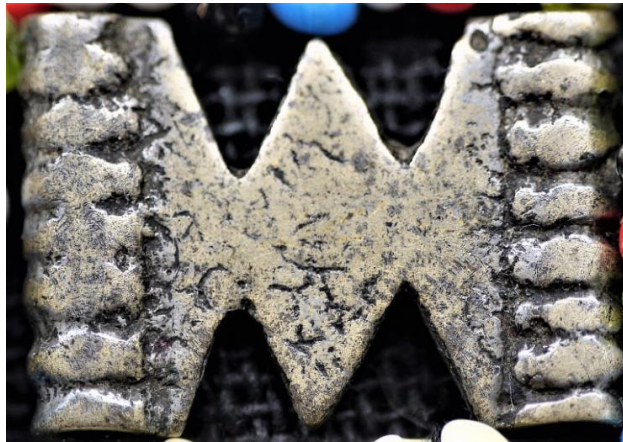


Figure 1165

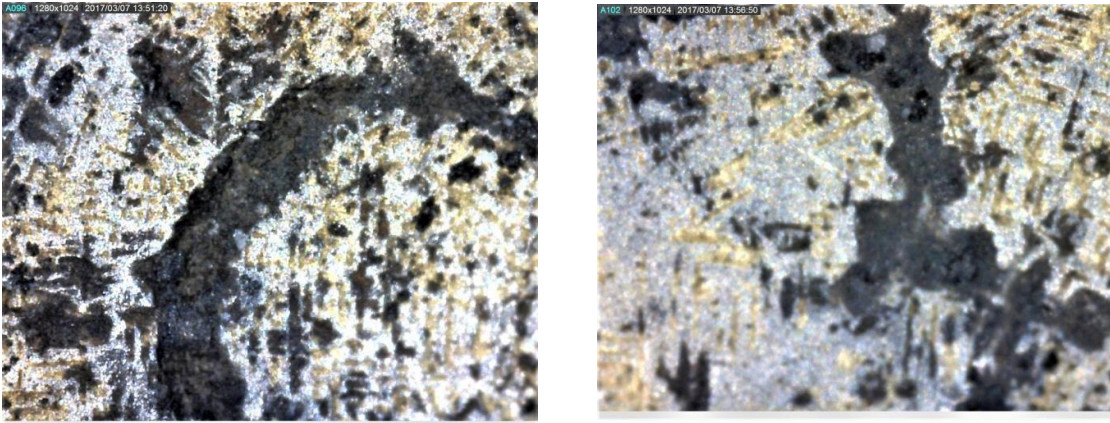


Figure 1166

The bronze pieces were formed with rolled loops on either side (figure 1167). This would enable copper wire or some type of thread to be used to attach the pieces together. (See Part 3 pp 173-190).



Figure 1167

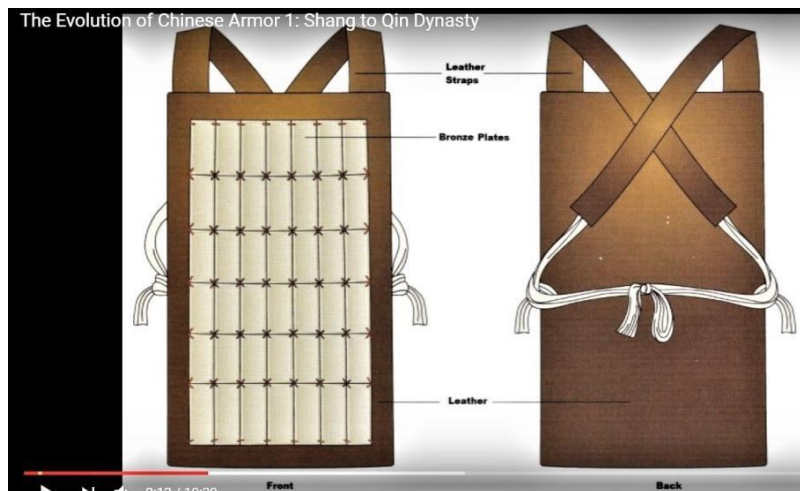


Figure 1168. Evolution of Chinese armor, Shang to Western Zhou
<https://www.youtube.com/watch?v=JvmFAoNJS68>

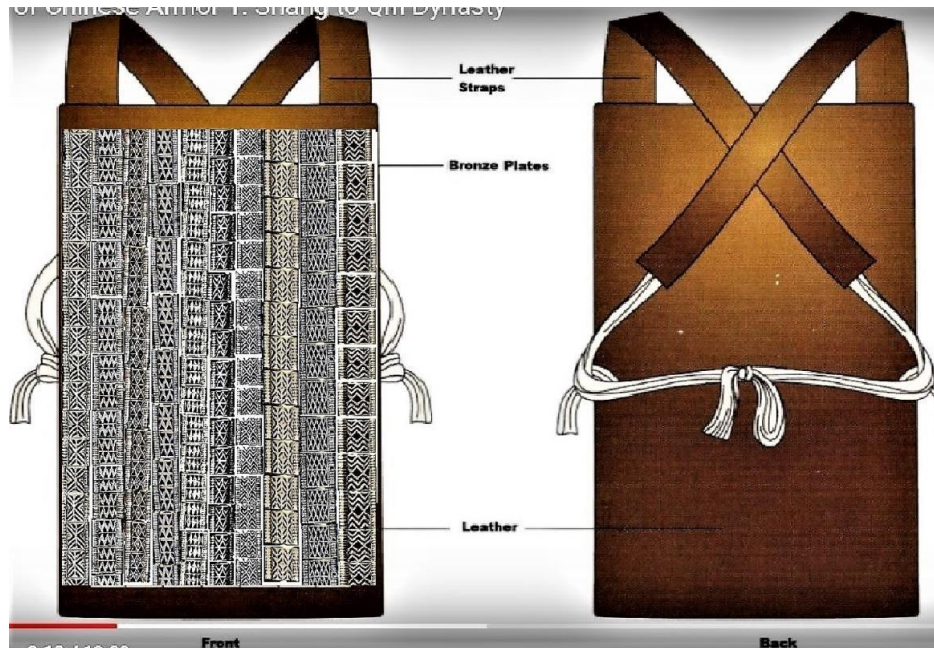


Figure 1169

By adapting the screenshot shown in figure 1168 we depict the authors' mock-up suggestion of how the bronze pieces could have been used and is portrayed in figure 1169. As the symbols were almost certainly very powerful, the presence of such a piece could have been awe-inspiring. The method of attaching the pieces to clothing was covered extensively in Part 3 - Mycenaean, Minoan and Austrian.



Figure 1170. <https://www.youtube.com/watch?v=JvmFAoNJS68>

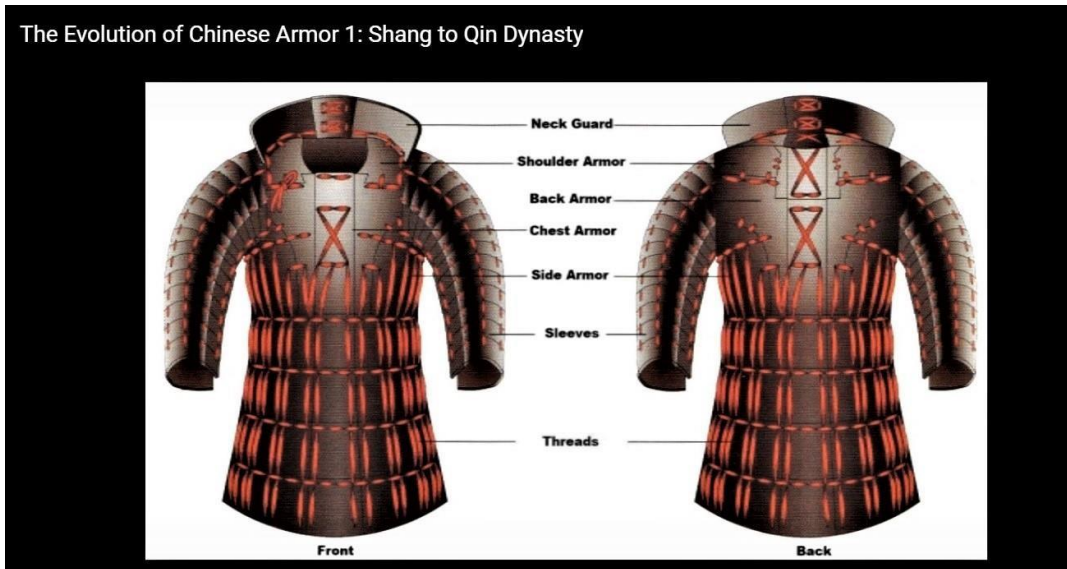
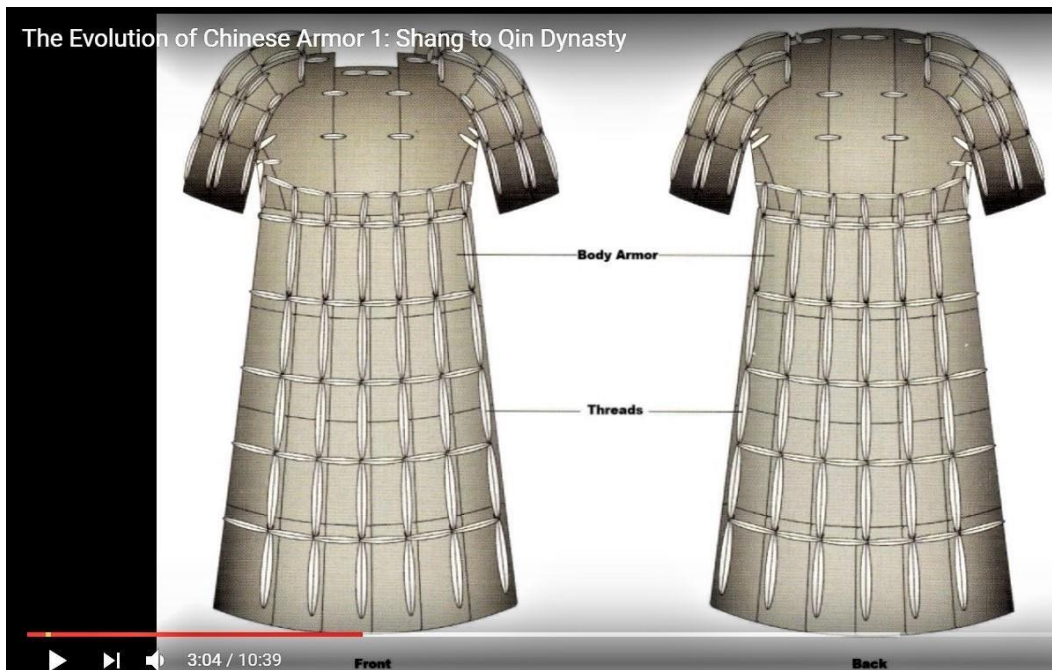


Figure 1171. Warring States armor. <https://www.youtube.com/watch?v=JvmFAoNJS68>



As can be seen from the above, threads were used to link the armor together.

Figure 1172. Spring/Autumn armor

<https://www.youtube.com/watch?v=JvmFAoNJS68>



Figure 1173



Figure 1174

The coat of stone armor (figure 1173) was found in the tomb of the first Qin emperor, Qin Shihuangdi (d. 221 BCE), and is currently on display in the Museum of the Terracotta Warriors in Xian, Shaanxi, China. It may have been a burial or ceremonial suit for an important person
Credit: Xinhuanet. <https://archaeologynewsnetwork.blogspot.com/2013/12/new-stone-armorfound-in-tomb-of.html#psWx2Ih4mGtoQ9i1.97>

Figure 1174. Spring/Autumn General's armor, <https://www.youtube.com/watch?v=JvmFAoNJS68>



Figure 1175

Detail of the coat of stone armor (figure 1175) which was found in the tomb of the first Qin emperor, Qin Shihuangdi . It may have been a burial or ceremonial suit for an important person.
Credit: Xinhuanet.

Source: <https://archaeologynewsnetwork.blogspot.com/2013/12/new-stone-armor-found-intomb-of.html#psWx2Ih4mGtoQ9i1.97>.

This is an example of armor secured by wire. From the design of the bronze pieces it is apparent that very skilled artisans worked on them and could have been arranged in a similar fashion.

The beads range from 6mm to 50mm showing minute detail. It would not have been beyond their skill range to be able to secure the bronze pieces, typical size 22mmx20mm, with copper wire, or a combination of wire and thread. In our collection we have pieces 30mm x 20mm which may have been a suitable size for the armor.

A singular bronze design: Frog Goddess?

Amongst the one thousand plus pieces of bronze in our possession, only one has the following design. It would appear from our research that it has been fashioned to resemble a frog, and if so much trouble was taken to make it and only one at that, then the symbol must have been quite important. We show the piece below (figure 1176) upright as well as inverted. It is clear that the appearance was to be symmetrical.

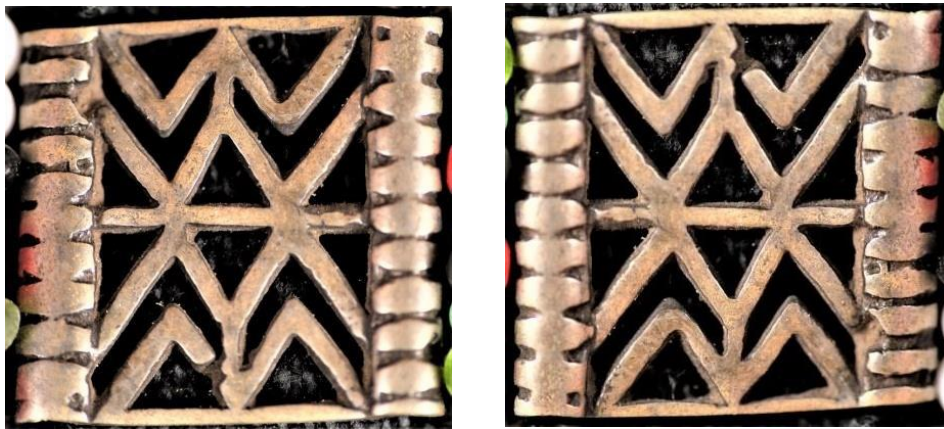


Figure 1176

We noticed similarities with Majiayao 'Frog' pattern pottery c. 2300 BC and Stroked Pottery Culture designs from Bohemia, 4600–4400 BC (figures 1186,1187). The symbol also appears to have been influenced by the 'Blombos' image.



Figure 1177. Majiayao pot. <https://bbs.artron.net/thread-3341581-1-1.html>

From the above example (figure 1177) it can be seen that one side of the jar has the familiar hands or webbed feet whilst the other does not. This was obviously a deliberate act, and the image top left is almost identical to the Chin bronze piece.

Here is an interesting piece concerning this design with a translation via Google:

神蛙纹也称神人纹，这一图案在彩陶上的频繁出现，反映了人们对能在水中行动自如的蛙类的崇拜，也反映了一种先民极其重视生殖与多产的主题。蛙产卵量极大，繁殖、生产能力超强，这种极其多产的动物就成了人们企盼多育和丰收的图腾崇拜。崇拜神蛙，企盼丰收和人丁兴旺，这种习俗在近现代西南地区的许多民族中还仍然得以保存，使得上述观点存在现实性的民族学证据。此外在母系氏族社会，对生殖能力的崇拜和赞美也是对女性的崇拜和赞美。

The frog pattern is also called the god figure. This pattern appears frequently on the painted pottery, reflecting the worship of frogs that can move freely in the water. It also reflects the theme of ancestors who attach great importance to reproduction and prolificacy. The frog has a large amount of eggs, and its breeding and production capacity is super strong. This extremely prolific animal has become a totem worship that people hope for more education and harvest. Worshiping the frogs, hoping for a good harvest and prosperity, this custom is still preserved in many ethnic groups in the southwestern region of modern times, and there is realistic ethnological evidence for this view. In addition, in the matriarchal clan society, the worship and praise of reproductive ability is also the worship and praise of women.

http://blog.sina.com.cn/s/blog_5922c71e0102dr10.html



Figure 1178



Figure 1179

Figure 1178. Majiayao jar. http://blog.sina.com.cn/s/blog_5922c71e0102dr10.html

Figure 1179. Majiayao jar. <http://www.huitu.com/photo/show/20130817/203526057201.html>



Figure 1180. Another Majiayao pot with 'frog' symbol. 彩陶蛙纹壶, Wuhan Museum, http://www.whmuseum.com.cn/WB_collectionl_connect.aspx?id=32

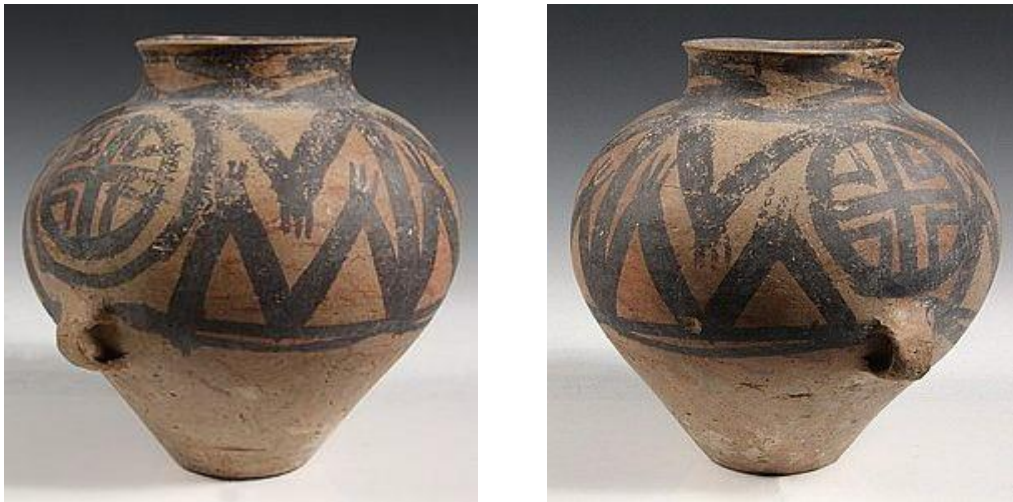


Figure 1181. Majiayao pot with frog and cross symbols. <https://www.pinterest.co.uk/pin/784400460075092058/>

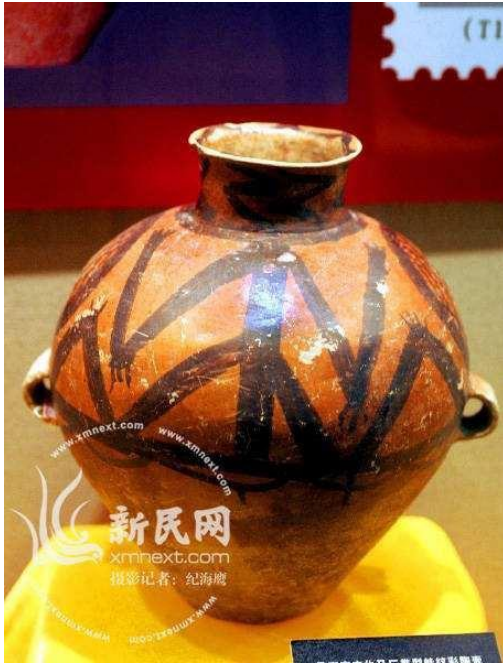


Figure 1182



Figure 1183

Figure 1182. Majiayao jar from Liuwán 4000 多年前的青海柳湾彩陶上海展(组图) Qinghai Liuwán Painted Pottery Shanghai Exhibition more than 4,000 years ago. http://news.163.com/06/1124/18/30ND3ISA0001124J_2.html
Figure 1183. Frog symbol from the ninth millennium BC, Poland. Note what we refer to as 'the mountain' symbol <https://aratta.wordpress.com/the-frog-in-history/>

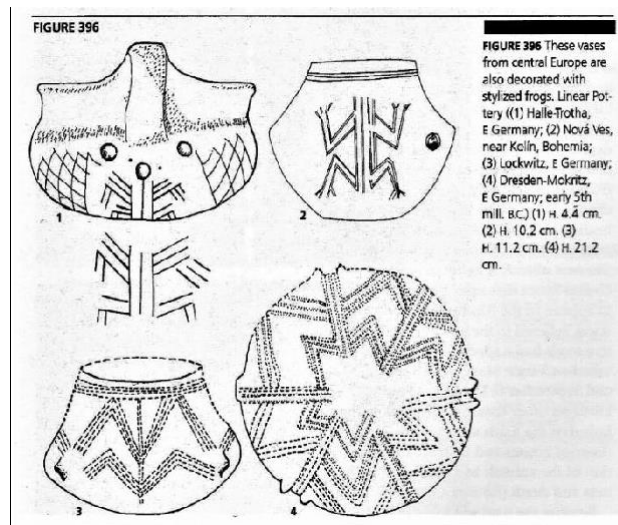


Figure 1184. Excerpts from Marija Gimbutas' *Language of the Goddess*, 1989. Early fifth millennium BC pottery with frog symbols from the Bohemia area.

FIGURE 395

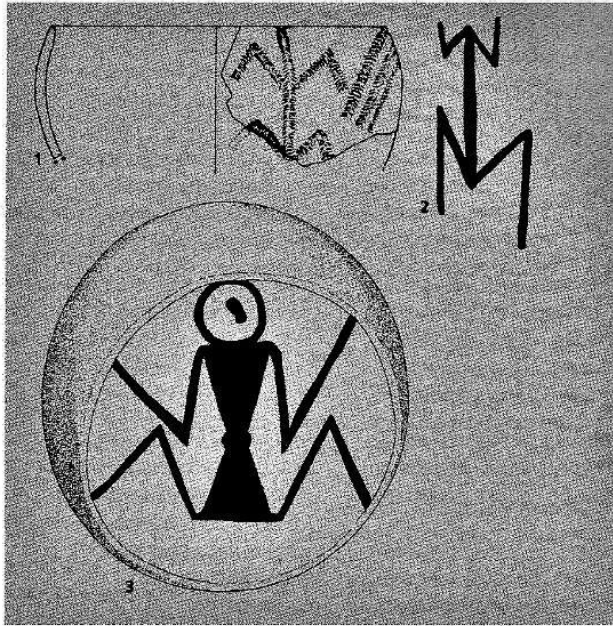


FIGURE 395 Schematic stick-figure frogs occur on ceramics throughout Old Europe. (1) Rocker-stamped jar from the second period of the Impresso culture (Rendina, near Melfi, SE Italy; 1st half of 6th mill. B.C.). (2) Vase painting from a Pre-Palatial tholos tomb (Lebena, S Crete; mid-3rd mill. B.C.). (3) Painting on the base of a Late Minoan III vase (Myrsini, Siteia, E Crete; 14th century B.C.). (2) H. 5.7 cm. (3) H. 5.8 cm.

