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CHINESE JADE DISKS FROM THE FERSMAN MINERALOGICAL MUSEUM (RAS) COLLECTION. EXPERIENCE IN ATTRIBUTION. SIGNIFICANCE AND PLACE IN CHINESE TRADITIONS

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The gem and stone art collection of Fersman Mineralogical Museum, RAS, Moscow, contains three jade disks. In 1998, these were identified as Chinese ritual *bi* disks, and their attribution begun. This paper presents the study results, along with a brief historical review of the *bi* disks as symbols inherent in Chinese cultural traditions, from the Neolithic period to present. Relevant functions and rituals are described, as well as the attribution problems associated with this jade lapidary type.

Exquisite lapidaries from Fersman Museum collection combine a great academic and aesthetical value, and Chinese jade articles are among the most interesting of these. Their historical and cultural significance in the traditional Chinese culture makes an innate part of their value as the museum exhibits.

1 table, 14 figures, 11 references.

The inventory carried out in Fersman Museum in 1998 required specification of some lapidaries. Small jade disks first listed in the first half of the 20th century were registered in the catalog as «two carved disks», and an old label specified: «two carved disks with holes at their middle parts». These items required description that is more exact. The exhibits were classified as Chinese ritual *bi* disks. Further task was to give a written depiction, obtain, and systematize data on historical and cultural significance of the *bi*.

Pieces of art as exhibits of the natural history museums are rare objects of the joint art expert and academic art history studies, whereas an adequate perception of the old natural history-oriented collections, like those of Fersman Museum, becomes a possibility in case aesthetics and science merge. Such aesthetic approach to scientific exposures and studies of the stone art artistic techniques has ever been an innate part of the classical mineralogical museum studies. The *bi* disks, like other Chinese lapidaries, present the attributes of sophisticated mythology with its hierarchy of symbols. These are outstanding pieces of the Fersman Museum collection, which make this stone art anthology valuable.

Bi disks from the Fersman Museum collection

Jade disks from the Fersman Museum collection are small carved items; two of these have a smooth edge and a shallow geometric pattern, whereas the third one is ornamented with a coiled dragon (Photos 1a, 1b, 1c). The first two disks joined the gem and stone art collection in 1923 as donations from V.I Kryzhanovskiy, the then chief scholarly supervisor of the Museum

(ID 2346, further Disk 1 and 2), and the last one was obtained from the State Historical Museum in 1949 (ID 4662, further Disk 3).

Disk 1 is made of pale yellow to dark brown jade; Disk 2 is straw-colored (light to medium), and Disk 3 is white. All three disks are almost ideal rounds of similar dimensions (cm): 5.6 and 0.30 to 0.41; 5.8 and 0.31 to 0.41; 5.7 and 0.22 to 0.40 (diameter and thickness of Disks 1, 2, and 3, respectively). A hole in Disk 2 is significantly off the center (about 0.2 cm).

Patterns engraved on Disks 1 and 2 are alike: one side of Disk 1 and both sides of Disk 2 exhibit belts of alternating vertical and horizontal trigrams. Four «cloud coils» occur at the center of the Disk 1 front side. Its other side is free of the trigram belt, and the «cloud coils» occupy it whole: these make four groups, each containing a rhombic latticework as a core surrounded with three coils. Disk 2 exhibits the same pattern on its both sides: a trigram belt along the edge and a four-member ornament made of short lines and curves. The meaning of the latter as a symbol is not clear. The «cloud curls» and trigrams (i.e., groups of three solid lines) symbolize skies. Further, we will see that such patterns correlate with a general symbol system traditional of Chinese jade disks.

An ornament engraved on Disk 3 portrays a fantastic beast (a coiled dragon). Despite its complexity, its contours reproduced on both sides of the disk are identical.