Figure 1185. Marija Gimbutas' *Language of the Goddess*, 1989. Fig. 1 depicts a frog symbol from Rendina, Italy, first half of the sixth millennium BC

The Archaeology of Bohemia 2 Neolithic

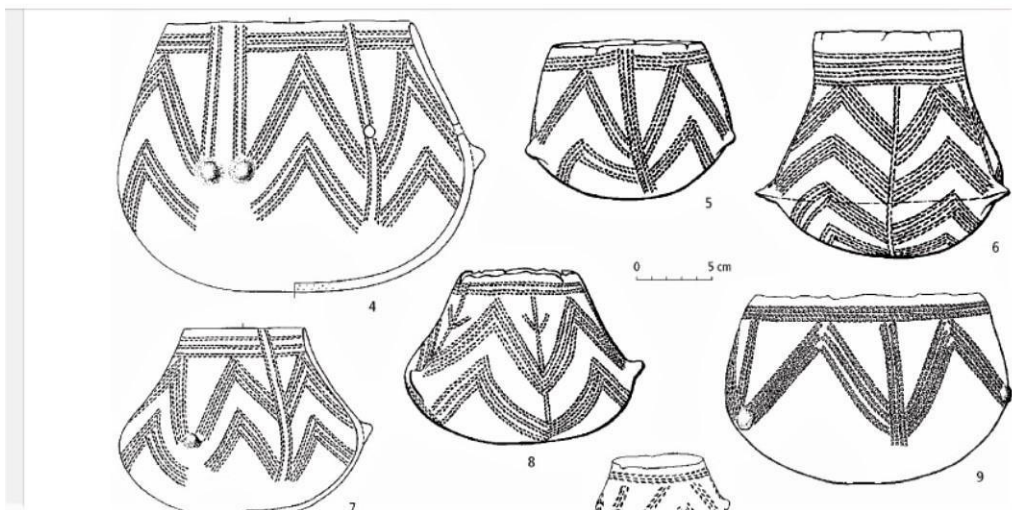


Figure 1186. Stoked pottery 4600–4400 BC from *The Prehistory of Bohemia 2 The Neolithic*, Ivan Pavlů (ed.) Marie Zápotocká 2013

The Frog and Frog Goddess

The significance of the fish and frog to regenerative symbolism derives from their aquatic environment. Their habitat paralleled the uterine amniotic fluid, that watery realm where regeneration takes place. The annual spring appearance of the frog and toad and their close resemblance to the human fetus further emphasize their regenerative associations.

Neolithic art features myriad female and frog hybrids. At many Neolithic sites, artisans carved small frog-shaped goddesses from green or black stone and set them in relief on vases and temple walls (Figs. 17 and 18). The presence of the goddess' vulva accentuates the regenerative force of these images. Neolithic pottery often stresses schematized frogs.

Abbreviated into a hieroglyph, the frog or toad became an M sign. Large vases from the Vinca and Tisza cultures, dating to around 5000 B.C., bear an M sign on the neck above the goddess' human countenance. Certain peculiar handles cannot be human arms, but instead resemble frog legs (Fig. 19a-b). Frog-leg handles became a conventional feature that identified the frog goddess on anthropomorphic vases.

Marija Gimbutas, *The Living Goddesses*, 1999



Figure 1187. Stroked pottery. Part of a decorated container from the Kolín site, Czech Republic. Note the 'frog goddess' pattern. <http://www.archaeo3d.com/en/lide-z-dlouhych-domu/artefakty/keramika/>

The Chin Bronze Belts and their possible manufacture in China

A good explanation of the capabilities of Chinese bronze making is given below: A copper, zinc, tin alloy may have been used to make the bronze pieces. They are non-magnetic. The author of the piece below believes bronze working in China to have developed there independently. If our findings of Proto-Indo-Europeans arriving in Liaoning prior to 3500 BC, the origins of bronze working in China may well be a source of contention.

Bronze in China: The earliest well-dated bronze object in China is a knife from Gansu province, from about 3000 BC; it had been cast in a mold. There are smelting sites nearby with malachite ore, slag, and corroded copper. Somewhat later, the Qijia Culture of north China was producing a good number of copper and bronze awls, knives, sickles, and adzes, using casting techniques followed by cold-hammering to harden them. In 1976 copper and bronze artefacts were found in Gansu province associated with the Xia Dynasty, which on other evidence is dated from 2200 BC to 1760 BC. All the evidence, then, suggests an independent Chinese discovery of bronze (tin is comparatively abundant in China). Bronze became widespread in the central plain of China in early Shang times. The Shang dynasty ruled from its capital at modern Anyang, in Henan province, for 300 years until its collapse in 1122 BC. Anyang was close to the most abundant deposits of lead, copper, and tin in China, and bronze-making apparently spread from here to the rest of China. Shang metallurgists had discovered that a small percentage of lead in the bronze made casting easier. They produced ceremonial cast bronze cups and bowls of all sizes up to massive cauldrons, intricately decorated with raised or incised relief designs taken from nature. The largest Shang cauldron weighs 875 kg (nearly a ton), and is the largest metal casting from anywhere in the world from the second millennium BC. Casting large objects is not easy. It requires large crucibles and efficient furnaces, and casting the largest objects requires coordinated melting in many crucibles that resembles a modern factory. A problem with the quality of the Shang bronzes is that they are so impressively large, leading some scholars to feel that somewhere else there must

be an earlier bronze-working culture still to be discovered. However, the Shang metallurgical tradition probably arose very quickly from pottery making. The Chinese made porcelain in Neolithic times: pottery kilns found near Xi'an were designed to maintain temperatures as high as 1400 degrees C as early as the 6th millennium BC, more than enough to melt copper. Many of the ritual Shang cups and crucibles, including their ornamental relief, are shaped in direct continuity with earlier clay objects. Shang metallurgists did not use stamping, or engraving, or hammering in their work: they simply cast their works of art. Probably, then, the Shang used casting methods almost exclusively because their pottery industry was so advanced they could readily reach the high sustained temperatures that made smelting and casting comparatively easy. The Western tradition of hammering metalwork and the Chinese tradition of casting it (at least from Shang times onward) are in stark contrast. The Chinese became more sophisticated bronze metallurgists than their Western counterparts. The famous terracotta army of the Emperor Qin, made for him about 220 BC and buried with him, have weapons that are basically bronze, but they have been deliberately alloyed with metals such as titanium, magnesium, cobalt, and so on, no doubt after empirical trial and error, to give superior hardness and penetrating power. This weaponry, combined with technological advances such as fast-loading crossbows, united China under the Qin dynasty and defended it against invaders.

Other Chinese bronzes, designed for other purposes, have lead alloyed to improve casting fidelity and to make polishing easier. These alloys were used to make bronze mirrors and bells. In 1978, 64 bronze bells were found in the tomb of a nobleman named Yi, dating from about 450 BC. The largest bell weighs 203 kg (about 450 pounds), and is 1.5 m (over 4 feet) tall. The bells together allow a complete 12-tone scale to be played by a team of five to seven musicians.

Overall, the Chinese bronze industry was very large: an enormous mine dating from around 400 BC has been excavated at Tonglushan: it covered an area of 2 km x 1 km, and had deep timbered underground galleries.

<http://mygeologypage.ucdavis.edu/cowen/~gel115/115ch4.html>

In 1991 we also purchased some strings of very old bronze bells from the Chin. We have now been able to identify similar items to the bronze age of China, and in the first example below (figure 1188) from the Xiajiadian culture. Similar images are hard to come by.



Figure 1188. Xiajiadian bronze, http://www.im-eph.com/gb/slwh/2008-02/25/content_3046.htm



Figure 1189. Chin bronze bells

To indicate the significance of the bronze bells to the Chin we quote the following:

In the south a string of small bells is often tied round the stomachs of small children and similar bells are tied round the ankles of babies.

The Chin Hills' Vol.1, p173, Carey and Tuck, Rangoon 1896



Figure 1190. Chin Bronze Bells. Wear over a long period of time is evident.

The method of securing the Ban Chiang bells (figure 1191) is very reminiscent of the pendants, belts and earrings from Mycenae which were previously shown in figures 63, 64 and 605. This could indicate independent methods, or possibly the spread of these methods by long-distance trade. Throughout our study we give instances where trade links were well established by the Early Bronze Age and probably much earlier.



Figure 1191. Bronze bells from Ban Chiang, Thailand, 3000–1000 BC
<http://selling-antiques-mall.blogspot.com/2015/03/ancient-excavated-prehistoric-bronze.html?pref=pi>



Bronze work c. 2000 BC, Hami Museum Xinjiang

Figure 1192. <http://www.chnshiqi.com/forum.php?mod=viewthread&tid=22677>

Figure 1193. <http://bbs.gwsj.cn/forum.php?mod=viewthread&ordertype=1&tid=288140>

Bronze in the Chifeng area

In order to support our claim that the Chin bronze pieces could have been made in the Liaoning area we reproduce an interesting article from the curator of the Chifeng Museum, translated via Google Chrome. Stated dates are from 2200 BC, long after our claim for PIE of arrival here.

The early culture of Chifeng area occupies an important position in the history of Chinese civilization. When the original bronze civilization heyday, Chifeng area also quietly into the bronze age, this time the civilization here, the academic community known as the summer store culture, about 4200-200 years or so. Here the earliest bronze is about 4200 to 3600 years ago, that is, Xiajiadian lower cultural period, mature about 3000 years ago - 2500 years of the upper store culture period, the equivalent of the Central Plains region Xia Shangzhi Spring and Autumn. Today, these once glorious bronze works of art, Chifeng City Museum collection, quietly lying in the window of the visitors tells the story of one after another through thousands of years of ancient stories.

The reason it is called the summer store culture, because the 1960 Chinese Academy of Sciences archaeological base in Chifeng City, Songshan District, Wangjiadian Township Xiajiadian village excavation, thus, this culture hence the name, and is divided into two layers, is recorded in history of the East Hu and Shan Rong's relics, two cultural additions, it is Chifeng bronze out of the development of mature period, here also become with the Central Plains Xia and Shang Zhou parallel development, and relatively independent of a culture. Xiajiadian lower culture is still in the Early Bronze Age, mainly to the local painted pottery features, bronze casting process has begun to take shape, developed agriculture, ritual system, the rise of the city, has entered the country stage. Xiajiadian store culture is in the heyday of the development of bronzes, handicraft industry is more developed, especially bronze casting industry is more prominent in the number of types and greatly exceeded the previous period, where also found the copper site of this period, and a large number of mines, mining tools and refining furnace, copper fan and other relics, you can smelt more than a

thousand degrees of copper. The previous period of the bronze to weapons, life-based, bronze on the decoration of the special, animal decoration is unique, and accompanied by the Central Plains region of the ritual appliances, creating a unique local characteristic of the bronze culture.

Chifeng area found in the bronze age is relatively small, with bronze ring, cane, small bronze and other small bronze based. More complex to the number of bronze 甗, and it consists of two parts of the retort and the mouth, the mouth of the arc was triangular triangle, flat lip, mouth along the convex, cast two ears, deep abdomen, abdomen under the three foot Ge, abdomen cast a three-string pattern, Ge for the crotch cylindrical foot. This bronze depicts the characteristics of the early bronze here - smelting and casting technology is rough, simple decoration, bronze type is not diverse. At this time the bronze, where not a lot of production and use, the ancestors are still in the pottery-based life, and this time the Central Plains region has entered the Xia Shang, bronze began to use a large number, and widely appear in the national ceremony, Life, production and military areas, compared to the development of bronzes here is relatively slow. And then nearly 1,000 years, a large number of bronze, regardless of the number or the type of equipment are unprecedented prosperity. Chifeng City Museum of the early collection of bronzes to the majority of this period, they have the characteristics of the northern minority grassland, the species on the weapons, horse harness, life appliances. Weapons in addition to our common Ge, spear, arrowheads, there are bronze dagger, bronze edge sword. Nomadic people in the horse on the daily life, sword is not conducive to the line, sent troops to fight is not convenient, which appeared a large number of bronze daggers, very beautifully made. This is similar to the dagger and longer than the dagger weapons are very sharp, but also can carry, become a unique culture of the prairie region. Xiajiadian store culture belongs to the nomadic mountain Rong Rong's remnants, they are more cattle and sheep and other animals, good at riding and shooting, curved blade dagger is willing to immediately marching war, at the same time these real animal ornaments are here people on the nomadic Thriving and passionate. There are many daggers here, although short, but the blade and

the swords ridges are clearly prominent in and the swords are basically decorated with animal patterns. Museum of the serpentine bronze sword, willow-like blade, straight edge, in the ridge from the edge, dentate short lattice, slightly longer handle, handle decorated with feathers in the middle, the first sword cast a hollow three snake wrapped around decoration.

The first song edge sword, sword body slender, blade side of the waves curved edge, tip prominent, columnar swords, hilt cast on the lying double tiger. This type of sword can be considered a bronze age weapons in a major feature. In addition, the museum also collects the same period of animal pattern ornaments and animal modeling horse tools, decorated with horses, cattle, sheep, rabbits, swans and other grassland areas common animal modeling, or based on the shape of these animals made of Some bronze horse horses.

Double sheaths of the device type is more special, double the upper half of the sheath, a long one short, positive is a triangle hollow decoration, the upper part of the scabbard on both sides of a cross, for the fixed scabbard, this type is Other cultures are not seen, more precious.

In addition, other bronzes on the decoration and the Central Plains bronzes on the large number of illusory animal patterns, some lifelike, reflecting the nomadic life portrayal of the birds and beasts to become the ancestors chase the fashion symbol, engraved on the surface of bronze objects or imitation of artifacts, The idea of novel, beautiful and practical, which is another feature of local bronze culture, the Central Plains region is the lack of other cultures.

There are also local characteristics of bronze double cans, four cans, by two or four small copper cans together, covered, convergence mouth, deep abdomen, flat bottom, between the tank and the mouth of the mouth together, like Cooking box used today for cooking. When they were found, there were four traces of carpets, wild onions, etc., which could be used as a kind of ritual device appears in the tomb.

The museum has three pieces of Zhu spoon, are precious cultural relics, spoon convergence mouth, round abdomen round bottom, round handle oblique, handle the first ancestors, the image lifelike. It is generally considered to be a

wine collector, but it is not the ordinary people to use the wine, but the ritual dedicated ritual, the first people who hand copper spoon, the wine sprinkled on the sky, sacrifice gods, mountain gods, ancestors and other things, But also the northern ethnic minority reproductive worship of the empirical.

At the same time, there have been some Central Plains bronze rituals, such as Gui, Ding, shop, 匜 and other characteristics of the typical era of signs. They are well-made, decorated with corrugated surface, Kui Long, Pan Chi and other decorative, better copper, and local bronzes are very different, their appearance is the result of cultural exchanges, rather than local manufacturing. They echo each other with these local indigenous bronzes to showcase the bronze culture here.

From these early bronze view, this time the bronze culture has entered the stage of prosperity and development, mainly to military equipment and living utensils, which is the local nature of the nomadic people are inseparable, although compared with the Central Plains, copper industry development is relatively slow, the production relatively rough, large bronze type rare, artifacts decoration is not very developed, but the shape and decoration of the bronze we can see the local people's own worship, nomadic life-based format and brave and strong ethnic groups. These with the local characteristics of the bronze type, is also a bronze civilization era of a wonderful work.'

(The author is Chifeng City Museum custodian librarian)

http://szb.northnews.cn/nepaper/nmgrb/html/2015-09/15/content_17541.htm

Below are shown some of the bronze pieces in the Museum, reproduced from the above article.



Figure 1194. Bronze artifacts from the Chifeng area

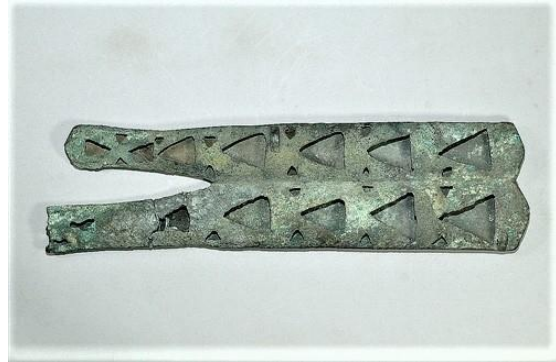


Figure 1195. Artifacts from the Chifeng area including a copy of the newspaper article. The dagger bottom right the shows exquisite detail on close-up.



Figure 1196. Xiajiadian bronze dagger. <http://bbs.sssc.cn/forum.php?mod=viewthread&tid=994358>

Early Bronze in China

To better understand the latest evidence for bronze making in early China, we have taken the following extracts from Chapter 19, *The Appropriation of Early Bronze Technology in China* by Jianjun Mei, Yongbin Yu, Kunlong Chen, Lu Wang 2017 in *Appropriating Innovations, Entangled Knowledge in Eurasia, 5000–1500 BCE*

The geochemical analysis of sediments from Huoshiliang in the middle of the Hexi Corridor in northwestern Gansu has revealed significant occurrences of Cu and As for the period 2200–1700 BC, suggesting the existence of early metallurgical activities in the region (Fig. 19.1.4; Dodson *et al.* 2009; Li, X. *et al.* A copper smelting site was recently found at the so-called Heishuigou site (now also known as ‘Xichengyi’) near Zhangye, again in the middle of the Hexi Corridor. It has been dated to the late 3rd and early 2nd millennia BC (Fig.19.1.5).

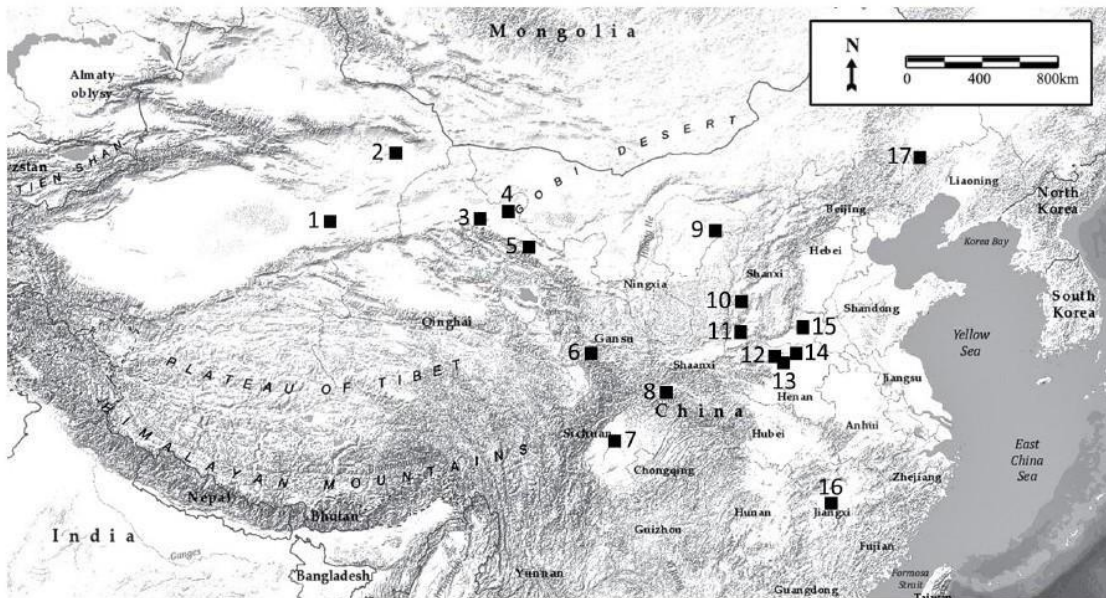


Figure 19.1: The map showing the major archaeological sites mentioned in the text: (1) Xiaohe; (2) Tianshanbeilu; (3) Huoshaogou; (4) Huoshiliang; (5) Heishuiguo (Xichengyi); (6) Mogou; (7) Sanxingdui; (8) Hanzhong; (9) Zhukaigou; (10) Shilou; (11) Taosi; (12) Erlitou; (13) Wangchenggang; (14) Erligang; (15) Yinxu; (16) Xin'gan; (17) Dadianzi.

Figure 1197. Map from *The Appropriation of Early Bronze Technology in China* by Jianjun Mei, Yongbin Yu, Kunlong Chen, Lu Wang 2017 in *Appropriating Innovations, Entangled Knowledge in Eurasia, 5000–1500 BCE*

More than thirty years ago, Ursula M. Franklin (1983, 95) raised the problem of personal ornaments in her discussion of the beginnings of metallurgy in China: ‘When discussing archaeological inventory in China, serious attention has to be paid to the culturally determined absence of personal decoration made of metal.’ Personal gold and silver ornaments, such as earrings and finger rings, also figure among the archaeological finds from the Xiaohe cemetery in Xinjiang and the Huoshaogou and Mogou cemeteries in Gansu. These new archaeological discoveries do not, however, refute Franklin’s observation because we have yet to discover personal ornaments made of metal in the Central Plains of China.... Among the copper and bronze objects found at the Erlitou site (Fig. 19.1.12), the earliest site providing direct evidence for metallurgical production found in the Central Plains, ritual vessels, knives, awls, dagger-axes, arrowheads, and plaques

are the most common types encountered, while personal ornaments such as earrings and bracelets are conspicuous by their absence. The earliest copper and bronze objects found so far in the Central Plains come from Taosi (Fig. 19.1.11), a Neolithic site dated to 2600–2000 BC. They include a bell, a ring, a gear-shaped object, and a fragment. Some scholars suggest that at this time metal was not a part of the regular inventory of prestige goods found at elite burial sites (Liu and Chen 2012, 222–225). Others think differently and believe that metal production and consumption may have already been under the control of the elite (Fang 2010, 75–76).

One of the conclusions in the report by Jianjun Mei et al. was:

There has been increasing archaeological evidence indicating that copper and bronze metallurgy may have been introduced into the Gansu-Qinghai region, north-west China from the Eurasian steppe during the 3rd millennium BC, though the nature and the mechanisms of this process remain extremely obscure.

As to missing personal ornaments we again quote from J.M. Kenoyer's passage from *Ornament Styles of the Indus Valley Tradition: Evidence from Recent Excavations at Harappa, Pakistan, Paleorient*, vol. 17/2 - 1991, provides a good explanation, one that fits in with our theories and testimony produced that the Chin beads were passed down from generation to generation:

On the basis of terracotta figurines of the later Chalcolithic and Early Harappan periods, it is clear that individuals often wore numerous necklaces and pendants. However, large quantities of ornaments as depicted on the figurines have not been found in any burials. This suggests that certain ornaments, presumably the ones which represented valuable wealth or socio-ritual status, may have been passed on to living relatives rather than being buried.

We now reproduce three important maps (figures 1198-1200) from: *Bronze Age Economic and Social Practices in the Central Eurasian Borderlands of China (3000-1500 BC)*: An Archaeological Investigation by Chenghao Wen, 2018, for a PhD in Archaeology at University of California Los Angeles.

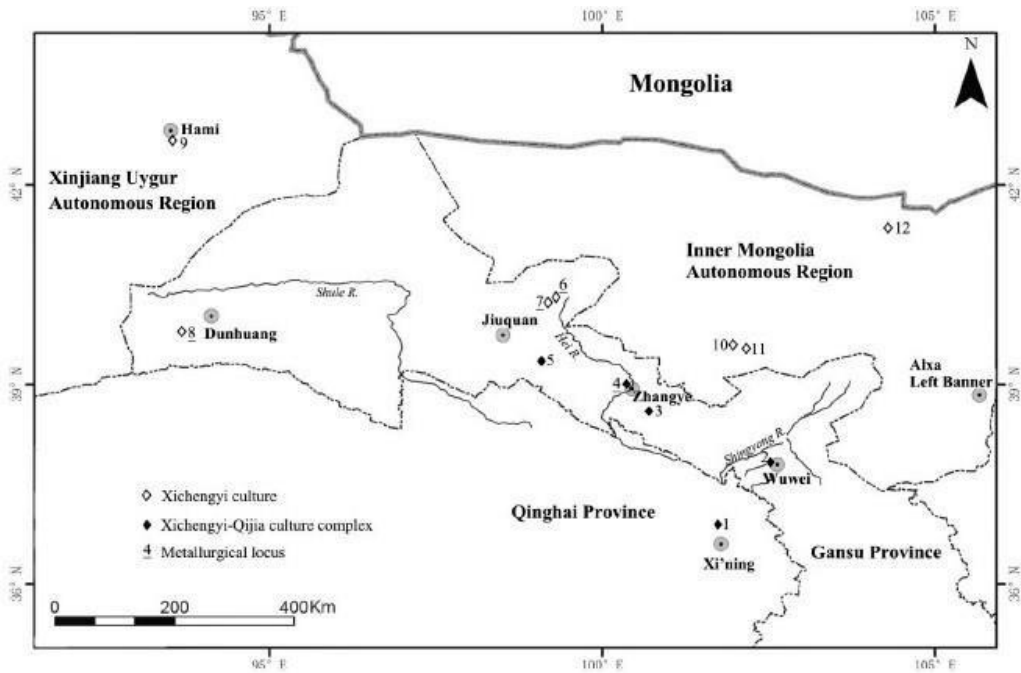


Figure VII.17 Location of Xicheng and Qijia sites in the Hexi corridor

(Qijia sites with sparse Xichengyi markers: 1. Changning 2. Huangniangniangtai; Xichengyi sites with sparse Qijia markers: 3. Wuba 4. Xichengyi 5. Xihetan; Xichengyi culture type sites: 6. Huoshiliang 7. Gangangwa 8. Xitugou 9. Tianshanbeilu 10. Xidabusutu 11. Bilutu 12. Suhongtu. After Chen G.K. 2017)

Figure 1198

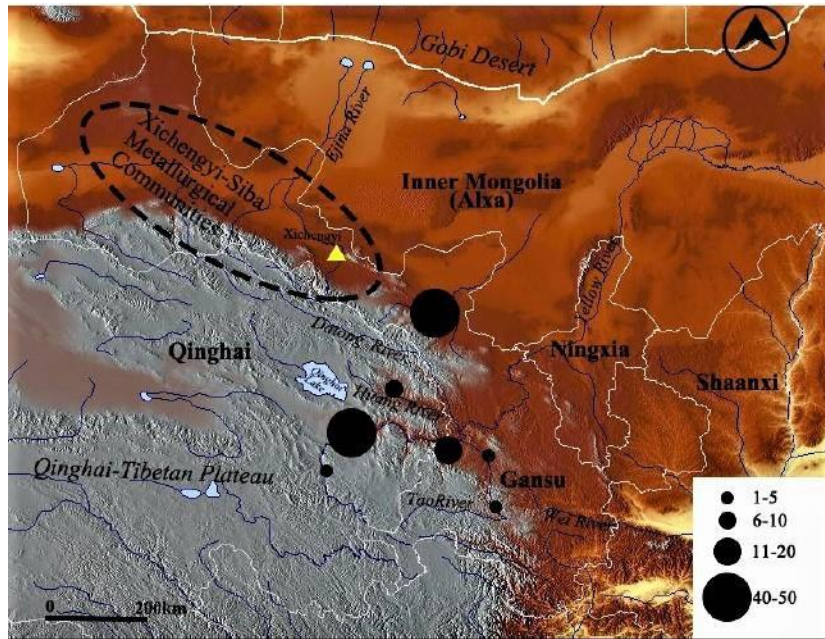


Figure VII.7 Spatial distribution of copper objects in Bronze Age Northwest China
 (The location of the metallurgical center at Xichengyi is highlighted by a yellow triangle)
 (Data source: Liu X.T. and Li W.Y. 2007:13-15, table 3)

Figure 1199

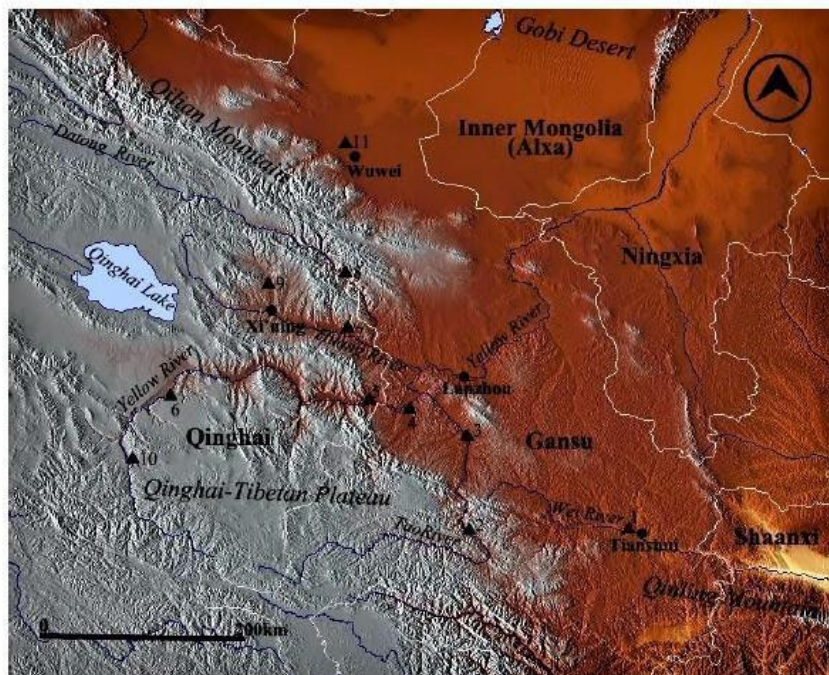


Figure IV.7 Distribution of major sites of the Qijia culture mentioned in the text
 (1. Shizhao-Xishanping 2. Mogou 3. Qijiaping 4. Dahezhuang-Qinweijia 5. Lajia 6. Gamatai 7. Liuwán 8. Jinchankou 9. Changning 10. Zongri 11. Huangniangniangtai)

Figure 1200

Trans-Eurasian exchange and the use of typology to identify trade links

We would like to make some comments on the thought-provoking paper by the late Andrew Skerratt entitled “The Trans-Eurasian exchange” in Victor Mair’s “Contact and Exchange in the Ancient World” 2006. Skerratt states that the appearance and development of metallurgy (the beginnings of copper working) in China, confirmed by Jianjun Mei (2000) and Linduff et al (2000), were generally “best interpreted as an introduction from the West, which in this context means immediately from Xinjiang and ultimately from Western Asia.” As Chinese civilization developed through the second millennium BC, incorporation of techniques from the West such as animal traction and the wheel and metallurgy helped this process.

However, we would take issue with Skerratt’s dismissal of typology as an aid to influence from the West on Chinese cultures. The following passage, taken literally, could well have deterred the likes of us had we not had the courage of our convictions. We believe that our work effectively poses a challenge to his stated views regarding typology.

When early excavators first uncovered pottery of the Neolithic Yangshao Culture (typified by the site of Banpo outside of Xi’an, Shaanxi province, and dated to the fifth and fourth millennia B.C.E.), they were struck by its evident similarity to the pottery of many of the Neolithic cultures of western Asia and southeast Europe, which also used a buff fabric and were decorated, in red, brown, and black paint, in a range of geometric patterns. In particular, they called attention to the pottery of the Tripole (Cucuteni) Culture, distributed along the northern margin of the loess-covered Pontic steppes. Although not extending farther east than Kiev, this location (mirroring that of Gansu, the home of many of the most famous examples of Chinese Neolithic pottery in European museums) was suggestively cited as a possible origin of the Chinese wares, some five thousand kilometers to the east. As recently as 1965, in the second edition of the late Robert Ehrich’s *Chronologies in Old World Archaeology*, Chinese pots were suggestively juxtaposed to west Asian Neolithic wares of the Hassuna and Halaf cultures. The resemblances, are, indeed, striking: but so are the similarities with, say, painted Pueblo pottery from the American Southwest. As with monumental pyramidal

structures in Mesopotamia, Egypt, and Mexico, the comparisons are not meaningless, but they do not imply contact. In the case of the painted pottery, the combination of simple techniques of handmade manufacture (using iron- or manganese-rich slips) with the skeuomorphic transfer of designs based on basketry, in societies at a similar level of organization and technological competence, seems sufficient to explain the often striking congruences of style.

We maintain that our symbols are not based on basketry but are complex for the time. To find out exactly what was being referred to, we obtained a copy of Robert Ehrich's *Chronologies in Old World Archaeology* and refer to the section 'Relative Chronologies of China to the End of Chou' by Kwang-chi Chang of Yale University. The examples given by Chang in the 1965 edition, with added emphasis by Skerratt 2001–2006, are as shown below (figures 1201,1202):

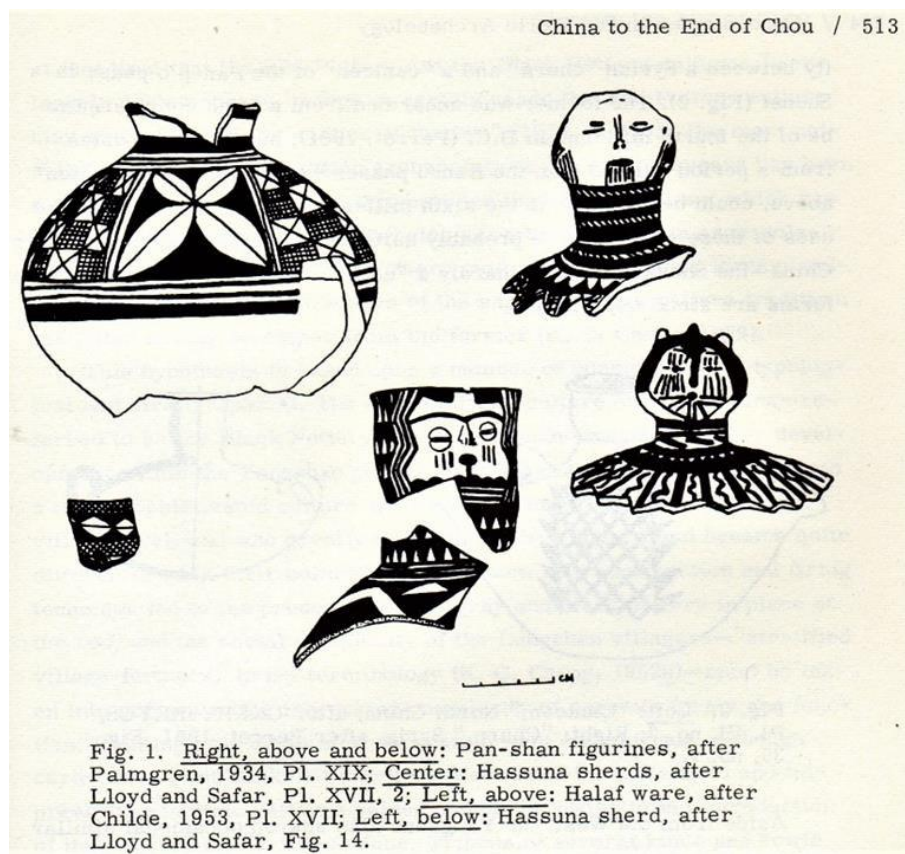


Figure 1201

514 / Chronologies in Old World Archaeology

ity between a Syrian "churn" and a "canteen" of the Pan-p'o phase in Shensi (Fig. 2). The former was unearthed from a tomb considered to be of the fourth millennium B.C. (Perrot, 1961), but the latter dates from a period earlier than the Kansu phases which, as "demonstrated" above, could be as early as the sixth millennium B.C.! To be sure, the uses of these vessels were probably quite different in Syria and in North China—the Shensi piece was hardly a "churn," whatever it was—but their forms are strikingly similar.

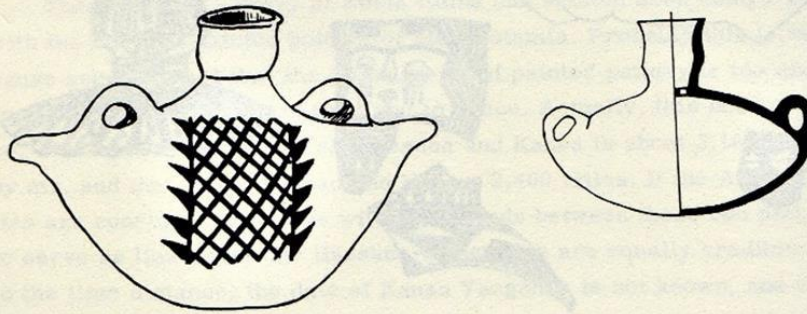


Fig. 2. Left: "Canteen," North China; after CKKHY-KKYCS, Pl. VI, no. 2; Right: "Churn," Syria, after Perrot, 1961, Fig. 39, no. 1.

Figure 1202

It is quite important to understand the drawings above and who prepared them. Kwang-chih Chang was an eminent authority on the subject. He had the following to say:

The "painted pottery" as a ceramic category that has often been used to show the China-West relationships at this period clearly serves poorly, if at all, for such purposes. More useful are some specific decorative designs and vessel forms. Several scholars (Arne, 1925; Andersson, 1943; Bachhofer, 1935; Siren, 1929, vol. I, p. 11) have attempted to compare certain painted decorative motifs on pottery of Anau, Tripolye, and Yangshao, but most of the similarities are such simple and isolated decorative elements that the historical connections suggested by them are rather superficial and dubious. The Yangshao pottery of North China has seldom been compared with the earliest painted pottery of Mesopotamia. Probably this is because scholars feel that the Hassuna-Halaf painted pottery is too distant from the Yangshao both in time and in space. Actually, this need not be so.

The distance between Tell Hassuna and Kansu is about 3,150 miles by air, and that between Anau and Kansu, 2,400 miles. If the Anau-Kansu ties are considered possible with a few finds between these two places to serve as links, then the Hassuna-Kansu ties are equally credible. As to the time distance, the date of Kansu Yangshao is not known, and the possibility remains that it could have been early, as mentioned above. It is necessary to point out these facts, because striking similarities between the Panshan-Mach'ang phase of Kansu and the Tell Hassuna assemblage of Mesopotamia can be found. I want to draw attention to the similarity between the human figure on the neck of a jar excavated from level V at Tell Hassuna and three similar pieces purchased by Andersson in the Pan-shan area (Fig. 1). The use of a human head for the top of the vessel and the tattoo pattern consisting of parallel short strokes on the cheeks are both indicative of artistic or even ritual ideas that could hardly be accidentally shared by two widely separated archaeological assemblages. Another similarity is the use of cowrie shell-shaped designs as the leading decorative motif on urns. Elsewhere I have suggested that these designs at Pan-shan were possible depictions of the female vagina which carried ritual significance (K. C. Chang, 1960). If the Hassuna design has any like meaning, then the connection between it and the one from Pan-shan would be one of both form and meaning, and one that carries weighty historical significance. It cannot be overstressed that the Hassuna and the Panshan-Mach'ang phases are, on the whole, characterized by widely different features of stone industry and ceramics. The similarities mentioned above indicate at most cultural contacts between them, despite the great distance involved, but there is no inherent evidence to suggest the direction of the cultural flow. Whatever the direction, if these similar features resulted from contact, this would mean that the Pan-shan phase could be as early as the sixth millennium B.C., in which the Hassuna has been placed (Braidwood, 1958, pp. 1924-25), and that the Pan-p'o and Miao-ti-kou I phases, which have been stratigraphically demonstrated to be earlier than the Kansu phases, could be even earlier—a conclusion in no way at odds with the current understanding of the North China Neolithic sequence.

Of course, times have moved on, and the enormous contribution of the internet is incalculable. However, Skerratt’s basis for dismissing typology with regard to Western and Chinese artifacts seems very harsh. Examples of the above pottery have been included by us in this study. We propose that similarities of the symbols with painted Pueblo pottery from the American Southwest, dismissed by Skerratt, was directly influenced by contact via migration – see Native American section earlier where identical complex designs are given by us as examples, with possible sea routes aided by ocean currents from China to America shown below (figure 1203).

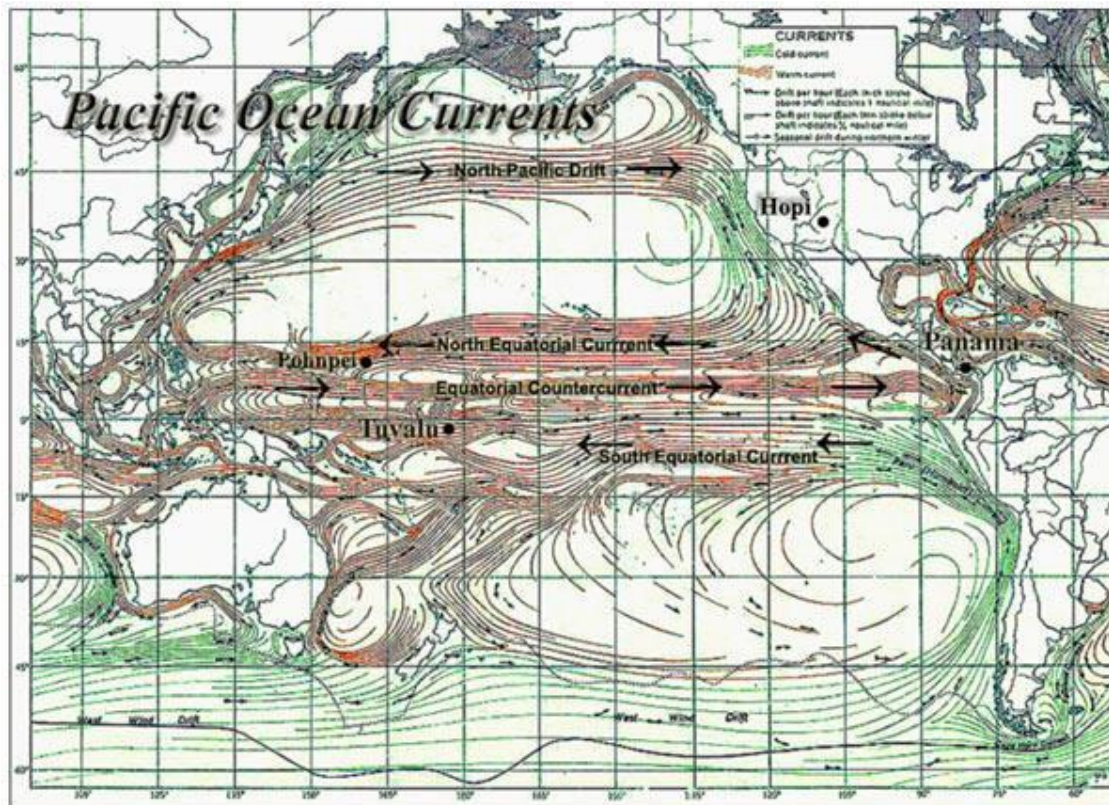


Figure 1203. Possible migration route from China to the Americas
<https://www.ancient-origins.net/myths-legends-opinion-guest-authors/gene-flow-and-counter-current-hopi-sea-voyages-lost-continent-mu>

A passage from 'Beyond Modernocentrism' by Jerry H. Bentley in *Contact and Exchange in the Ancient World* demonstrates the ability of humans traversing vast areas of the Earth at very early ages. According to him, trade networks were evident as early as 28,000 BC.

Homo habilis dispersed similar styles of Oldowan tools across hundreds of kilometers as early as two million years before the present, indicating widespread networks of communication and exchange (Schick and Toth 1993).

It is now clear that *Homo erectus* used water craft to make water crossings of at least 25 kilometers as early as 900,000 years before the present (Morwood 1998; Morwood et al. 1998, 1999).

From about 30,000 to 20,000 years before the present, extensive communication and exchange networks facilitated the spread of distinctive artistic and tool styles to lands stretching from western Europe to central Russia (Gamble 1982; Pfeiffer 1982).

Knowledge of bronze metallurgy spread rapidly throughout much of Eurasia and north Africa after 4000 B.C.E., and uneven deposits of copper and tin led to the emergence of trade networks stretching over thousands of kilometers (Chernykh 1992).

Early interaction between peoples of different societies was by no means a monopoly of the eastern hemisphere: communication and exchange networks facilitated both trade and the spread of cultural traditions in the Americas as early as 7000 B.C.E, (and Baugh 1993; Baugh and Ericson 1994).

Long-distance interaction took place also in early Oceania: between 1500 and 500 B.C.E., Lapita peoples maintained a vast trading network stretching over some 4,500 kilometers of space in the Pacific Ocean from New Guinea and the Bismarck Archipelago to Samoa and Tonga (Kirch 1997).

Jerry H Bentley, *Beyond Modernocentrism, Contact and Exchange in the Ancient World*, ed. Victor Mair 2006



Figure 1204

Figure 1204 is a map of the Silk Road c. 3500 BC from Andrew Skerratt's 'Trans-Eurasian exchange' paper. We propose that the route as laid out is roughly the same as ours but that by this time the Proto-Indo-Europeans had penetrated much further into China – as far as Liaoning.

We take heart (as should students and others) from the following observation by Victor Mair:

Fortunately, political trends and disciplinary fashions wax and wane, but hard evidence remains. While the dedicated researcher who focuses on material, biological, and linguistic data may be ignored or even scorned for his or her findings because of reigning political and intellectual prejudices, the best remedy is simply to go on gathering data. Eventually, one will accumulate so much evidence that only a fool would deny its existence and implications.

Victor Mair, *Contact and Exchange in the Ancient World*, 2006

Here we show some examples of similar pottery from Cucuteni and Xiajiadian cultures. Although the similarities are evident and can see why the two cultures are thought to influence each other, our findings are that the PIE took more important symbols with them to China. We do not find the following patterns as conclusive evidence of trans-Eurasian exchange. For example, the Cucuteni jars could be two thousand years earlier than the Xiajiadian pottery shown below, with no similar wares between the two locations that we have been able to find. However, we must state that we have not concentrated on this area and stand to be corrected.