These items are traditional Chinese ritual disks *bi* (*pi*). *Bi* disks evolved in the Late Neolithic period as magic attributes. By majority, the *bi* disks are made of nephrite; serpentinite is a rare alternative, jadeite ancient disks are unknowns. *Bi* disks «outlived» coeval magic objects to be

preserved in Chinese material culture to present days, and their functions changed with time.

What is a bi disk?

Three major traditions were and still are the major controls of symbolic and cultural frameworks, which enable interpretation of the pieces of art: Confucianism, Taoism, and Buddhism. The pre-Confucian ancient system and the one existing now are the necessary completions. Thus, it turned out that *bi* belongs to all and every system mentioned, Buddhism excluded, being an innate element of Chinese culture.

By the 5th century B.C., a Confucian canon fixed the ritual function of a *bi* as a symbol of Skies to be sacrificed to these; due to it, the disk should be of sky-blue color. As profane items, the *bi* disks served as insignia of the fifth and fourth-rank Chinese officials; in these cases, the disks were due to carry the grain or bamboo pattern (Nott, 1977; Gump, 1962).

However, the *bi* disks were known in China since the pre-historical period, when their function in rituals had been different.

Ancient bi disks of the Late Neolithic period (5000–2200 B.C.)

The oldest Chinese jade disks (subsequently named *bi*) originate from Herneudu-Liangzhu culture; these are dated as Late Neolithic (5000–4000 B.C.), i.e., well before characters came into practice and 45 centuries before Confucius and Lao-tze (Nott, 1977; The Golden Age..., 1999). Numerous *bi* disks were found in tombs of the period, usually in combination with *ts'ung* (*cong*) tubes. *Ts'ung* is a prism, a square in its cross-section, with a cylindrical inner chamber. If viewed from top, it forms a circle inscribed into a square (Photo 2). *Bi* and *ts'ung* make a couple where *bi* serves as a lid. Researchers interpreted this as the first Chinese cosmological model comprising a square Earth and round Skies. Later this will propagate over the whole country.

The number of sepulchral jade lapidaries varied with a social position of a deceased. One tomb contained 25 *bi* disks and 33 *ts'ung* tubes (Fig. 1). Some tombs have been filled up with jade lapidaries.

Frequently, sepulchral rituals included cremation of jade lapidaries: first, these were placed into fire at the tomb, and, subsequently, the corpse was lowered into it.

In ancient China they valued jade higher than jadeite. An original explanation of the fact is that jadeite (which melting temperature is lower than that of jade), when placed into an open fire, melts

to form colorless transparent beads, whereas jade gains a beautiful creamery coating, so its value grows. *Myths of the Ancient China* (He Yuan, 1987) read: «Common jadeite turned into scoria, whereas the Skies Wisdom jade remained». In Ancient China, they called the fire-treated jade «chicken bones». Such jade variety is of a special high price in the antiquity market; hence frequent falsifications. Note that no jadeite lapidaries are known to originate from Ancient China.

Written sources specify yet another function of the Neolithic jade disks. *Shuo Wen*, the first Chinese dictionary (c. 2nd century B.C.) witnesses that the *bi* disks ornamented with the coiled dragon images served as attributes of the prayer for rain ceremonies during the Shkn-nung (the Divine Husbandman) reign (Nott, 1977). What is the period in question?

Here we should address the Chinese history timeline (Table 1).

The whole history of China could be conditionally divided into two parts, a legendary period and a historical (documented) one. The Hsia dynasty (2205–1766 B.C.) is believed to be the first. However, legends, not documents make a basis for this notion, so frequently this dynasty is called legendary. For long they considered the first really historical dynasty, Shang (1766–1027 B.C.), as a legend, too, until excavations carried out as late as in the 20th century brought documentary evidences (records on the bone and bronze items used by fortune-tellers).

Legends tell that five emperors reigned prior to the Hsia dynasty.

Monarchy in China was founded by Fu Hi, a primordial ancestor of all Chinese; his reign began in 2852 B.C. Shkn-nung, the Divine Husbandman, succeeded him (2737 to 2697 B.C.) to be followed by Huang-ti, the Yellow Emperor.

Thus, the period in question is the third millennium B.C. Rituals related to prayers for rain and harvest were of major importance in Neolithic communities (Vassil'ev, 2001). These were performed by shamans (not infrequently, shamanesses). Having adorned one's garments with numerous jade items (animalistic images prevailed), such shamans went to a field, got self-entranced, and prayed to spirits and Skies for rain and harvest to be granted. Occasionally, shamans got themselves burned as a sacrifice intended to stop draught. Ancient Chinese myths frequently refer to jade decorations as attributes of such cremation ceremonies. To please the spirits of water, they threw jade lapidaries to streams.

Photo 1. Chinese ritual bi (pi) disks from the collection of the Fersman Mineralogical Museum, RAS: a,b) FMM, ID 2346; c) FMM, ID 4662



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Photo 2. Ts'ung (cong) tubes (Debain-Francfort, 2002)

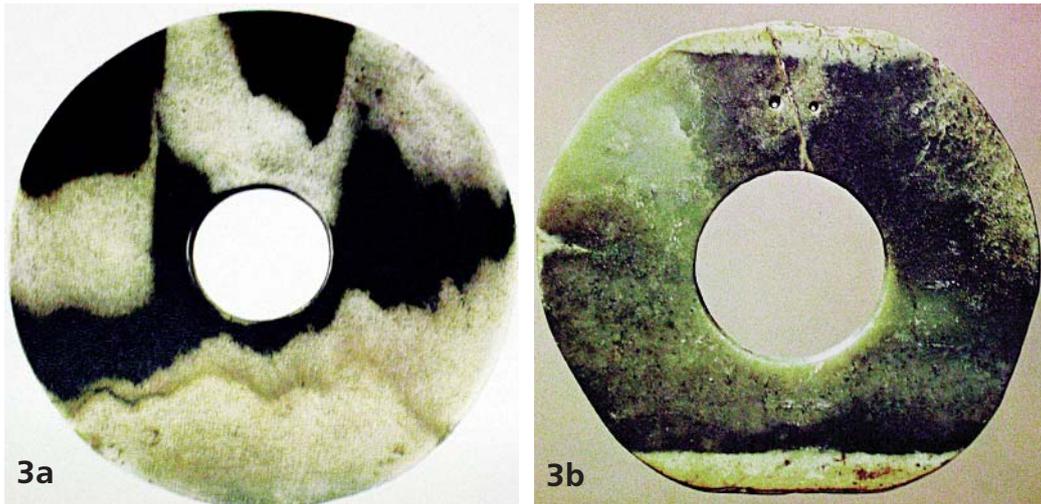


Photo 3. Neolithic bi disks. Massive jade of uneven color. Punctures are discernible at the top (Laufer, 1912)



*Photo 4. Chou dynasty: bi disks as ceremonial articles.
A pendant with the bi disks
(Debain-Francfort, 2002)*

*Photo 5. A buckle adorned with the bi disks.
The Chou dynasty
(Debain-Francfort, 2002)*

*Photo 6. Disk bi, the Han epoch
(The golden age..., 1999)*



Thus, *bi* disks served not just as the sepulchral items, but as shamanic attributes as well.

Here is another interesting detail. Commentaries for *Chou Li* (the 2nd century B.C.), a book that described rituals existed during the Chou dynasty, present the first detailed record on the *bi* disk. Such disks should have a square hole at its center (i.e., a round of Skies surrounds a square Earth). However, no finds of such disks are known by now. Instead, traditional Chinese coins match this description. Due to the fact, some researchers (Lanfer, 1912) believed that these coins originated from *bi* disks used in sacrifices.

In addition to the Neolithic history of *bi*, we should mention numerous finds of these items in the Lake Baikal area. Convincing explanations of the fact remain unfound.