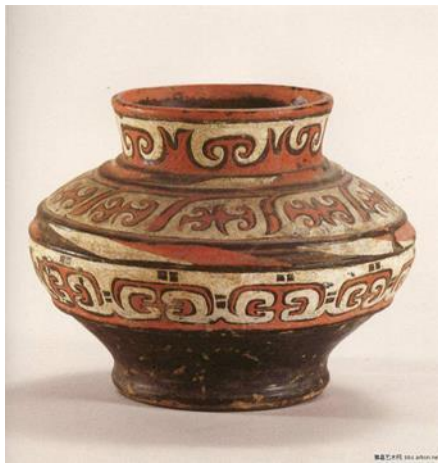


Figure 1205. Xiajiadian pottery 2200–1600 BC. 馆藏夏家店下层文化彩绘陶器欣赏
<https://blog.artron.net/space.php?uid=519065&do=album&picid=27044275>



Figure 1206



Figure 1207

Figure 1206. Cucuteni culture, 4800–3000 BC, https://adevarul.ro/cultura/patrimoniu/cultura-cucuteni-7_51e54be2c7b855ff56445675/index.html

Figure 1207. Cucuteni, <http://travelblog.md/wp-content/uploads/2014/09/travelblogmd-cucuteni-8.jpg>



Figure 1208. Yin-Yang symbols from the Cucuteni culture, <https://historum.com/threads/is-this-the-key-to-understand-the-origin-of-the-early-indoeuropeans.128034/>



Figure 1209. Comparisons of the two cultures. The top left jar appears to be from the Lower Xiajiadian culture, <http://historum.com/ancient-history/128034-key-understand-origin-early-indoeuropeans.html>



Figure 1210



Figure 1211

Figure 1210. Cucuteni/Trypillian jar. <https://www.pinterest.co.uk/pin/505247651927630861/>
Figure 1211. Hongshan ceramic, Chifeng Hongshan Culture Research Association



Figure 1212



Figure 1213

Samples of painted pottery:

Figure 1212. Left: Trypillya culture South Russia, 6000–3000 BC. Right: Yangshao culture China, 5000–3000 BC.

Figure 1213. Left: Trypillya culture South Russia, 6000–3000 BC, Cucuteni, Moldova, 5000–3000 BC. Right: Yangshao culture China, 5000–3000 BC. <http://www.organizmica.org/archive/804/rk3.shtml>



Figure 1214. Xiajiadian culture vessel with 'Leiwen' pattern 小河沿文化\夏家店下层文化
<http://bbs.sssc.cn/thread-2513087-1-3.html>



Figure 1215. Chin bead



Figure 1216. Yangshao head

https://commons.wikimedia.org/wiki/File:Head,_Banshan_phase,_Yangshao_culture,_neolithic_China,_c._2600-2300_BC,_ceramic_-_C3%96stasiatiska_museet,_Stockholm_-_DSC09654.JPG



Figure 1217

Figure 1217 shows a painted ceramic lid in the shape of a shaman's head, known as one of the missing Yangshao artifacts. From Magnus Fiskesjö and Chen, Xingcan. *China Before China: Johan Gunnar Andersson, Ding Wenjiang, and the Discovery of China's Prehistory* (Bilingual, English and Chinese), Stockholm: Museum of Far Eastern Antiquities, 2004.

http://www.chinaheritagequarterly.org/scholarship.php?searchterm=023_yangshao.inc&issue=02

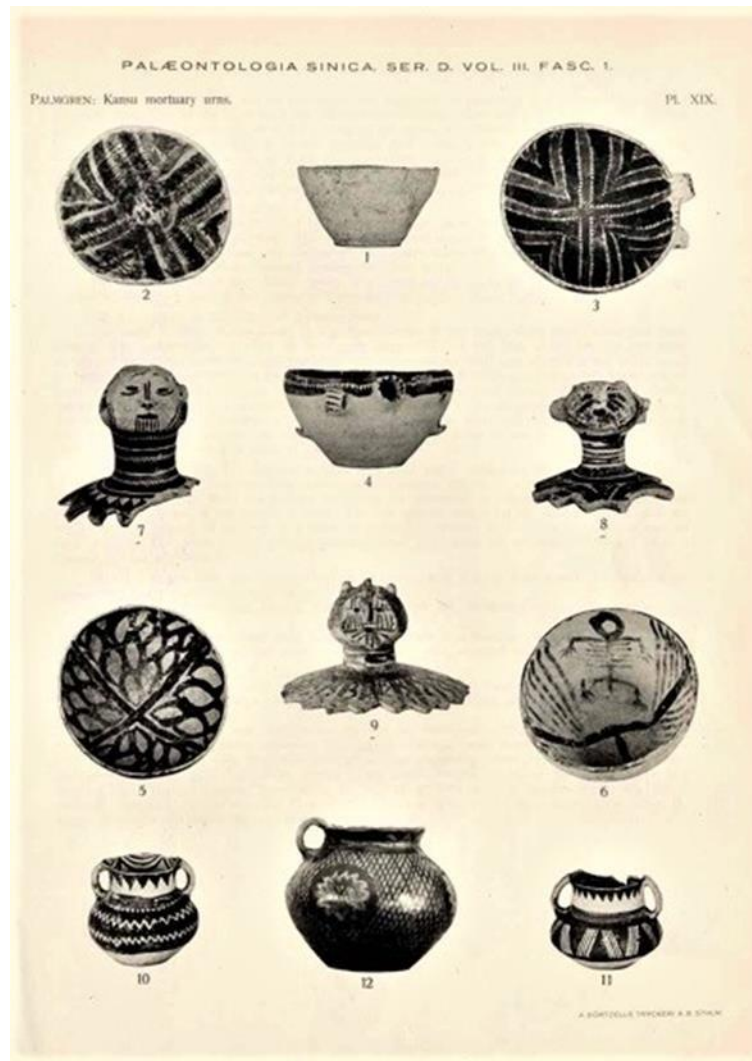


Figure 1218

Figure 1218 is an image from Nils Palmgren's 'Kansu mortuary urns of the Pan Shan and Ma Chang groups', *Palaeontologia Sinica Ser. D.*, Vol. III, Facs. 1. Stockholm: Hasse W. Tullberg, 1934. Note: the familiar cross/chevron patterns are shown as well as the heads given as examples by K. C. Chang in the earlier piece.

http://www.chinaheritagequarterly.org/scholarship.php?searchterm=023_yangshao.inc&issue=02



Figure 1219. Hassuna sherd 6000–5500 BC as depicted in the K. C. Chang paper 'Relative Chronologies of China to the End of Chou' in Robert Ehrich's Chronologies in Old World Archaeology 1965.
<https://foldeskaroly.wordpress.com/osi-kulturalis-gocok/>



Figure 1220

In figure 1220 we see an actual image of pottery from the Nils Palmgren, 'Kansu mortuary urns of the Pan Shan and Ma Chang groups' image on the previous page (figure 1218), which was also shown as an example in the K.C. Chang article. The figure is at the Museum of Far Eastern Antiquities Sweden,

https://commons.wikimedia.org/wiki/File:Ceramic_human_head,_Banshan_tradition,_China.JPG
(Also to be found at <http://collections.smvk.se/carlotta-om/web/object/101107>)

The use of a human head for the top of the vessel and the tattoo pattern consisting of parallel short strokes on the cheeks are both indicative of artistic or even ritual ideas that could hardly be accidentally shared by two widely separated archaeological assemblages. Another similarity is the use of cowrie shell-shaped designs as the leading decorative motif on urns.

K.C. Chang, *China to the End of Chou, Chronologies in Old World Archaeology*
1965

Such eminent figures from the world of archaeology place great emphasis on typology and symbols, providing examples such as shown by us in the preceding pages. We consider that we have used the internet to the best of our abilities to propose that typology and symbols, aside from simple basketry designs, deserve to be considered in this field of research.

The Feng Shui Aspect

The amount of time consumed making the beads and bronze pieces indicates that the symbols are of an auspicious nature. We have considered other aspects of some designs and this section is of a speculative nature. Here we consider the 'cross' bead where we have noticed similarities through the various dynasties and cultures of ancient China.

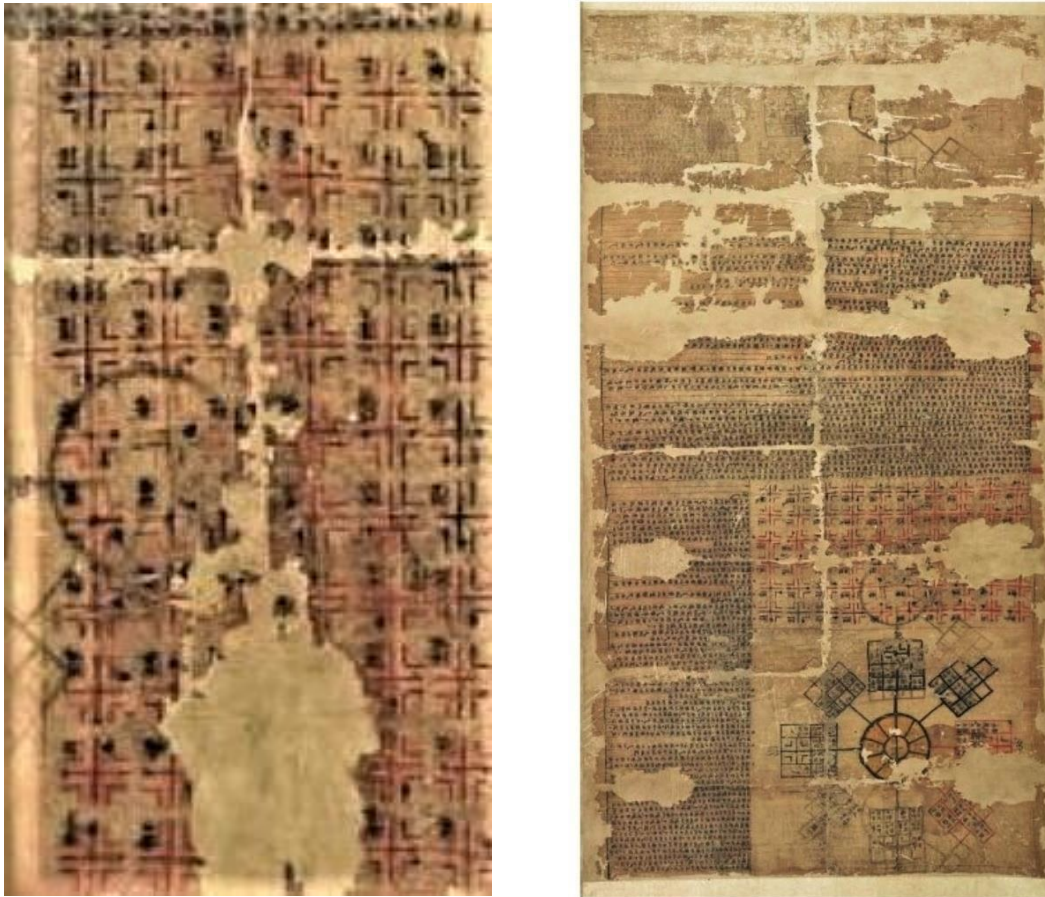


Figure 1221. The Book of Changes 易 <http://book.kongfz.com/78026/469497771/?ref=search>

We referenced 'Representation and Appropriation: Rethinking the TLV Mirror in Han China' by Lillian Lan-ying Tseng, Early China Volume 29 2004 for more on this subject. The following diagrams can be used to compare similarities between Chin bead and bronze pieces. Were they the source of inspiration for the Mawangdui texts?

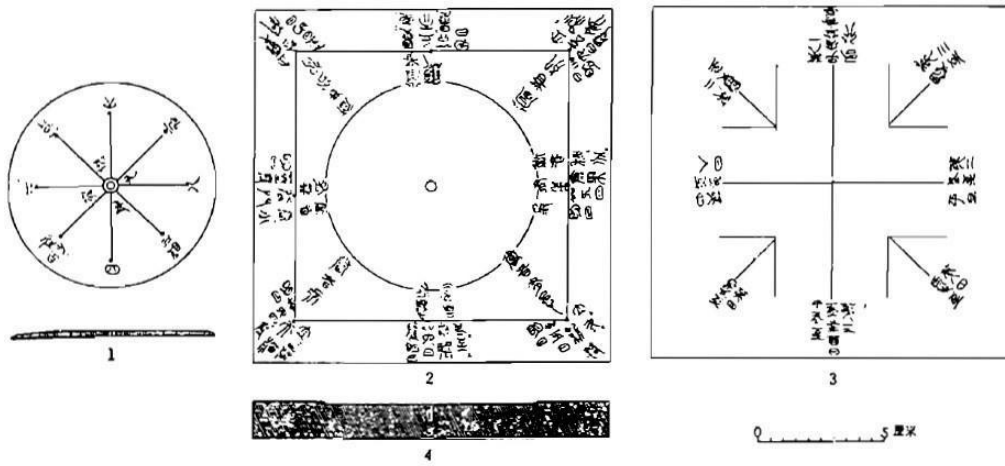


Fig. 27: *Shi* instrument. 173 B.C.E. Lacquer, 8 cm. diam. 2 cm. high. Excavated in 1977 from the tomb of Marquis Ruyin in Fuyang, Anhui. Drawings from *Wenwu* 1978.8, 25

Figure 1222

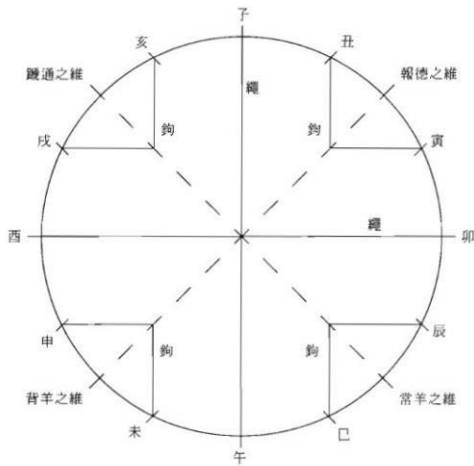


Fig. 26: Diagram showing the scheme of two cords and four hooks.

Figure 1223



Figure 1224

Figures 1221,1223. Images from 'Representation and Appropriation: Rethinking the TLV Mirror in Han China' by Lillian Lan-ying Tseng, *Early China* Volume 29 2004

Figure 1224. Chin beads

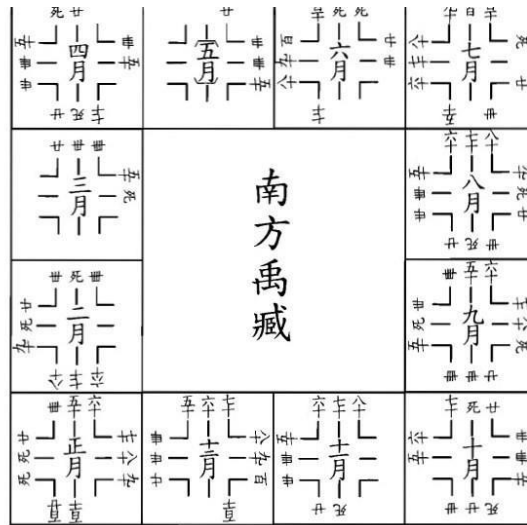


Fig. 28: Detail of *Taichan shu*. Early first century B.C.E. Ink on silk. Excavated in 1973 from Tomb No. 3 at Mawangdui, Hunan. Redrawn after *Mawangdui Han mu boshu*.

Figure 1225. Image from 'Representation and Appropriation: Rethinking the TLV Mirror in Han China' by Lillian Lan-ying Tseng, *Early China* Volume 29 2004

The beads are made from a combination of materials which in the atomic elements tables appear to result in a figure of $Ur=92 + SiO_2=22$ total 114. Gold is 79. According to the Chinese way of thinking, both ancient and modern, the Qi or life-force given off is very high. This could well have drawn the ancients to this particular source to make the beads.

Previously we quoted Surgeon-major A.G.E. Newland in his handbook of 1897: "They are very heavy and firm in texture and sparks can be struck from them with a steel; in fact this is one of the tests of a good bead." This adds to the mystery of the silicified wood used to make the beads.

Could this be linked to the following?

"The mysterious light that is created when you forcefully rub two quartz crystals together is a known property of certain crystals called triboluminescence".

Source: <http://www.primitiveways.com/crystal-light2.htm>

Possibly the ancient Qiang discovered this when rubbing quartz or silicified wood together? An additional attraction to the Qi or energy that could be given from traces of uranium in the fossils? ($Ur = 92 + SiO_2 = 22$; total 122 hydrogen atoms opposed to gold's 79) as well as references to 'dinosaur slayer arrows'.

In 'Prehistoric Britain: The Ceramic Basis' by Ann Woodward, J. D. Hill, 2017, the author comments on the incorporation of 'luminous white quartz' on pottery in the Middle and Late Neolithic:

Luminescence Phenomenon in Antiquity Luminescent phenomena have fascinated mankind since the earliest times. The light from the aurora borealis, glow worms, luminescent wood, rotting fish and meat are all examples of naturally occurring luminescence. It is unfortunate that primitive man has left no written record of his observations but only crude pictographs of the more striking objects of his environment. We cannot but believe that the Neanderthaler knew of many luminescences—the aurora borealis, glow worms, or luminous wood. Perhaps he had seen the glow of luminous bacteria growing on meat or fish. Ever on the alert, a new sight at night must inevitably have caught his attention and directed all faculties into further exploration of the phenomenon. The contrast of light and darkness is so striking that many races have adopted some story of the origin of light in the history of creation. Such stories are found in Bible, Vedas (Sacred Books of Hindus) and Sri Guru Granth Sahib (Holy Scripture of Sikh Religion). History of Luminescence from Ancient to Modern Times by Hardev Singh Virk 2015

The Uncompahgre Ute Indians from central Colorado are one of the first documented groups of people in the world known to use the effect of mechanoluminescence. They used quartz crystals to generate light, likely hundreds of years before the modern world recognized the phenomenon. The Ute constructed special ceremonial rattles made from buffalo rawhide, which they filled with clear quartz crystals collected from the mountains of Colorado and Utah. When the rattles were shaken at night during ceremonies, the friction and mechanical stress of the quartz crystals banging together produced flashes of light which partly shone through the translucent buffalo hide. These rattles were believed to call spirits into Ute ceremonies, and were considered extremely powerful religious objects. Source: https://en.wikipedia.org/wiki/Ute_people



Figure 1226. Statue of Confucius. <https://sonyaandtravis.com/qinghai-huxining-china/>

Shown in figure 1226 is a Statue of Confucius, Qinghai Hu, Xining, China. Here we see our familiar symbol prominently displayed on the statue, which is in the heart of the territory where the Majaiyao culture, and in particular the Machang phase, incorporated the symbols (enlarged image) found on the Chin beads and bronze pieces on many artifacts. The blog which posted the above images also included a map which we show below (figure 1227). It would appear that today's modern travel route could have well been similar to one travelled by the Proto-Indo-Europeans – the Qiang - to their new homelands.



Figure 1227



Figure 1228

The images above are of the Statue of Confucius at Qufu (figure 1228) taken from Michael Wood's BBC TV series 'The Story of China' 2016. Once again, the symbol is represented on the statue. The influence of Confucius is incalculable. Xining distance to Qufu is approximately 1600 km.



Figure 1229

In figure 1229 we make some suggestions as to how the Mawangdui text (figures 1221,1230) could have been laid out using Chin beads. As we have stated, this is pure speculation on our part.

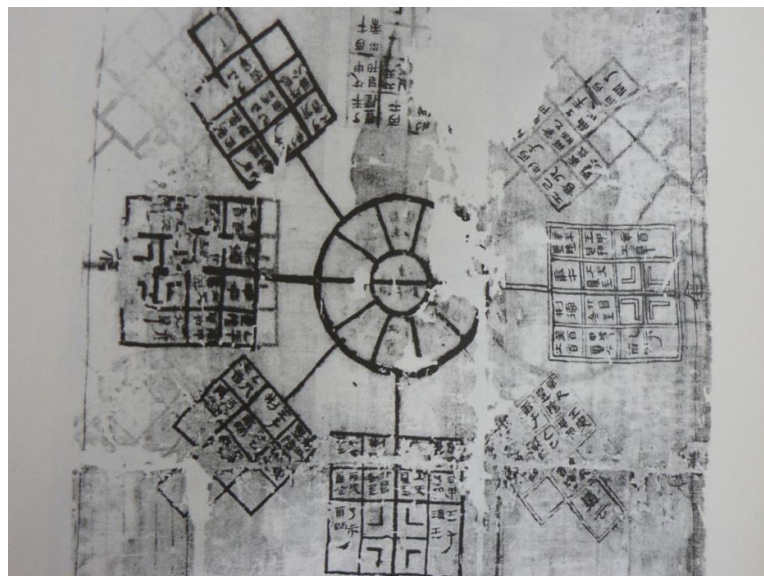


Figure 1230. Mawangdui text. <http://news.163.com/14/1205/04/ACM2IVIA00014AED.html>

We have previously referred to quadracletics with regard to the Egyptian sign for a city ('niwt'). A full set of images regarding this and the TLV Mirrors can be viewed at:

<http://www.flickrriver.com/photos/quadracletics/sets/72157626883093077/> For more information on the Egyptian quadracletics visit: [Quadracletic Architecture– A Panoramic Review by Marten Kuilman](https://quadriformisratio.wordpress.com/2013/07/01/the-sign-of-the-cross/) <https://quadriformisratio.wordpress.com/2013/07/01/the-sign-of-the-cross/>

The following description of the Mawangdui 'Penalty B' texts comes from:

<https://wenku.baidu.com/view/dce97c6f1ed9ad51f01df2ec.html>

马王堆汉墓《刑德》乙篇相关研究 作者：耿广响

帛书是中国古代特定历史时期的一种书籍形式。从其字面上可知，就是指写在丝帛上的文字或文章。自从 20 世纪 40 年代初长沙楚帛书被发现和 70 年代初长沙马王堆帛书被发掘出土以来，已引起海内外学者的极大关注。“大家都称赞，帛书是 20 世纪最有研究价值的出土文物之一，是继汉代孔壁中古文经、清末敦煌经传之后的第三次古文献大发现。”¹至于帛书的产生年代基本认识为最迟也不会晚于春秋时期。经过 1973 年 11 月至 1974 年年初对二、三号墓的发掘，出土了大批的帛书、竹简、乐器、丝织品等许多珍贵文物。今主要对其帛书中的一篇进行简单的探讨。

一、马王堆汉墓竹简帛书出土情况

经过发掘研究一号墓出土竹简总数为 312 枚，筒长约 27.6CM。三号墓中出土遣策竹简总数为 403 枚，医书竹简 200 枚，木牍七枚。其中三号墓出土帛书位于墓 57 号箱漆盒内。总计有两大类：一为写在通高 48CM 宽幅丝帛上，一为通高 24CM 丝帛上。

二、马王堆帛书分类

依《汉书·艺文志》分类：如下表

数类：计 11	《杂书》 《五行》	《杂书》 《五行》 《相马》 《杂》	《五》 《星》	《天文》 《杂》	《出行》 《杂》	《水》 《杂》	《符》 《杂》	《图》 《杂》
方术类：计 5	《五十二病方》 《杂》 《杂》 《杂》	《杂》 《杂》	《杂》 《杂》	《杂》 《杂》	《杂》 《杂》			
地图：计 3	《长沙国南部》 《杂》	《杂》 《杂》	《杂》 《杂》					

Figure 1231. Mawangdui 'Penalty B' texts. <https://wenku.baidu.com/view/dce97c6f1ed9ad51f01df2ec.html>



From Heavenly Pattern Reading (tianwen) and the Origins of Writing by David W. Pankenier: "Stephen D. Houston makes the important point that, "writing is a sequence of steplike inventions," and that "most early script did not expand to fulfill every conceivable function—an anachronistic fallacy—but served, at least initially, very limited needs"; see Houston, "Overture to the First Writing," 11-12."

The Square Beads may well be a 'steplike invention', later evolving into de (virtue) and the Mawangdui Text B Penalty Articles. Using a little imagination, it is quite possible to see these being used to represent both a compass and fulfill the Shang idea of flat earth, four corners and Shang Centre.



LET US IMAGINE THAT THE SQUARE BEAD IS HELD IN THE PALM OF YOUR HAND. BY ALIGNING THE MIDDLE FINGER WITH THE 2 PARALLEL LINES POINTING UPWARDS, AND THEN POINTING THE MIDDLE FINGER TOWARDS THE POLE STAR, THE DIRECTION OF NORTH (AS KNOWN THEN) COULD BE ESTABLISHED. BY HAVING MULTIPLES OF THIS SET-UP, SAY AT 1 METRE INTERVALS, IN A NORTH - SOUTH DIRECTION, BY PLACING STICKS FOR E.G, IT COULD BE POSSIBLE TO CALCULATE LONG LENGTHS OF WALLS, POSITIONS OF GRAVES ETC. WHICH WOULD SATISFY ALL ASPECTS OF FENG SHUI. A PORTABLE COMPASS N-S, E-W.

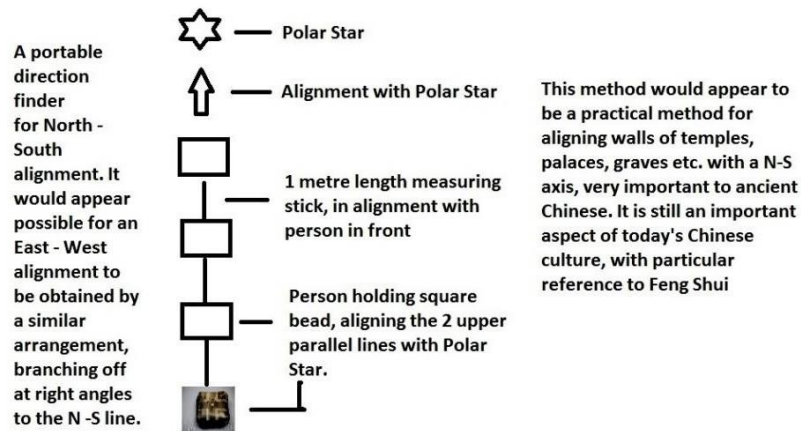


Figure 1232. Authors' compilations at any early stage of our study, before we discovered the PIE links.

Translation of the preceding Chinese text is by Google Chrome and can only give a flavor of the article due to the translation problems which are evident:

Mawangdui "Penalty" B Study of relevant articles: Geng wide range silk book is a book in the form of a specific historical period of ancient China. Literally seen, it refers to the text written on Sibos or articles. Since the early 1940s Changsha Chu silk manuscripts and early 1970s were discovered Mawangdui silk manuscripts were unearthed since, it has aroused great concern of scholars at home and abroad. "Everyone praised, silk book is one of archaeological finds of the 20th century's most research value, is the second hole wall in the Classical Han Dynasty, ancient literature the late Qing Dynasty Dunhuang third after a pass big discovery." 1 As the generation of silk book's basic understanding the latest will not be later than the Spring and Autumn Period. After November 1973 to early 1974 for two or three tomb excavation, unearthed a large number of silk and silk manuscripts slips musical instruments and many other precious artifacts. This mainly simple discuss its books found in the article. First, the Mawangdui silk manuscripts slips situation after excavation unearthed tomb unearthed bamboo slips of the total number of research 312, Jane about 27.6CM. III tomb unearthed bamboo slips total of 403, 200 medical books bamboo, wood slips seven gold. Three tomb is located in the No. 57 silk book box lacquer box. A total of two types one is written on the pass high 48CM wide Sibos, an upper-high 24CM Sibos. Second, the Silk Book classified according to the "Han Dynasty History" category: The following table

There is too much in the article to reproduce here, but for interested scholars they can visit the various websites concerning this subject. As will be gathered by now, trying to use any automatic translation from Chinese to English is one giant headache, which has consumed a vast amount of our time over the years. Some words just defy any translation!

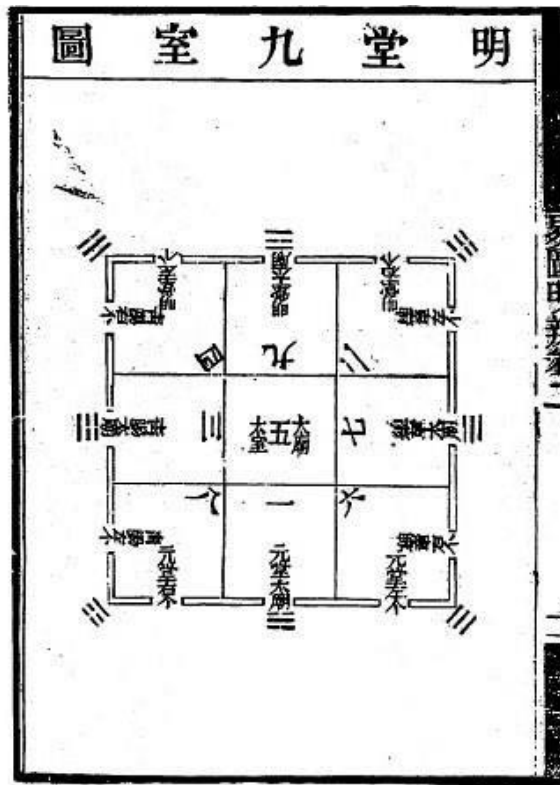


FIG. 8.8. DIAGRAM OF THE NINE CHAMBERS OF THE LUMINOUS HALL. This diagram outlines the standard plan of the *mingtang*, correlating the chambers with magic-square numbers and the eight trigrams associated with the *Yi jing* (Book of changes). Only the central chamber, the "Grand Temple" or "Grand Chamber," lacks a corresponding trigram. This seventeenth-century reconstruction by a famous classical scholar is based on his study of Han cosmographical texts, since no diagrams of the plan of the *mingtang* survived from this earlier period.

Figure 1233

Figure 1233 references part 8 from 'Chinese Cosmographical Thought: The High Intellectual Tradition' by John B. Henderson. The diagram would appear to have a certain resemblance to the Chin bead on the right. This design is one which we propose travelled with the PIE on their journey to China.

Source: https://www.press.uchicago.edu/books/HOC/HOC_V2_B2/HOC_VOLUME2_Book2_chapter8.pdf

Conclusion

During the course of our investigations many questions were raised, and we attempt to answer some of them in our conclusions.

Were the beads made in Northeastern China (today's Liaoning Province)?

Our studies have consistently indicated the origins of the beads to be in Neolithic Northeast China. The petrified wood material used to make the beads, stylistic patterns on pottery, jade and pottery wheels all point to this area. There was a well-trodden jade route from Khotan that ran south of the Tarim Basin to provide the jade for the Hongshan carvings, and possibly the earlier Xinglongwa jade objects. The very close similarities between jade and petrified wood indicate that one or the other would have been acceptable for such high standards of office. The mysterious properties assigned to both materials fits in with the modern-day beliefs of one of the original inhabitants of the area, the Qiang. Additionally, during the Xinglongwa culture (興隆洼文化) 6200–5400 BC they were already making jade ornaments. Many examples of these have been shown by us earlier.

Either there was a local source of jade which supplied the Xinglongwa objects which became exhausted, unlikely but possible, or the jade was indeed imported from Khotan at this very early stage.

Whilst we concentrate on Liaoning due to the Chifeng Hongshan ceramic, it is obvious that without concrete evidence the beads and bronze pieces could well have been manufactured in the Gansu area. Raw materials were already being transported over vast distances such as jade from Khotan to Liaoning. Should the 'fire-stone' quartzite-like silicified wood not be available locally in the Gansu area - and this is not proven by any means - then the fossil could have been imported from areas where they were known to exist.

Thus, as we consider the Proto-Indo-Europeans to have passed along the South of the Tarim Basin 4000–3500 BC, by the time that we propose the beads and bronze pieces were fashioned - c. 2300 BC at a rough estimate - the people known at that time as the Qiang would have been familiar with many areas of China.

Question 1. Could the Northeastern China areas of Liaoning and Inner Mongolia, in particular the Chifeng area, supply the materials that the beads are made from? Answer: Yes.

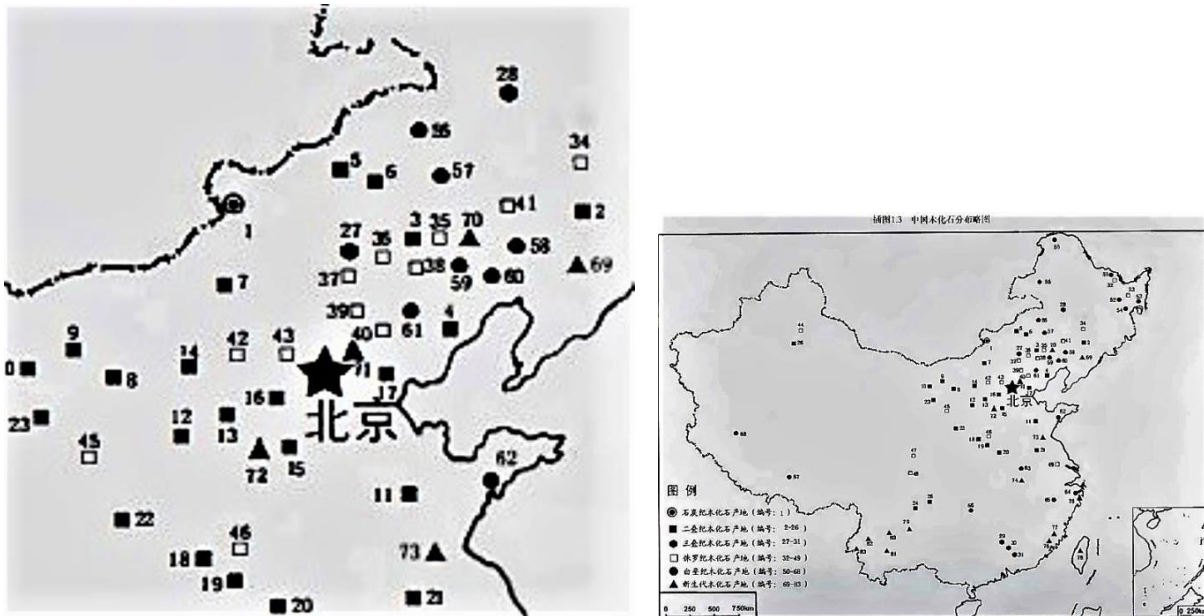


Figure 1234

The Chifeng area is roughly where number 27 is shown on the map above (figure 1234). The map is from the Shenzhen Urban Management Bureau, Botanical Gardens, Shenzhen, Shenyang Institute of Geology and Mineral Resources Ministry of Land.

It is noted that nr. 42 on the large map is not far from the Gansu strongholds of the Majiayao and Qijia cultures. The silicified wood there is quoted as Jurassic and we do not exclude this from being the araucarioxylon species found there and used to make the beads. As far as such ancient fossils are concerned tens of millions of years out of hundreds of millions of years is difficult to narrow down.



Figure 1235. Liaoning province, <https://en.wikipedia.org/wiki/Liaoning>

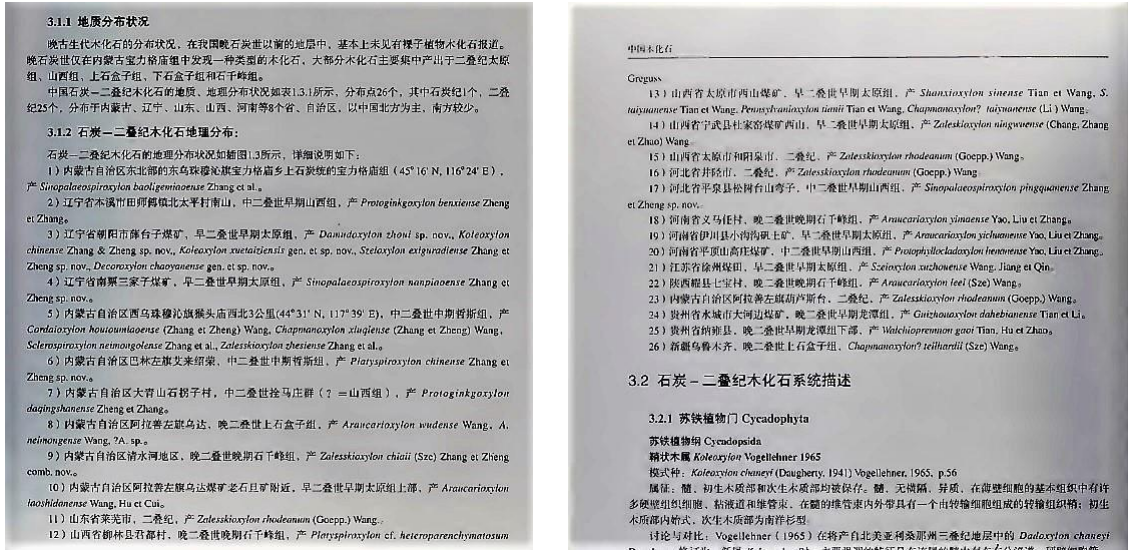


Figure 1236

Using information provided by Shenzhen Urban Management Bureau, Botanical Gardens Shenzhen, Shenyang Institute of Geology and Mineral Resources Ministry of Land (figure 1236). Numbers 1-26 are Carboniferous/Permian petrified wood deposits. Araucarioxylon species are well represented, 358.9–252 .17 million years ago. Triassic petrified wood deposits are represented by numbers 27-31, 252.17–201.3 million years ago.

There are no Triassic species of araucarioxylon mentioned in the study, however this would appear improbable as this would mean a period of nearly 51 million years without this species, before reappearing again in the Jurassic.

Jurassic age petrified wood deposits are shown by numbers 32-49, 201.3–145 million years ago, with the araucarioxylon species also well represented.

Assuming our theory of petrified wood from the araucarioxylon species being used to fashion the beads is correct, then candidates from the Carboniferous/Permian or Jurassic periods are available. NB numbers. 8, 10, 18, 19, 22 are Carboniferous/Permian araucarioxylon deposits.

There are many Jurassic deposits in the area, but the Shenzhen study is unclear to us which numbers refer to araucarioxylon on the map. Our favorite was deposit 8 with araucarioxylon neimongense wang. However, this does not preclude this species from being found elsewhere such as the Qinghai and Gansu areas where the Qiang strongholds were.

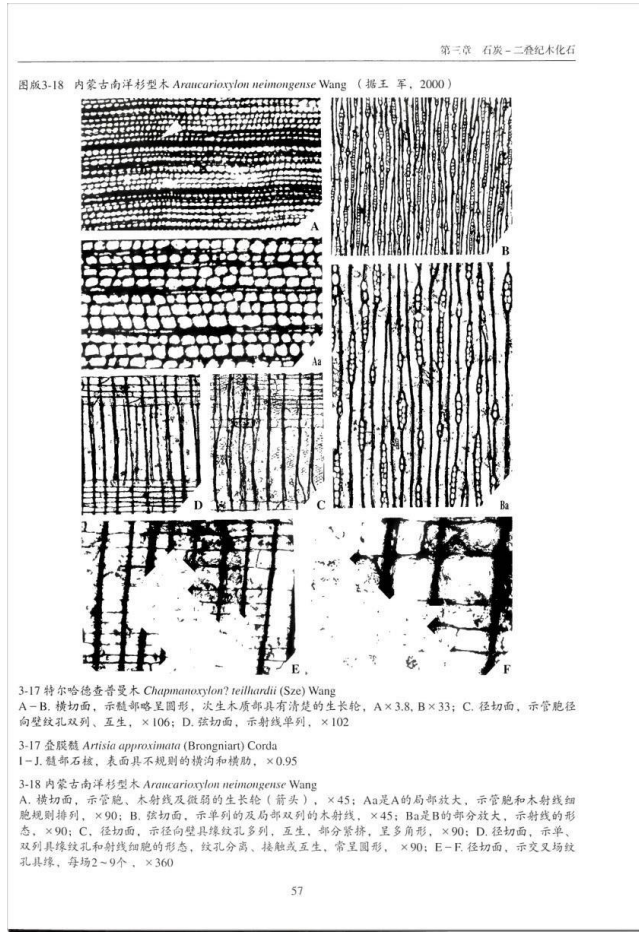


Figure 1237. References to araucarioxylon in the Shenzhen Bureau study

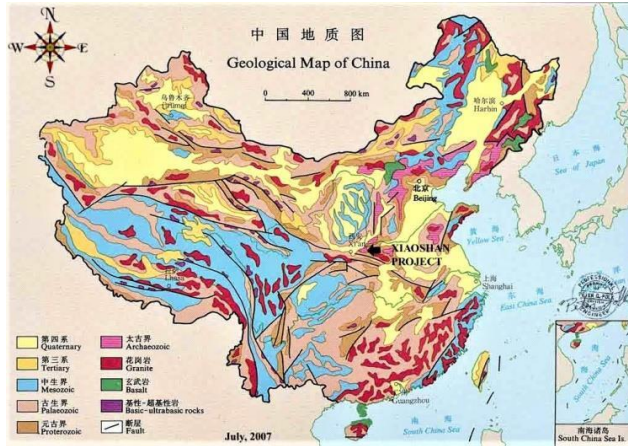


Figure 1238

Fig. 1.11. Liaoning U region, generalized map of principal geotectonic units and location of U deposits/occurrences (1 Lianshanguan, 2 Gongchanling, 3 Saima) (after Guo Zhitian et al. 1990)

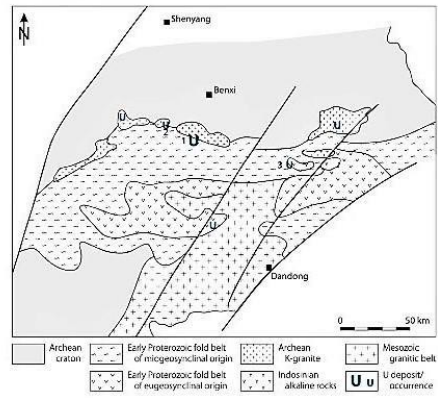


Figure 1239

Figure 1238. Geological map of China. <https://www.gifex.com/detail-en/2011-08-03-14239/Geological-map-of-China.html>

Figure 1239. Liaoning area, Uranium Deposits of the World: Asia by Franz J. Dahlkamp 2009

Previously we have shown many examples of silicified wood from Liaoning. Here we produce a few of them for comparison. In common with some of their counterparts on ebay.com (sellers offering Arizona rainbow petrified wood) the Chinese dealers have at times chosen to photograph the piece in a 'wet' state, which adds to the shine. Compare the authors' 'dry' images (figure 1241) with the Taobao examples (figure 1240).



Figure 1240. <https://s.taobao.com/search?tab=all&q=木化石&sort=price-desc>



Figure 1241

Question 2. Accepting our evidence provided in previous chapters that under a shortwave ultraviolet lamp (254nm) a green or yellowish green color results when uranium traces in the petrified wood glow, does the Liaoning area satisfy the uranium element? A. Yes.

The Liaoning (or East Liaoning) uranium region occupies a northeastern segment of the North China Massif (or Platform), which evolved by multiple tectonic, metamorphic and magmatic events since the Archean. As summarized from Guo Zhitian et al. (1996), the Liaoning region comprises Archean craton segments, Paleoproterozoic fold belts, and Mesozoic tectono-magmatic mobile belts. Uranium Deposits of the World: Asia by Franz J. Dahlkamp 2009

Fig. 1.11. Liaoning U region, generalized map of principal geotectonic units and location of U deposits/occurrences (1 Lianshanguan, 2 Gongchanling, 3 Saima) (after Guo Zhitian et al. 1990)

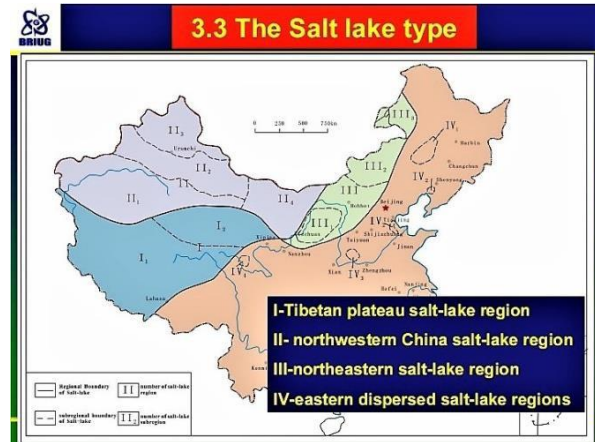
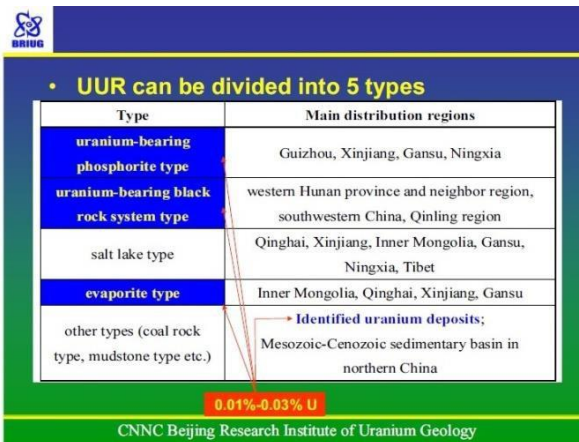
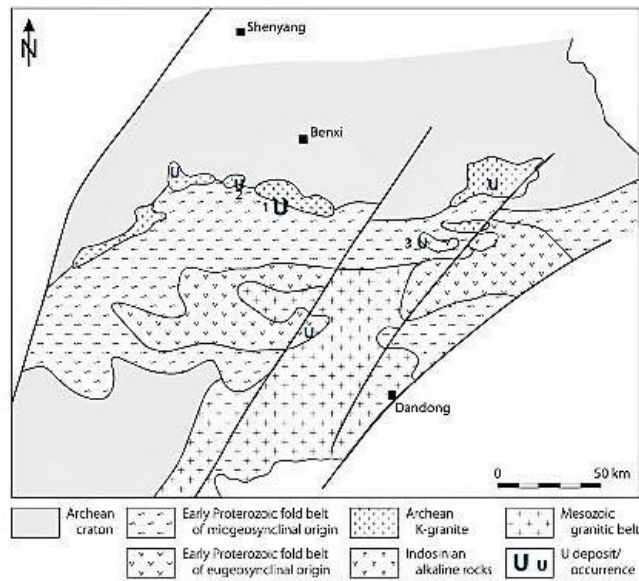


Figure 1242. Areas with uranium deposits in China. Beijing Research Institute of Uranium Geology

Question 3. Does the Northeastern area of Neolithic China indicate that the cultures there could have influenced the designs found on the beads? A. Yes.

The following diagrams are taken from: 'The Earliest Neolithic Cultures of Northeast China: Recent Discoveries and New Perspectives on the Beginning of Agriculture'; Journal of World Prehistory, Vol. 14, No. 4, 2000 Gideon Shelach. They are shown in figure 1243.

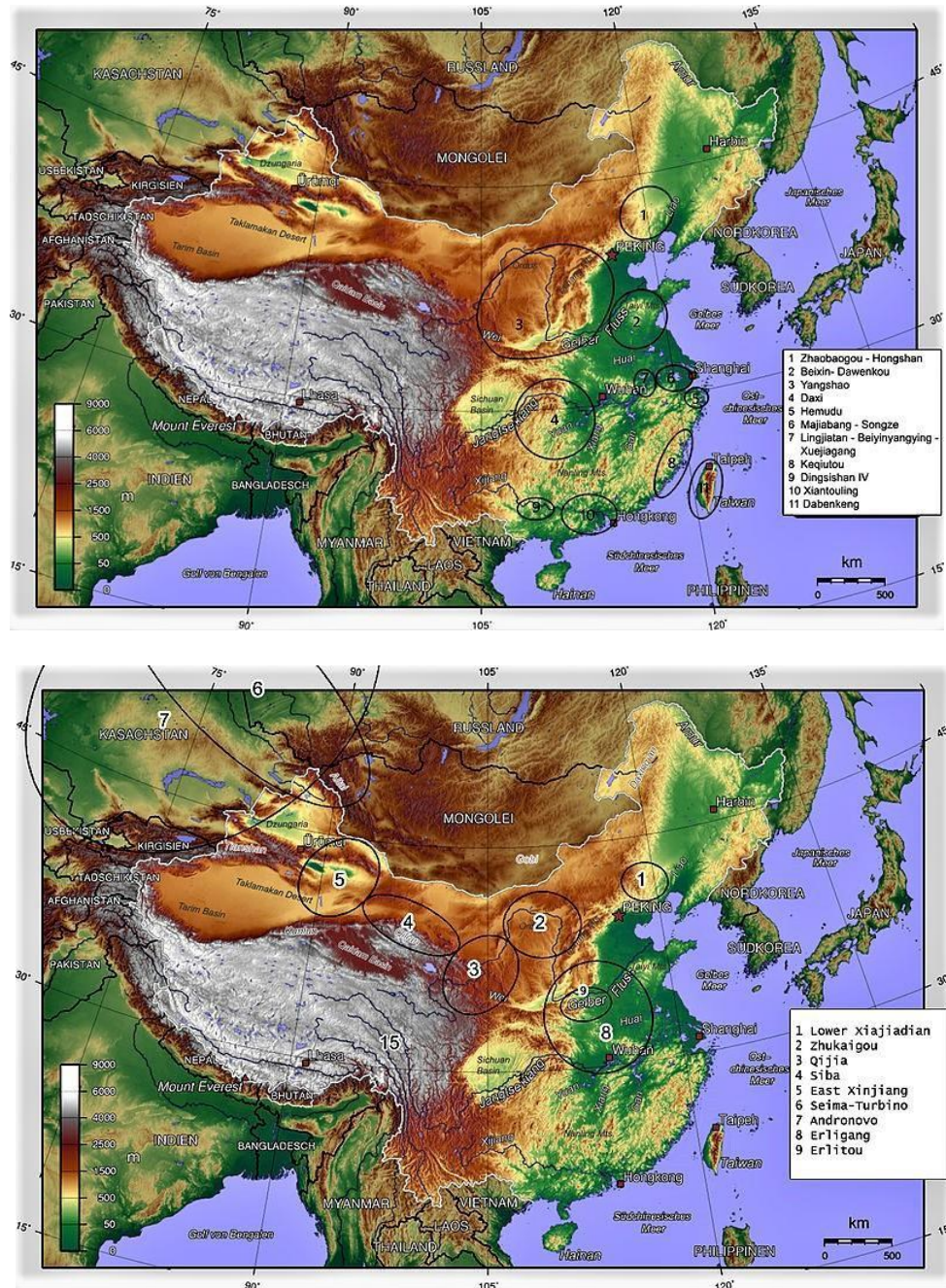


Figure 1244. Two maps from Wikipedia showing different cultures in China, many of which have been covered by our findings

Question 4. Can we provide examples of the Chifeng area cultures influencing the bead designs?
A. Yes

We have provided a vast number of images linked with the beads. It must be noted that some designs on the beads are much better represented by designs from other parts of Neolithic China, but this may be explained by influence as cultures merged and traded.

For example, the Huangguashan site in Southeastern China provided perhaps the best examples of the 'cross' design on pottery spinning wheels, yet Qinghai pottery also provided as near as possible depictions of the 'cross' design. This could be explained by evolving interpretations. Another example of this particular design is shown from the Daxi culture. Many thousands of years pass, yet the same design reappears at different sites all over Neolithic China, some are adopted by the Shang and Zhou Dynasties and prevail until the Warring States period through to the Han period.

It is not necessary to reproduce the same images again, but main contenders are the Chifeng Hongshan ceramic and the jade Hongshan C dragon. The Daxi ceramic ball and all the pottery, the Jianli stamp with the addition of all the jade and bronze ornaments shown throughout the study, although not from the Chifeng area provide evidence that these symbols were found in Neolithic and Bronze Age China.

Question 5: It is known that the ancient Chinese valued jade above all else, but quartz was equally accepted. The quartz-like state of petrified wood appears almost identical to jade. Were there supplies available for the beads to be made in the Chifeng area?

A. Yes. The area is famous for the first jade workings in China. There was an established trade route from Khotan which supplied jade for Hongshan carvings around 3000 BC notwithstanding the fact that the Xinglongwas culture in the Northeast was fashioning jade objects long before this. As shown previously there are multiple sources of Permian to Jurassic age sites providing petrified wood.

The following is taken from The British Museum:

What is Jade?

The English term "jade" is used to translate the Chinese word *yu*, which in fact refers to a number of minerals including nephrite, jadeite, serpentine and bowenite, while jade refers only to nephrite and jadeite.

Chemically nephrite is a calcium magnesium silicate and is white in color.

However, the presence of copper, chromium and iron gives colors ranging from subtle grey-greens to brilliant yellows and reds. Jadeite, which was very rarely used in China before the eighteenth century, is a silicate of sodium and magnesium and comes in a wider variety of colors than nephrite.

Nephrite is found within metamorphic rocks in mountains. As the rocks weather, the boulders of nephrite break off and are washed down to the foot of the mountain, from where they are retrieved. From the Han period (206 B.C.E. - 220 C.E.) jade was obtained from the oasis region of Khotan on the Silk Route. The oasis lies about 5000 miles from the areas where jade was first worked in the Hongshan (in Inner Mongolia) and the Liangzhu cultures (near Shanghai) about 3000 years before. It is likely that sources were known that were much nearer to those centers in the early periods and were subsequently exhausted.

Worn by kings and nobles in life and death "Soft, smooth and glossy, it appeared to them like benevolence; fine, compact and strong - like intelligence" — attributed to Confucius (about 551-479 B.C.E.) Jade has always been the material most highly prized by the Chinese, above silver and gold. From ancient times, this

extremely tough translucent stone has been worked into ornaments, ceremonial weapons and ritual objects. Recent archaeological finds in many parts of China have revealed not only the antiquity of the skill of jade carving, but also the extraordinary levels of development it achieved at a very early date.

Jade was worn by kings and nobles and after death placed with them in the tomb. As a result, the material became associated with royalty and high status. It also came to be regarded as powerful in death, protecting the body from decay. In later times these magical properties were perhaps less explicitly recognized, jade being valued more for its use in exquisite ornaments and vessels, and for its links with antiquity. In the Ming and Qing periods ancient jade shapes and decorative patterns were often copied, thereby bringing the associations of the distant past to the Chinese peoples of later times.

The subtle variety of colors and textures of this exotic stone can be seen, as well as the many different types of carving, ranging from long, smooth Neolithic blades to later plaques, ornaments, dragons, animal and human sculpture.

The British Museum.

Source: <https://www.khanacademy.org/humanities/art-asia/imperial-china/neolithic-art-china/a/chinese-jade-an-introduction>

In the book, "Chinese Jade Carving", written by Prof. S. Howard Hansford 1950 he expressed his opinion regarding the earliest emergence of Hetian jade (Khotan jade) in China at the end of Chapter III - Sources of Supply of the Jade Stone, p. 56 as follows:

In the light of all these considerations I feel that the weight of evidence is now in favour of Khotan being regarded as the source of the material of the most ancient Chinese jade carvings. There is a passage in the Book of History (Yu kung, Tribute of Yu), in which certain gem stones, believed to include jade, are mentioned as articles of tribute from Yung Chou. This is given as the name of a province of the kingdom of the Great Yu, founder of the legendary Hsia Dynasty, and is supposed to have corresponded to modern Shensi and parts of Kan-su. The passage has been adduced as testimony that these provinces were actually sources of production of jade. I believe they acquired this reputation just as Yun-nan did in recent times, and that they were merely the channel through which Khotan jade entered China in the course of a trade carried on from immemorial ages along the fringe of the Taklamakan Desert and through the Kan-su corridor.

Neolithic jade: Hongshan culture

It was long believed that Chinese civilization began in the Yellow River valley, but we now know that there were many earlier cultures both to the north and south of this area. From about 3800–2700 B.C.E. a group of Neolithic peoples known now as the Hongshan culture lived in the far north-east, in what is today Liaoning province and Inner Mongolia. The Hongshan were a sophisticated society that built impressive ceremonial sites. Jade was obviously highly valued by the Hongshan; artifacts made of jade were sometimes the only items placed in tombs along with the body of the deceased.

Major types of jade of this period include discs with holes and hoof-shaped objects that may have been ornaments worn in the hair. This coiled dragon is an example of another important shape, today known as a "pig-dragon," which may have been derived from the slit ring, or jue. Many jade artifacts that survive from this period were used as pendants and some seem to have been attached to clothing or to the body.

Question 6: Are we satisfied that the Qiang people inhabited the Northeastern areas from Neolithic times? A. Yes.

We propose that the original migration was from the Proto-Indo-Europeans, who eventually became known as the Qiang.

To clarify the Qiang element of the population and movements in Neolithic China, we quote from an extensive investigation carried out by Chuan-Chao Wang, Ling-Xiang Wang, Rukesh Shrestha, Manfei Zhang, Xiu-Yuan Huang, Kang Hu, Li Jin, Hui Li; Genetic Structure of Qiangic Populations Residing in the Western Sichuan Corridor, Published: August 4, 2014 <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0103772>

The Qiangic languages in western Sichuan (WSC) are believed to be the oldest branch of the Sino-Tibetan linguistic family, and therefore, all Sino-Tibetan populations might have originated in WSC. However, very few genetic investigations have been done on Qiangic populations and no genetic evidences for the origin of Sino-Tibetan populations have been provided. By using the informative Y chromosome and mitochondrial DNA (mtDNA) markers, we analyzed the genetic structure of Qiangic populations. Our results revealed a predominantly Northern Asian-specific component in Qiangic populations, especially in maternal lineages. The Qiangic populations are an admixture of the northward migrations of East Asian initial settlers with Y chromosome haplogroup D (D1-M15 and the later originated D3a-P47) in the late Paleolithic age, and the southward Di-Qiang people with dominant haplogroup O3a2c1*-M134 and O3a2c1a-M117 in the Neolithic Age.....The frequencies of Southern China or Southeast Asia specific haplogroups in Horpa-Danba, Horpa-Daofu, Tibetan-Xinlong, and Tibetan-Yajiang are 26.09%, 22.50%, 27.73%, and 21.35%, respectively. However, Tibetan- Yajiang, Horpa-Danba, Horpa-Daofu and, to a lesser extent, Tibetan-Xinlong, display a considerable Northeast Asian proportion of lineages (56.77%, 56.52%, 55.00%, and 43.70%, respectively). Consistent with other studied Tibetan populations on the Tibetan Plateau, Qiangic populations also showed a strong similarity with Northeast Asian populations.....

Question 7: Are we satisfied with explanations linking the ancient Qiang with the modern people known as the Burmese Chin? A. Yes.

The following is taken from: International Conference on Burma/Myanmar Studies
Burma/Myanmar in Transition: Connectivity, Changes and Challenges University Academic
Service Centre (UNISERV), Chiang Mai University, Thailand, 24 - 25 July 2015 Prehistory to
Proto - history of Myanmar: A Perspective of Historical Geography Win Naing Tun Myanmar
Environment Institute:

The Origin of the Myanmar Majority Group

Most Chinese scholars agree that the Myanmars originated from the Qiang group of ancient China, but a few scholars such as Chen Xi insist that the Myanmars originated in central Myanmar. Having analytically studied the chapter on the Bailang in the Chinese ancient work Houhanshu: Xinanyi Liezhuan Dai Qingxia came to believe that one branch of the ancient Tibeto – Myanmar linguistic group, the Bailang language spoken the Bailang people inhabiting ancient southwest China, is linguistically closer to the Myanmar language than the Yi language. Zhengzhang Shangfang made it clear that the Bailang people was the ancestor of the Myanmars. Some other scholars put forward the conception of the Qiang language family and argue that the Myanmar language split off from the Qiang language around the 2nd century BC. Based on these linguistic studies, the Qiang group of ancient China is regarded as the ancestor of the Myanmars. They migrated south from northwest China several centuries before the Christian era and then, as the Bailang people, inhabited a region in western Sichuan province during the Eastern Han dynasty. Later they gradually moved further south into Myanmar and eventually formed the ethnic groups of Myanmar and Rakhine.

A renowned Burmese historian, Lian H. Sakhong wrote in his book:

In Search of Chin Identity: A Study in Religion, Politics and Ethnic Identity in Burma

Migration Patterns

Chin tradition maintains that the ancestors of the Chin people originated from a cave called 'Chinlung', but in the absence of written documents, it is difficult to locate the exact site of Chinlung. Scholars and researchers therefore give various opinions as to its location.

K. Zawla, a Mizo historian from West Chinram, suggests that the location of Chinlung might be somewhere in modern China, and the 'Ralte group [of the Mizo tribe] were probably one of the first groups to depart from Chhinlung' (Zawla 1976: 2). Here, Zawla quoted Shakespeare and accepted the Chin legend as historical fact. He also claimed that the Chin came out of Chinlung in about 225 BC, during construction of the Great Wall and during the reign of Emperor Ch'in Shih Huang, whose cruelty was then at its height. Zawla relates the story of the Ch'in ruling dynasty in Chinese history in a fascinating manner. He uses local legends known as Tuanbia (literally 'stories or events from the old-days') and many stories which are recorded by early travellers and British administrators in Chinram, as well as modern historical research on ancient China. Naturally, this kind of compound story-telling has little or no value in a historical sense, but is nevertheless important in terms of socially reconstructing collective memories as identity creating resources.

Other theories have been advanced in this connection, more noticeably by Sing Kho Khai (1984) and Chawn Kio (1993). Both believe that the Chin ancestors are either the Ch'ing or Ch'iang in Chinese history, which are 'old generic designations for the non-Chinese tribes of the Kansu-Tibetan frontier, and indicate the Ch'iang as a shepherd people, the Ch'ing as a jungle people' (Sing Kho Khai 1984: 53). Thus, according to Chinese history, both the Ch'iang and Ch'ing were regarded as 'barbarian tribes' (ibid.: 21). Gin Za Tuang – in a slightly different manner than Zawla, Sing Kho Khai and Chawn Kio – claims that the location of 'Chinlung' was believed to be in Tibet (cf. Ginzathang 1973:

5; Sing Kho Khai 1984: 10; Gangte 1993: 14). Gin Za Tuang, nevertheless, maintains that the Chin ancestors were Ch'iang, but he mentions nothing about the Ch'ing.

Gin Za Thang simply follows Than Tun's and G. H. Luce's theory of the origin of Tibeto-Burmans and other groups of humans, believed to be the ancestors of the Southeast Asian peoples. According to Professors Than Tun and Gordon Luce,⁵ the Ch'iang were not just the ancestors of the Chin but of the entire Tibeto-Burman group, and they 'enjoyed a civilization as advanced as the Chinese, who disturbed them so much that they moved south' (Than Tun 1988: 3). Regarding this, Gordon Luce says:

With the expansion of China, the Ch'iang had either the choice to be absorbed or to become nomads in the wilds. It was a hard choice, between liberty and civilization. Your ancestors chose liberty; and they must have gallantly maintained it. But the cost was heavy. It cost them 2000 years of progress. If the Ch'iang of 3000 BC were equals of the Chinese civilization, the Burmans [and the Chin] of 700 AD were not nearly as advanced as the Chinese in 1300 BC (cited in Than Tun 1988: 4).

Before they moved to the wilderness along the edges of western China and eastern Tibet, the ancient homelands of Ch'iang and all other Tibeto-Burman groups, according to Enriquez, lay somewhere in the northwest, possibly in Kansu, between the Gobi and northwestern Tibet (Enriquez 1932: 7-8).

Recently there has been a big leap-forward with DNA techniques. However, to find a definitive answer to the question as to what haplogroup etc. do the Haka Chin have with for example, the inhabitants of Liaoning or Qinghai, would need a study to be undertaken looking at just that.

Three studies that have been carried out as close as we could find are:

- (1) Analyses of Genetic Structure of Tibeto-Burman Populations Reveals Sex-Biased Admixture in Southern Tibeto-Burmans, Wen B, Xie X, Gao S, Li H, Shi H, Song X, et al
- (2) Large-scale mitochondrial DNA analysis in Southeast Asia reveals evolutionary effects of cultural isolation in the multi-ethnic population of Myanmar, Monika Summerer, et al <http://bmcevolbiol.biomedcentral.com/articles/10.1186/1471-2148-14-17>
- (3) Ancient inland human dispersals from Myanmar into interior East Asia since the Late Pleistocene Yu-Chun Li, et al

As we have previously quoted from these studies it is not necessary to reproduce the same again.

Question 8: Are we satisfied that the majority of the bead symbols originated in Ukraine, Anatolia, The Levant, 'Old Europe' or thereabouts?

Answer: although impossible to state conclusively in the affirmative, the balance of probabilities is that based on the visual evidence, the answer is 'yes'. Our research would indicate a route via Mesopotamia, Luristan, Bactria, Mehrgarh to the Tarim Basin was the route followed by the Proto-Indo-Europeans into China, thence along the jade route to Liaoning and probably also branching off towards Qinghai and Gansu. The original source for at least one of the main symbols was the Blombos Cave in South Africa c. 77000 BC, another from the Ukraine 18000–15000 BC, with many developing in the Southeast Anatolia and Levant areas 10000–6000 BC.

Question 9: Regarding the beads' manufacture, are we satisfied that ancient methods were employed in fashioning them? A. Yes.

From the outset, it became apparent that most of the beads, on viewing the holes, the shafts appeared to narrow when held up to the light. Sometimes, there would barely be any light visible. This gave all the indications that the holes had been drilled from both sides and applied to beads as small as 11mm diameter. We have shown in the drilling section that this practice can be seen from the 3 broken beads that we possess. Obviously, we do not propose to physically break any of the others, so the only way to obtain better information would be to use a scanning electron microscope (SEM) which is way beyond our capabilities.

On viewing the images of the broken beads, it is apparent that strings would occasionally break due the edges where both drilling shafts met in the middle.

The importance of the beads is emphasized by the one we have in our possession which has obviously been miss-drilled (figure 955). It was not discarded but re-drilled.

As usual, we refer to acknowledged experts for further information. Once again, we use the exceptional expertise of Jonathan Mark Kenoyer, who teamed up with Dennys Frenez for: Stone Beads in Oman during the 3rd to 2nd Millennia BCE. *New Approaches to the Study of Trade and Technology*, BEADS, 2018.

Two passages seemed apt when applied to our study.

The first states:

...some beads are drilled only from one end and when the drill pops out at the other end, it leaves a conical flake scar. Other beads are drilled half way from one end and then turned around and drilled from the opposite end. If the driller is highly skilled, the drill holes usually meet perfectly at the center of the bead. In many cases, the drilling was not done very carefully so the holes do not meet properly. This causes sharp edges that can cut the suspension string. These special features of drilling are indicative of different workshops and production traditions. Beads produced in major workshops of the Indus Valley region tend to have drill holes that are exceptionally well centered, while beads drilled in other regions tend to be quite irregular and are often not centered.

The second passage of interest:

Some of the beads were made using a pecking technique (Figure 3, 1) that is known from very early Neolithic times, circa 6000 BCE in Mesopotamia (Chevalier, Inizan, and Tixier 1982), and from slightly later times in Arabia, Egypt, and the Indus Valley regions (Kenoyer 2003). These may be beads that have been passed down for thousands of years and used by many different people before their final burial. Other beads have been drilled using a constricted cylindrical ernestite drill (Kenoyer and Vidale 1992), a technology that was only found in the Indus Valley region and dates to around 2600-1900 BCE (Figure 4). This means that some of the beads were brought to Oman from the Indus Valley region. Other beads have been drilled using a solid or tubular metal drill with some form of abrasive. Based on Kenoyer's current studies of Indus beads, drilling with abrasives is documented at sites in the Indus Valley such as Harappa and Dholavira between 2500-1900 BC, but the type of abrasive is not known.

The first passage speaks of the undoubted skill of the Indus Valley bead makers where the drilling would meet almost perfectly in the center.

During our investigations, we considered the possibility that the Qiang had used Indus Valley craftsmen in China. It is conceivable that the knowledge was used, and that the reference in the first passage that some other centers drilled holes imperfectly, where sharp edges met in the middle causing string breakages, may apply to our Chin beads.

This would tend to fit the scenarios which we encountered during our investigations of hole drilling, especially the mis-drilled bead shown in figure 955.

The second quote mentions the possible passing down of beads for thousands of years before final burial.

Included in the excerpts we have quoted from A.G.E. Newland there is mention of important Chiefs having a few pumtek beads buried with them. The vast majority would have been passed to his eldest son, hence the reason why relatively few beads have been excavated.

An additional aspect to the age of the beads can be gauged by wear evident at the holes and

generally on the body. Again, a valuable insight into this is taken from the Kennoyer and Frenoz report and we use this quote below. Refer to figures 952–954 and 1034–1041 for some of our examples.

The wear on the ends and the exterior of the beads provides information about their actual use. If a freshly manufactured bead is deposited in a burial or lost, it has very sharp drill-hole edges and the surface shows traces of the final polish. If a bead has been worn on a string next to other beads or metal objects, the ends are worn, the edge of the drill hole is worn and polished, and the exterior of the bead can show various types of wear and abrasion. These details provide a general idea of the relative use life of a bead and if it was used for a short or long period of time prior to being buried or discarded.

It will be seen from figures 952–954 and 1034–1041 that our Chin beads meet these requirements viz. wear and tear at the holes and on the body.

Therefore, we are quite confident that a majority of our 1543 beads meet the requirements to be classified as ‘first-generation’ in the Chinese sense; extremely ancient in the normal understanding of classification and, to the best of our endeavors, placing them in the Machang phase of the Majiayao culture c. 2300 BC.

Naturally, we concentrated on examining the beads which either fluoresced or were attached to a necklace containing such beads. As stated previously, we have no academic background and limited resources. We managed to examine probably fifty per cent of the beads, with the remainder set aside. Handling such small items which require very close-up inspection due to the minute craftsmanship utilized in manufacture and decoration of the beads, has been quite a difficult experience to say the least.

By the law of averages, due to the vast amount of time which the beads have been passed down from generation to generation, it is almost certain that not all the beads will be of the most ancient variety; we simply do not know when the original beads ceased manufacture before the reproductions were started c. 1920. It is well documented that the Chin mixed newer beads with older ones. However, the manufacture of new beads only appears to have occurred post-1900, and therefore it stands to reason that there could be beads strung on necklaces which are in their

original configurations. A point which we have made in this study.

Question 10: Can we give examples of the symbols being used today? A. Yes

A fine example of the symbol which we have followed from the Ukraine c. 18000 BC being used in today's environment is the Europa forum designed for the European Parliament.

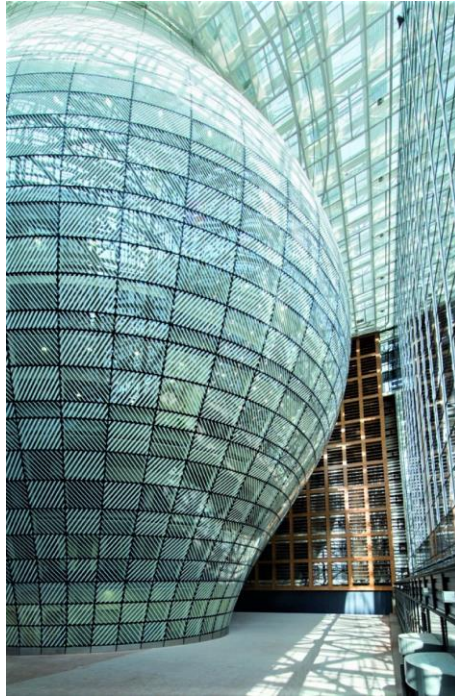


Figure 1245. <https://buildings-forum.com/fr/projects/detail/797>



Figure 1246. <https://www.consilium.europa.eu/en/contact/visits/>

The following images represent the shape of the World's landmass at the time when the trees began to form into their silicified shape, the type of which we believe were used to fashion our collection of beads.

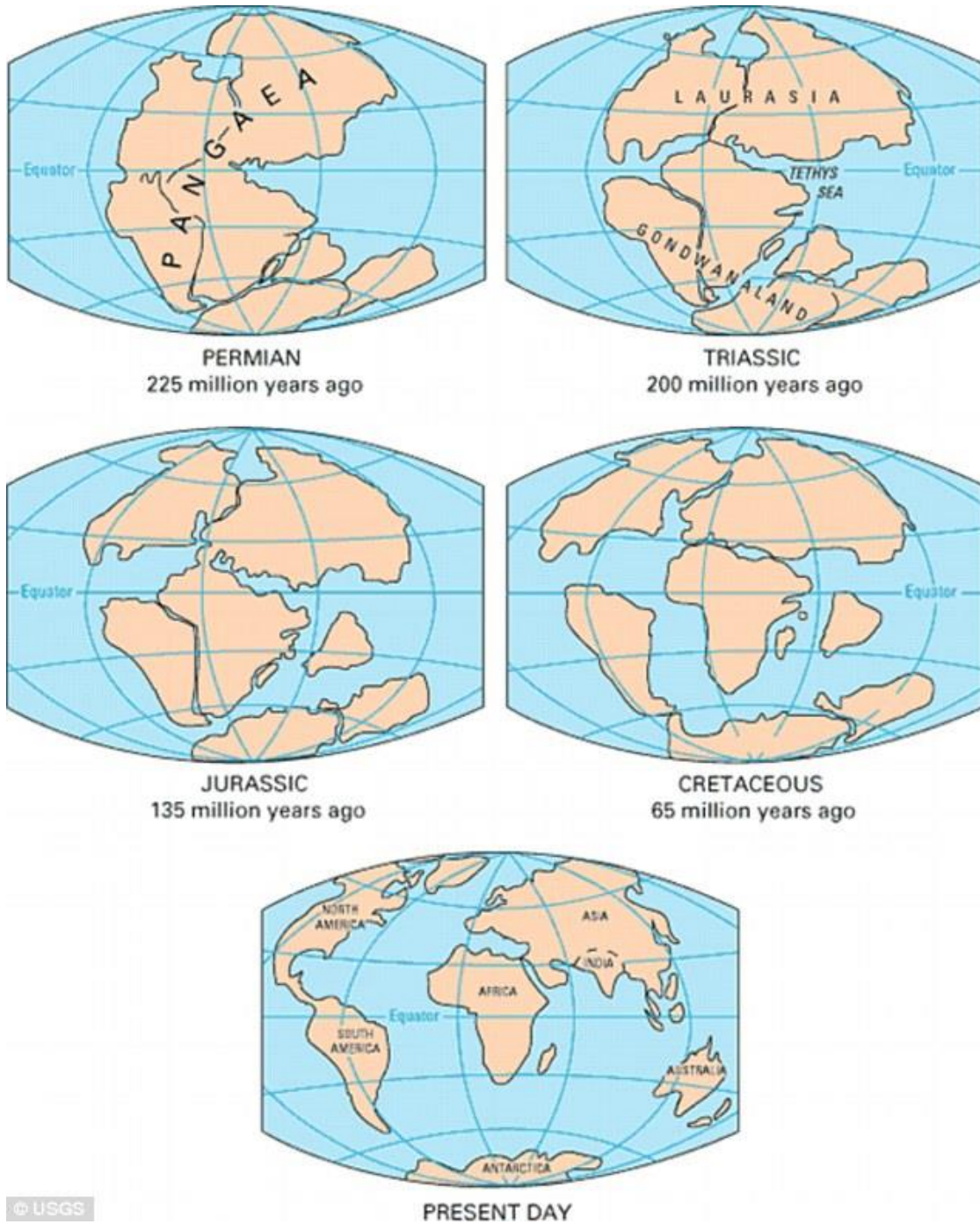


Figure 1248. The araucarioxylon species from Arizona is quoted at 225million years old. Image source from USGS: <https://pubs.usgs.gov/gip/dynamic/historical.html>

How today's countries would appear if placed back in the Pangea era is shown below in figure 1249. The map's creator is Massimo Pietrobon. Source of image: <http://www.openculture.com/2014/07/map-showing-where-todays-countries-would-be-located-on-pangea.html>



Figure 1249



Figure 1250. Evolution of the Qiang symbol on oracle bone inscriptions through to the modern Chinese Jiang clan name. <http://www.2jiapu.com/user/14869/>

Appendix A: Jiang and their clan names (see figure 1250)

Translated via Google from: http://blog.sina.com.cn/s/blog_a89f26870102xh96.html

The original Chinese text follows this translation, which is as usual, very trying:

The surname Jiang is 32nd in the "Hundred Family Names" and ranked 60th among the national surnames. According to research, from the first generation of Qi Guo Jiang Taigong to the present, a total of 102 surnames were derived from the Jiang surname, including 64 single surnames such as Lu, Xu, Xie, Ji, Qiu, Lu, etc., Dong Guo, Gao Tang, 38 ya, 雍, bull and other 38 surnames. Here are 50 of the last names.

Ginger: Ben Yandi was born in Jiang Shui because of his surname, and later his descendants became his surname. After being flooded, the empire of Emperor Yandi's work from Sun Boyi Zuoqi had great merits. He was named as the head of the Four Sacred Mountains, and he was honored by his Lord's Four Sacrifices. He was called Taiyue, and he was given the name of Hou Bo. Ginger, after Shao Yan Emperor.

Lv: From the surname of Jiang's Yan Emperor and the ancient princes. The co-workers took the gift from Sun Boyi Zuo, and made the four-sacred priests for the princes and the princes. Lu Shang, the word child, the number is too public, because the Xing Zhougong is sealed in Qi, that is, after Bo Yi, it is Lu. Today, the Lu Clan who lived at home and abroad are mostly Taishang Lu Shangmiao.

Qi: From the ginger surname Yan Di Sun Lu Shang. Because of his great achievements in Zhou Xing, Zhou Wu Wang Feng was in Qi. The children and grandchildren are united by the country.

Shang: Jiang surname, Taigong Jiang Shang. Taigong's Taishi is still a father, and his later generations are sacred. After the Han Dynasty, there is a high-ranking gentleman.

Hope: "customs": from the ginger surname, too far behind. "Surname Court" cloud

"Historical Records": Qi Taigong sees Wen Wang, (Wen Wang) 曰 "Wu Tai Gong Wang Ziji long", because of the number "Tai Gong Wang", later generations thought it was awkward. Qiu

(Qiu): Jiang surname, Taigong sealed in Qi, Jianduyingqiu. Its squats live in the camps, and Qiu is the hill. The place is now in Linyi area. "Zuo Zhuan" has a weak doctor (233,000 in Zhaogong). To avoid Confucius, change the name of Qiu to the "Qi" department.

Ding: Jiang surname, Jiang Taigong's eldest son Ding Gong Lu Wei, Zhi Sun to Ding Shi.

Han Ding Gu Shi; "Heyers Table": Yang Duhou Ding Fu; Xuan Qu Hou Dingyi, and passed the four generations; Le Cheng Hou Dingli, passed the seven generations.

Cui: From the surname Jiang. The eldest son of the Taigong Lu Wei is Qi Dinggong. Ding Gong's son, Zizi, was reluctant to succeed to Qihou and let the country's uncle B. The ambassador of the B was eaten in Cui and was named Cui. Jinan East (in today's Zhangqiu, Zouping area), there is Cui's City, that is, the season of the child. Ji Zisheng Mu Bo. Mubo was born. Wo Shengye, VIII Sun Cui Yusheng. He was Qi Zhuang's Justice, and he was with the Qing Dynasty. He was born into a child, a child, a child, and was mostly killed by Qingfeng. Zi Ming Ben Lu, born good. The fifteenth century Sun Yiru is the Qin Dafu, Feng Dong Lai Hou. Sheng Erziye, Zhongkai. The word "Beiji", Handong Laihou, Juhe Dongwucheng, oysters. 昱生绍, Shaoshengya, Yashengzhong, Zhongshengtai, Taisheng 恪景, 恪丞, often the world is too often, Hou 太穆 Waiting for the official residence. Following the traceability of the source, Jizi is the common ancestor of Cui. Liao Yu, 隰为 as the doctor, the descendants of the son of the 邑. Du pre-note: Jinan has Shuin County.

Jing: After Qi Jinggong, the son of the Taigong, he took the blasphemy, and the scenery was ugly and Jingchun was behind.

Tan: Jiang surname, after the Taigong, Qigong people have food in the Qiuqiu Tancheng, because of Chai: After the surname of Qi Wengong, the surname of Jiang. Gao Sunbiao, named after the father of the king, VIII Sun Gaochai, Zizizi, Confucius disciple. The son of the son of the high-ranking, and the name of the father of the king, 曰 Chai. In the Han Dynasty, there was Xuanpu Hou Chaiwu. Sun Shouli. In the Five Dynasties, Zhou Taizu had no post, and the son of the courtesy, Chai Rong, was for the Sejong.

懿: From the surname Jiang, this Taigong Miao is married after Qi Gonggong. Yao Qin has a squadron. 晏: From the surname Jiang, the Qigong clan is weak, and the scorpion. The weak life of Zhong Ying, the infant babies and their ancestors, the father of the father is Qi Dafu. Check: After Qi Taigong. The public food is harvested in the cockroach, and the later is the cockroach. After the shackles, check the connection, simplification is checked.

Nie: From after Jiang's grandfather. Ding Gong Lu Wei's sons and grandsons were sealed in Niecheng, built Nieguo, Qi Aiyong, and later the country as the priest.

Ke: Jiang surname, Qi Taigong descendants.

Valley: After the grandfather. At the end of Qi Gongzi, there is a grandson in the valley, and then he is in the valley.

栾: Jiang surname, the son of Qi Huigong, the son of Jianzi, the word 栾. His sons and daughters are the father of the word, the singer.

Well: Jiang surname, Jiang Taigong descendants have a rush to be a doctor, eating in the well, and later because of the well.

Even: Jiang surname, Qi has a doctor even the name, and his descendants are connected. Rao: After Jiang's grandfather, he was a doctor, and he was eaten in Rao, and later he was a priest.

阚: From the ginger surname. Qi Dafu stopped, for the Taigong Tongzong, Feng Yuyu, said to stop, and later to the 曰阚邑。 .

Cover: from the ginger surname. In the Spring and Autumn Period, he was a doctor, and he was eaten in the cover. It was later thought to be.

Charge: from the ginger surname. In the Spring and Autumn Period, there were doctors in the Qigong tribe, and their descendants were named after their ancestors.

Ding Ruo: Jiang surname. "Traditional Customs": Qi Ding's son, Zibo, eats in the land, because of the thought.

Zi Yan: Jiang surname, the son of the Taigong, the grandson of the grandfather, the son of Qi Huigong.

Zi Ya: Jiang surname, Qi Qigong, after Qi Huigong's grandson Sun Zaozi Ziya.

Sub-tail: After the grandfather. After Qi Huigong's grandson, Sun Wei's character, was also

Gao's. Sub-flag: Jiang surname, Taigong Miao. Qi Huigong's great-grandson 栾字子子

Ziquan: After Jiang Taigong. "Shiben": the son of Qi Dingong, the word Ziquan, followed by the word. "Zuo Zhuan" has a big master Zijie.

Child: Jiang surname. "Shiben": After the son of Qi Dingong, the father's character is used as the family, and there are children in the Spring and Autumn Period.

Child labor (child): Jiang surname, the father of the Taigong. "Shiben": After the son of Qigongong. Gongqi: "Shiben": Qiwei public time has left the law enforcement flag. "Nine Sources of Rhyme": After Qi Qigongziziqi.

Bull: "The surname source rhyme": After the Qigongzi cattle.

Qi Ji: Jiang surname, the son of Qi Gongong was chaotic because of Qi Qi. Lu has a doctor's

quarterly glimpse, that is, after that.

Dong Guo: Jiang surname, after the Qi Gongzu Gong Gong. Qi Dafu Dong Guoshu, see "Zuo Zhuan", and the mainland party number Dong Guo. Later generations may be simplified to Guo.

Will have: Jiang surname. The son of Jiang Taigong will be named after the name.

Lu Pu: Jiang surname, the grandson of the grandson is from the public, and is also a Lu's, all out of the Lu.

Tuen Mun: Jiang surname, the father of the Taigong. "Shiben": Xizheng Shengzi Xiasheng lived in Tuen Mun, and he lived in the Tuen Mun. According to: Tuen Mun, "Spring and Autumn" Qichengmen, the so-called "burning the door to the shackles" also; "Warring States policy": Qi Yumen Zhou Yiqin Meng Mengjun; "Say Yuan" has a trick to Yu Di.

Yuqiu: Jiang surname, Qigong nationality eating in Yuqiu, because of the thought.

Gao Tang (Gao Tang): Jiang surname, the father of the Taigong. "Customs": Qi Qing Gao

癸: From the surname of Jiang, Qi Qigong later became the priest.

Li: After the ancestors of Jiang Taigong were savvy. The Han Dynasty has Wei County Taishou Yiyang Hou Liwen, that is, his seedlings.

Gao: From the surname Jiang. Qi Taigong VIII Sun Qiwen Gong Jiang Chisheng son high. Gao Sunjun is Qi Shangqing, and Guan Zhonghe's princes have meritorious service. The patriarchal life is based on the father's character, and the food is collected in Lu, Qi Jingzhong, and the world is Shangqing.

Lu: From the surname Jiang. After the Taigong, Qi Wengong was high, Gao Sunzhen was Qi Zhengqing, and Qi Jingzhong, and the food was collected in Lu, and the descendants of the later generations were the ones. Tian's Daiqi, Lu's people scattered in Yanqin. After the Yuan, Ming and Qing Dynasties, the Lu Clan migrated to Southeast Asia, and they were like the Glan, Gao, Lu, and Qiu.

Luo: Jiang surname, after Qi Taigong, there is a son Luo, the son of the child named. Wu Youluo, Dongyang, and Houji Huiji.

桓: After the surname Jiang Qigong, he took the blasphemy. After the Han Dynasty, there was a prince Shao Fu Rong, who lived in the country. Rong VIII Sun Yan, Jin Xuancheng internal history, five sons: cloud, warm, open, secret, rush. Chong, Jingzhou thorn history, Fengchengong, oysters and modest repair. Xiu, Jin Hujun general, Changshe Hou, crossing the river to Danyang, Sheng Yin. Yin Sheng Chongzhi. Chongzhi VII Sun Yanfa.

Qing (he): Jiang surname, the son of the grandfather after the Taigong, the son has no loss. The son of the son of the Qingke is not lost, and the son of Qingke is named after the father's name, called Qingshi. Qing Feng was a doctor at the time of Qi Linggong. At the time of Zhuangong and Cui Wei, he was the master of the Qing Dynasty. Due to civil strife in Cui Wei's home, Qing Feng destroyed Cui's sin and succumbed to political affairs, causing dissatisfaction with Qing dynasty. When Qingfeng saw that the situation was not good, he fled to Wu. At the end of the Western Han Dynasty, the descendants of the descendants of the Huiji Mountain, the Eastern Han Dynasty passed to Qingyi for the Yinyin Order, and his great-grandson Qing Chun served in the service, in order to avoid the name of Han Qing's father Liu Qing, the word "Qing" was changed to synonymous "He" word. Qingchun was changed to He Chun. The history is called the authentic name of He.

隰: Jiang surname, the son of Qi Zhuangong, the brother of 僖公, Liao Shiqi, Gong Gong, 桓公封,

姜姓在《百家姓》排第32，在全国姓氏人口中排名第60位。据考证，从齐国第一代国君姜太公起到现在，共有102个姓氏由姜姓繁衍而来，包括吕、许、谢、纪、丘、卢等64个单姓和淳于、东郭、高堂、子雅、雍门、公牛等38个复姓。这里举出其中的50个姓氏。

姜：本炎帝生于姜水因以为姓，其后子孙变易他姓。尧遭洪水，炎帝之裔共工的从孙伯夷佐禹治水有大功，被封为四岳之长，以其主四岳之祭，尊之，故称太岳，命为侯伯，复赐以祖姓曰姜，以绍炎帝之后。

吕：出自姜姓炎帝裔子、古诸侯共工氏。共工从孙伯夷佐尧掌礼，使遍掌四岳，为诸侯伯，号太岳；又佐禹治水有功，封为吕侯。吕尚，字子牙，号太公望，因兴周功封于齐，即伯夷之后，故为吕氏。及今，遍居海内外的吕氏族人，多是太公吕尚苗裔。

齐：出自姜姓炎帝裔孙吕尚。因其兴周有大功，周武王封之于齐。子孙以国为氏曰齐。

尚：姜姓，太公姜尚之后。太公号太师尚父，其后世支庶遂以尚为氏。后汉有高士尚长字子平

。望：《风俗通》：出自姜姓，太公望后。《姓苑》云《史记》：齐太公见文王，(文王)曰“吾太公望子久矣”，因号“太公望”，后人因以为氏焉。丘（邱）：姜姓，太公封于齐，建都营丘。其庶支族人居于营丘者，遂以丘为氏。其地即今临淄一带。《左传》有邾大夫丘弱（昭公二十三年）

。清避孔子讳，将丘姓加“阝”部改成“邱”。丁：姜姓，姜太公长子丁公吕汲，支孙以丁为氏。汉有丁固氏；《功臣表》：阳都侯丁复；宣曲侯丁义，并传封四代；乐成侯丁礼，传封七代。

崔：出自姜姓。太公长子吕汲为齐丁公。丁公嫡子季子不愿继位为齐侯而让国于叔乙吕得，为乙公。

乙公使季子食采于崔，遂为崔氏。济南东（在今章丘、邹平一带）故有崔氏城，即季子故邑。季子生穆伯。穆伯生沃。沃生野，八世孙崔天生杼。杼为齐庄公正卿，与庆封同朝。杼生子成、子明、子强，多为庆封所杀。子明奔鲁，生子良。十五世孙意如为秦大夫，封东莱侯。生二子业、仲牟。

业字伯基，汉东莱侯，居河东武城，生昱。昱生绍，绍生雅，雅生忠，忠生泰，泰生恪景、恪丞，屡世为太常信侯、襄国太守穆侯、光禄勋嗣侯、扬州刺史、咨议参军、司徒等官爵。循流溯源，则季子为崔氏的共祖。癸：出自姜姓，齐癸公之后以谥为氏。

厉：姜太公之裔齐厉公之后。汉有魏郡太守义阳侯厉温，即其苗裔。

高：出自姜姓。齐太公八世孙齐文公姜赤生公子高。高孙偃为齐上卿，与管仲合诸侯有功，桓公命偃以王父字为氏，食采于卢，谥曰敬仲，世为上卿。

卢：出自姜姓。太公之后齐文公子高，高孙偃为齐正卿，谥曰敬仲，食采于卢，后世子孙因邑为氏。田氏代齐，卢氏族人散居燕秦各地。元、明、清以后，卢氏族人徙居东南亚地区，其如姜、高、吕、丘诸氏一样并为太公裔族。

骆：姜姓，齐太公之后有公子骆，子孙以名为氏。吴有骆统，东阳人，后居会稽。

桓：出自姜姓齐桓公之后，以谥为氏。后汉有太子少傅桓荣，世居谯国龙亢。荣八世孙桓彝，晋宣城内史，五子：云、温、豁、秘、冲。冲，荆州刺史、丰城公，生嗣谦修。修，晋护军将军、长社侯，过江居丹阳，生尹。尹生崇之。崇之七世孙桓法。

庆（贺）：姜姓，太公之后桓公之子，公子无亏之后。公子无亏生公孙庆克，庆克之子庆封以父名命氏，称为庆氏。庆封在齐灵公时任大夫，在庄公时与崔杼曾为上卿，执掌国政。因崔杼家内发生内乱，庆封以弑君罪灭掉崔氏，独霸朝政，引起了朝上朝下对庆氏的不满。庆封见势不妙，便逃到了吴国。至西汉末，子孙徙会稽山阴，东汉时传至庆仪为汝阴令，其曾孙庆纯官拜侍中，为避汉安帝的父亲刘庆的名讳，"庆"字改为同义的"贺"字。庆纯改为贺纯。史称贺姓正宗。

隰：姜姓，齐庄公之子、僖公之弟廖事齐桓公，桓公封廖于隰阴为大夫，子孙因以邑为氏。

杜预注：济南有隰阴县。

景：出自太公之裔齐景公之后，以谥为氏，景丑、景春皆其后。檀：

姜姓，太公之后，齐公族有食采于瑕丘檀城的，因以为氏。

柴：出自姜姓齐文公子高之后。高孙偃，以王父名为氏，八世孙高柴，字子羔，孔子弟子。子羔孙高举，又以王父名为氏，曰柴氏。汉代有棘蒲侯柴武。裔孙守礼。五代周太祖无后，以守礼之子柴荣为嗣，是为世宗。懿：出自姜姓，本太公苗裔齐懿公之后。姚秦有吏部郎懿横。

晏：出自姜姓，齐公族晏弱为卿，谥桓子。弱生平仲婴，婴生圉及其族晏，晏父戎为齐大夫。

查：齐太公之后。齐顷公有子食采于楂邑，其后因以楂为氏。后楂、查相通，遂简化为查。

聂：出自姜姓太公之后。丁公吕汲支庶子孙有封于聂城的，建聂国，为齐附庸，其后以国为氏曰聂。柯：

姜姓，齐太公后裔。谷：太公之后。齐公子尾有孙封于夹谷，其后遂以谷为氏。

栾：姜姓，齐惠公之子公子坚，字子栾。其支庶子孙以王父之字为氏，曰栾氏。

井：姜姓，姜太公后裔有奔虞为大夫者，食采于井，其后因以井为氏。连：姜姓，齐有大夫连称者，其子孙以连为氏。

饶：姜姓太公之后为齐大夫，食采于饶邑，其后以邑为氏。

闾：出自姜姓。齐大夫止，为太公同宗，封于闾邑，称闾止，其后遂以邑为氏曰闾氏。盖：出自姜姓。春秋时为齐大夫，食采于盖邑。其后因以为氏。

充：出自姜姓。春秋时齐公族中有大夫充闾，其子孙以其祖名为氏，曰充丁若：姜姓。

《风俗通》：齐丁公子懿伯食采于若地，因以为氏。

子襄：姜姓，太公之裔，桓公之孙，齐惠公之子子襄之后。

子雅：姜姓，齐桓公之后，齐惠公之孙公孙灶字子雅之后。

子尾：太公之后。齐惠公之孙公孙蚤字子尾之后，亦为高氏。

子旗：姜姓，太公苗裔。齐惠公曾孙栾施字子旗，后世子孙因以为氏，亦或去子为旗氏。

井：姜姓，姜太公后裔有奔虞为大夫者，食采于井，其后因以井为氏。连：姜姓，齐有大夫连称者，其子孙以连为氏。

饶：姜姓太公之后为齐大夫，食采于饶邑，其后以邑为氏。

闾：出自姜姓。齐大夫止，为太公同宗，封于闾邑，称闾止，其后遂以邑为氏曰闾氏。盖：出自姜姓。春秋时为齐大夫，食采于盖邑。其后因以为氏。

充：出自姜姓。春秋时齐公族中有大夫充闾，其子孙以其祖名为氏，曰充

丁若：姜姓。

《风俗通》：齐丁公子懿伯食采于若地，因以为氏。子襄：姜姓，太公之裔，桓公之孙，齐惠公之子子襄之后。

子雅：姜姓，齐桓公之后，齐惠公之孙公孙灶字子雅之后。

子尾：太公之后。齐惠公之孙公孙蚤字子尾之后，亦为高氏。

子旗：姜姓，太公苗裔。齐惠公曾孙栾施字子旗，后世子孙因以为氏，亦或去子为旗氏。

子泉：姜太公之后。《世本》：齐顷公之子湫字子泉，其后以字为氏。

《左传》齐有大夫子泉捷。子干：姜姓。

《世本》：齐顷公之子子干之后，以王父字为氏，春秋时有子干晰。

子工（子公）：姜姓，太公之裔。《世本》：齐顷公之子子工之后。

公旗：《世本》：齐威公时有左执法公旗蕃。

《九源韵谱》：齐悼公子子旗之后。公牛：《姓源韵谱》：其先齐公子牛之后。

齐季：姜姓，齐襄公之子季因乱奔楚，因以齐季为氏。鲁有大夫齐季窥，即其后。

东郭：姜姓，齐公族桓公之后。齐大夫东郭书，见《左传》，又大陆子方号东郭。后世可能简化为郭姓

将具：姜姓。姜太公之子将具之后，因名为氏。

卢蒲：姜姓，太公裔孙而出自桓公，亦为卢氏一支，皆齐之卢所出。

雍门：姜姓，太公之裔。《世本》：齐顷公生子夏胜居于雍门，以所居为氏因曰雍门。按：雍门，

《春秋》齐城门，所谓“焚雍门之荻”也；《战国策》：齐雍门周以琴干孟尝君；《说苑》有雍门于狄余丘：姜姓，齐公族食采于余丘，因以为氏。

高堂（高唐）：姜姓，太公之裔。《风俗通》：齐卿高敬仲食采于高堂，因以为氏。

南史：齐太公之后。出自齐大夫居国之南以居为氏，谓之南史氏。

《春秋》：齐崔杼弑庄公南史氏闻太史尽死，执简以往，将书崔杼罪者，即其家也。

Appendix B

Provenance: Authors' Shipping list from Chiangmai, Thailand, May 6th, 1991

Note: all items listed such as 'cotton belt with coin' (the bronze belts) are from the Haka Chin tribe. The Chin beads are listed as 'stone beads'. The coin belts/bags are also Haka, and not Akha.

PACK & MOVE

105 M.2 T. NIHONGPAKIUNG, CHIANGMAI - SANKAMPHAENG RD.,
A.MUANG, CHIANGMAI 50000 TEL. & FAX. 66 - 53 - 246787

INVOICE

INVOICE No. 1991/5/6 Bangkok MAY. 6, 1991

INVOICE OF WOODENWARES, LACQUERWARES, EARTHENWARES, BAGS, SILVERWARES, BRASSWARES. Merchandise

AWARDS SHIPPING (THAILAND) CO., LTD.

Shipped by 16. MONTRI, RE., T. WADKET, A. MUANG, CHIANGMAI 50000 THAILAND.

per M.S. SEA FREIGHT FROM BANGKOK TO ENGLAND. to order at risk

and for Account of Messrs. [REDACTED], ENGLAND. TEL. [REDACTED]

Article No.	Description	Quantity	@	TH. B	Amount	TH. B	
	GONG ✓	1 PC.	2,000.00		2,000.00		
	WALL HANGING PLATE ✓	2 PCS.	4,000.00		8,000.00		
	PLATE ✓	1 PC.	2,500.00		2,500.00		
	DOLL ✓	1 PC.	15,000.00		15,000.00		
	BIRD WITH MAN	1 PC.	65,000.00		65,000.00		
	STONEWARE	1 PC.	1,000.00		1,000.00		
	SAMPLE OF WAIST COAT	20 PCS.	350.00		7,000.00		
	CUSHION COVER	200 PCS.	70.00		14,000.00		
20900090	SAMPLE OF SHOULDER BAG (NOT LEATHER)	120 PCS.	120.00		14,400.00		
	SAMPLE OF BACK PACK	20 PCS.	158.00		3,160.00		
	SAMPLE AKHA BAG WITH COIN (L.)	8 PCS.	550.00		4,400.00		
	SAMPLE AKHA BAG WITH COIN (S.)	20 PCS.	350.00		7,000.00		
	COTTON BELT WITH COIN (L.)	15 PCS.	250.00		3,750.00		
	COTTON BELT WITH COIN (M.)	30 PCS.	150.00		4,500.00		
	COTTON BELT WITH COIN (S.)	12 PCS.	120.00		1,440.00		
	COTTON NECKLACE WITH COIN (S.)	12 PCS.	153.00		1,836.00		
	* CUSTOME JEWELLY NECKLACE (110 Pcs)	100 PCS.	65.00		6,500.00	70	
	* PLASTIC BEADS	35 PCS.	45.00		1,575.00		
	* STONE BEADS	40 PCS.	139.00		5,560.00		
	* SAMPLE MAT MEE SILK	2 PCS.	1,200.00		2,400.00		
	* MAT MEE SCRAF	1 PC.	400.00		400.00		
	* SAMPLE MAT MEE WITH COTTON	2 PCS.	500.00		1,000.00		
	* SAMPLE COTTON	4 PCS.	250.00		1,000.00		
	* SAMPLE MAT MEE SILK	2 PCS.	1,400.00		2,800.00		
	* SAMPLE MAT MEE SILK	3 PCS.	1,000.00		3,000.00		
	* SAMPLE MAT MEE SILK	2 PCS.	1,800.00		3,600.00		
	* PLASTIC HEADBAND	82 PCS.	15.00		1,230.00		
	* HAIR CRIP (S.)	240 PCS.	15.00		3,600.00		
	* HAIR CRIP (L.)	80 PCS.	25.00		2,000.00		
	* PERSONAL BOOK & MAGAZINE (NOT FOR RESALE)	11 PCS.	250.00		2,750.00		
	TOTAL:				361,004.00.		
	F.O.B. BANGKOK, THAILAND						
	(TH. B. THREE HUNDRED & SIXTY - ONE THOUSAND AND FOUR ONLY)						

ANTIQUE ✓

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Appendix C

Examples of the popularity of Chin beads in China with their claim of direct links to the Qiang and the Yellow Emperor, contents of which were downloaded 15.05.2014 from:

[http://pumtek.taobao.com/category-677105132.htm?](http://pumtek.taobao.com/category-677105132.htm?spm=2013.1.w5002-834004402.3.YJt5U4&search=y&catName=%B0%EE%CC%E1%BF%CB%C4%BE%D6%E9%A3%A8%B9%DC%D6%E9%A3%A9&v=)

[spm=2013.1.w5002-834004402.3.YJt5U4&search=y&catName=%B0%EE%CC%E1%BF%CB%C4%BE%D6%E9%A3%A8%B9%DC%D6%E9%A3%A9&v=](http://pumtek.taobao.com/category-677105132.htm?spm=2013.1.w5002-834004402.3.YJt5U4&search=y&catName=%B0%EE%CC%E1%BF%CB%C4%BE%D6%E9%A3%A8%B9%DC%D6%E9%A3%A9&v=)

The website of this shop can currently be viewed at: <http://pumtek.taobao.com>

Note: ¥1000 = USD144.72 as of June 9th, 2019, so extraordinary prices were quoted by the dealer shown on the following pages. For example, the single necklace was priced at US\$14.5m and the first bead at US\$ 1.45m. There is no doubt that whoever thought that they had possession of an authentic ‘first-generation’ pumtek bead believed they had hit the jackpot!

These prices were typical at the time and rose to ¥99999999 equating the value of the Chin beads with the better known Dzi beads from Tibet. During 2013–2015 we took digital and hard copies of multiple dealers’ beads, all purporting to offer first-generation pumtek at these extraordinary prices. At its height, Taobao had 35 pages, 36 beads per page, being advertised.

Following the absorption of our information for testing these beads via Chinese bead forums such as enjoybead.com, the beads now on offer would appear to be brand new; any authentic ancient beads more than likely changing hands via private transaction (for fear of confiscation by senior officials?). However, some are still offered in excess of US\$100,000 on the general Taobao pages. A sample page from Taobao taken 2nd March 2013 is at the very end.

To our eyes, some of the beads offered are of extravagant design and unknown to us from our collection. As with purchasing jade, the adage ‘caveat emptor’ springs to mind!



鉴赏帖！一代邦提克木珠老式穿法鉴赏。

¥99999999.00



邦提克木珠珠王，特殊图腾管珠，57.2mm
¥999999.00



邦提克木珠特殊图腾管珠，非常罕见
¥800000.00



精品邦提克木珠，特殊图腾管珠，材质极好，牙黄色
¥500000.00



邦提克木珠精品管珠，图腾特殊，黑白分明
¥300000.00



邦提克木珠精品管珠，特殊图腾，双彩虹
¥500000.00



邦提克木珠，一代，八线虎尾纹管珠，45mm
¥40000.00



邦提克木珠 四线虎尾纹管珠 31mm
¥10000.00



*已结缘*老邦提克珠，精品一代木珠，六线虎尾纹管珠，品相精美
¥999999.00



一代邦提克，木珠，邦提克四线虎纹管珠，33.1MM
¥12000.00



邦提克木珠五线虎纹管珠，一代老邦提克，35.5mm
¥11000.00



老邦提克木珠，邦提克，木珠四线虎纹管珠，31mm
¥6000.00



邦提克木珠，五线虎纹管珠，36mm
¥12000



*已交流*邦提克一代珠，四线虎纹管珠，老邦提克，品相精美
¥99999.00



邦提克珠 四线虎纹管珠 29mm

¥4000.00



邦提克木珠 九线虎尾纹管珠 39.5mm

¥10000.00



*已交流*邦提克木珠 九线虎尾纹管珠 45mm

¥9999999.00



邦提克木珠，九线虎纹管珠，一代邦提克，品相完美

¥12000.00



一代邦提克珠，老木珠，四线虎纹管珠，品相精美

¥12000.00



一代木珠，邦提克木珠，9 线虎纹管珠，老邦提克珠
¥11000.00



邦提克木珠虎纹管珠手串，非常漂亮
¥50000.00



邦提克木珠精品管珠小手串
¥49000.00



邦提克木珠虎纹管珠小手串（7 颗），特价
¥35000.00



一代邦提克珠，山形，雪铁龙管珠手串
¥80000.00



邦提克珠，一代四线虎纹管珠，老木珠，邦提克
¥7000.00



老邦提克，一代木珠，邦提克 9 线虎纹管珠
¥13000.00



邦提克木珠，一代邦提克，9 线虎纹管珠，可单出
¥140000.00



已出鉴赏*小雅精品木珠*邦提克珠 九线虎尾纹管珠
¥999999.00



邦提克木珠精品管珠，特殊四线四闪电，及其罕见，老邦提克
¥150000.00



邦提克一代木珠，山形，雪铁龙管珠，31mm
¥12000.00



一代邦提克木珠，三线水纹小管珠，非常漂亮
¥10000.00



特殊邦提克管珠，四线四闪电，及其特殊
¥100000.00



邦提克珠 9 线虎纹管珠，很难得的大尺寸
¥40000.00



邦提克木珠老蜜蜡手钏 老邦提克珠，老蜜蜡桶珠
¥20000.00



邦提克木珠三线虎尾纹管珠 老蜜蜡手串
¥11000.00



邦提克木珠 三线虎尾纹管珠 品相完整
¥10000.00



邦提克木珠，特殊品相一代邦提克管珠，六线水纹珍藏级
¥250000.00



*已结缘*邦提克木珠 金刚三眼图腾管珠 一代包老邦提克珠
¥9999999.00



老邦提克珠 四线虎尾纹管珠 品相佳
¥10000.00



邦提克木珠 四线虎尾纹管珠 手钏必备
¥9000.00



邦提克木珠 四线虎尾纹管珠
¥10000.00



小雅木珠 老邦提克 五线管珠一对
¥18000.00



已交流 邦提克木珠 特殊 4 线虎纹 双彩虹管珠
¥999999.00



一代邦提克木珠之宇宙虎纹六眼，已出鉴赏
¥9999999.00



*已结缘*邦提克木珠，特殊品相一代老邦提克珠，特殊稀少四线山型
¥99999999.00



邦提克木珠 九线虎尾纹管珠 一代邦提克珠特价
¥8000.00



邦提克木珠，八线虎尾纹管珠 一代老邦提克珠
¥8000.00



*已交流*一代老邦提克木珠 雪铁龙山形管珠 老邦提克珠
¥999999.00



邦提克珠 一代邦提克木珠 山形管珠 雪铁龙 老邦提克珠
¥8000.00



小雅木珠 邦提克木珠一代 38mm 五线虎纹特价
¥8000.00



邦提克珠 三线虎尾纹管珠

¥15000.00



*已交流*小雅精品木珠 特殊五线虎尾纹 25mm

¥999999.00



邦提克木珠 特殊虎纹小管珠 配手串首选

¥20000.00



邦提克木珠 九线虎尾纹管珠 40mm

¥12000.00



邦提克一代木珠の稀少罕见的金刚三眼管珠

¥40000.00



*已交流*邦提克木珠，一代邦提克，五线虎尾纹管珠，牙黄
¥9999999.00



*小雅木珠*邦提克木珠一代 24mm 特殊虎纹特价
¥6000.00



金刚三眼中眼老邦提克小管珠
¥35000.00



*小雅木珠*邦提克木珠 20mm 金刚三眼管珠（已交流）
¥999999.00



#已交流#*小雅木珠*一代九线虎纹邦提克珠
¥99999.00



方板一代邦提克木珠一对！朋友的链接，勿乱拍
¥7200.00



*小雅木珠*邦提克木珠 22mm 三线小虎纹（已出鉴赏）
¥999999.00



*已交流*邦提克木珠の六线虎纹管珠
¥999999.00



*已交流*邦提克木珠，一代精品 8 线虎尾纹管珠，43.2MM
¥9999999.00



*已结缘*邦提克木珠，精品九线虎尾纹管珠，品相完美
¥9999999.00



老邦提克木珠，一代邦提克，四线虎尾纹管珠，特价
¥999999.00



*已交流*邦提克，木珠，一代山形管珠，雪铁龙 30MM
¥999999.00



*已结缘*邦提克珠，木珠，山形管珠，雪铁龙，30.5MM，品相完美
¥999999.00



一代邦提克木珠特殊管珠一对，四瓣山形，品相好，大尺寸
¥80000.00



*已交流*邦提克珠 精致的三线虎尾纹管珠 23mm
¥99999.00



邦提克木珠特殊管珠，诛法虎纹，品相好
¥150000.00



*已交流*邦提克木珠 四线虎尾纹管珠 30mm
¥999999.00



邦提克木珠五线虎尾纹管珠
¥15000.00



邦提克木珠 三线虎尾纹管珠，27mm
¥10000.00



*已交流*邦提克，木珠，一代九线虎尾纹管珠，45MM 大尺寸
¥999999.00



木珠，邦提克木珠，一代邦提克，特殊一口线虎纹
¥4000.00



邦提克木珠，九线虎尾纹管珠，46MM
¥9999999.00



*已交流*邦提克木珠，一代老邦提克，四线虎纹管珠一对，特价出
¥999999.00



邦提克木珠，一代九线虎尾纹管珠，36.5MM，邦提克，木珠
¥13000.00



邦提克木珠，特殊金刚索管珠，小巧精致
¥18000.00



*已交流*邦提克木珠管珠，九线虎纹管珠，黑白分明，47mm
¥999999.00



顶级收藏 一代邦提克木珠 山水图腾管珠 超级美
¥600000.00



#已出鉴赏#邦提克木珠 三线虎尾纹小管珠
¥999999.00



*小雅木珠*4 线虎纹邦提克管珠一对
¥40000.00



小雅木珠 32mm 四线虎纹管珠
¥7000.00



邦提克木珠精品特殊管珠，孤品，24 眼，一代老邦提克
¥1000000.00



*已交流*邦提克木珠 四线虎尾纹管珠
¥999999.00



一代邦提克，老木珠，四线虎尾纹管珠，品相完美
¥15000.00



小雅木珠 一代九线老邦提克珠 44.5mm （已出鉴赏）
¥9999999.00



罕见的图腾为山的小胖子~邦提克木珠，28*11.5mm(已出鉴赏)
¥999999.00



一代邦提克木珠，老邦提克珠，特殊四线虎纹管珠，品相精美
¥15000.00



一代邦提克，木珠，邦提克四线虎纹管珠，品相好，入门级管珠
¥9500.00



老邦提克，一代邦提克珠，木珠特价，四线虎纹管珠，入门首选
¥4800.00



一代邦提克木珠，邦提克，四线虎纹管珠，包老，老邦提克木珠
¥7000.00



邦提克木珠精品管珠，特殊水纹图腾，材质极好
¥300000.00



*已交流*老邦提克珠，一代木珠，四线虎纹管珠，黑白邦提克木珠
¥9999999.00



*已交流*精品邦提克木珠，一代，四线虎纹管珠，蛋白木化石材质
¥999999.00



小雅木珠 一代邦提克木珠四线虎纹管珠一对
¥40000.00



小雅木珠 精品双口线 9 线虎纹邦提克木珠管珠(已出鉴赏)
¥999999.00

Here we reproduce a scan from a hard copy we took on March 2nd 2013 from the general Taobao pages, displaying beads from other dealers than shown in previous pages:

老邦提克 商品搜索 一淘网

Page 1 of 3

The screenshot displays a Taobao search results page for the keyword '老邦提克'. The page layout includes a search bar at the top, navigation tabs for '综合结果', '网上商城', '搜淘宝', and '促销抢购季'. Below the search bar, there are several product listings arranged in a grid. Each listing consists of a product image, a title, a price, and shipping information. The prices for most items are 999999.00. The shipping information for most items is '湖北' (Hubei) and '淘宝网 keefuyan'. There are also some items with prices of 266.00, 55.80, 118.00, 320.00, 5800.00, 1600.00, 650.00, and 1200.00. The page also features a sidebar on the left with various filters and categories.

http://s.etao.com/search?spm=1002.8.1.1613.Pu9a8K&q=%C0%CF+%B0%EE+%C... 02/03/2013