Neolithic ritual disks are relatively large (30 to 35 cm in diameter) and carry no ornamentations (Photos 3a, 3b). Their simplicity contrasts sharply with elaborateness of other Neolithic jade lapidaries (The Golden Age..., 1999).

Some disks have small punctures along the edge. Presumably, such disks served as shamanic attributes, not sepulchral rituals (Photo 3, in the right).

Historical China: Shang (1766–1122 B.C.), Chou (1122–255 B.C.), and Ch'in (255–207 B.C.) dynasties

During the Shang dynasty reign (1766–1122 B.C.), the jade lapidary art kept on progressing. The sepulchral jades remained mainly unchanged. In addition to the *bi-ts'ung* couple, the *kuei* ritual plaque was introduced (Fig. 2). By the middle of the next dynastic period, it replaced *ts'ung* to make a couple for *bi*. Subsequently, the Confucian «Book of the Rules» (Li Chi) will establish *kuei* as a symbol of East, which should be of green color.

Sepulchral *bi* disks of the Shang period remained practically the same as Neolithic: these are large and carry no ornamentations.

The **Chow** dynasty reign (1122 to 255 B.C.) was the blooming period of lapidary.

Tombs of that period contain an unbelievable *bi* variety. These differ in size; this is the period when the *bi* disks gained ornaments (Fig. 3a, 3b). The *bi* disks become applicable in areas other than funeral rituals. The earliest finds of the coiled dragon pattern engraved on

Table 1. Chinese history timeline (after Nott, 1977)

Dynasty	Dates
Hsia (legendary)	2205–1766 B.C.
Shang	1766–1121 B.C.
Chou	1122–255 B.C.
Ch'in	255–206 B.C.
Han	206 B.C.–A.D. 225
Three Kingdoms	A.D. 221–265
Chin	A.D. 265–420
Northern and Southern Dynasties (Nan Pei Ch'ao)	A.D. 420–589
Sui	A.D. 589–618
T'ang	A.D. 618–907
Five Dynasties (Wu Tai)	A.D. 907–960
Sung	A.D. 960–1129
Yuan (Mongolian)	A.D. 1279–1368
Ming	A.D. 1368–1644
Ch'ing (Manchu)	A.D. 1644–1911
Republic	A.D. 1911–

the *bi* disk are dated by this period (Fig. 3b; the disk is 16 cm in diameter).

In compliance with Confucius, the *bi* disks were used as ceremonial decorations and just pendants (Photo 4). The *bi* disks became the components of the applied art objects (Photo 5).

During this period, jade of highest grade makes a material for decorations for living people, and not for sepulchral attributes. Another meaning of the *bi* disks assigned to these during the period was that of a good wish, unrelated to funerals or shamanism (Nott, 1977).

A short rule of the **Ch'in** dynasty (255–207 B.C.) is among the highly notable episodes of the Chinese history. Ch'in Shin Huang-ti was both a tyrant and reformer. Immortality was his dream, so innumerable missions of Taoists were sent to find and get the remedies, which would cause this effect. It was he who initiated construction of the Great Chinese Wall, and famous terracotta army guards his tomb (discovered in 1971). This emperor initiated the «cultural revolution» pattern, having ordered thousands of Confucian books to be burned in public.

Mass interest aroused by Taoists who tried to achieve immortality fed the myths related to jade properties, especially to its would-be ability to grant eternal life.

The Han dynasty (207 B.C.–A.D. 220). Sepulchral jade garments. Bi disk as a stair of the heavenly ladder

Under the influence of Taoism, a sepulchral «jade garments» became an attribute of superiority or nobility during the Han dynasty, 207 B.C.–A.D. 220 (Fig. 4).

Photo 7. Disk *bi*, the Han epoch (The golden age..., 1999)

Photo 8. A pendant of the Han epoch with the *bi* disks (The golden age..., 1999)

Photo 9. A dragon with the *bi* disk: a bucket of the Han epoch (The golden age..., 1999)

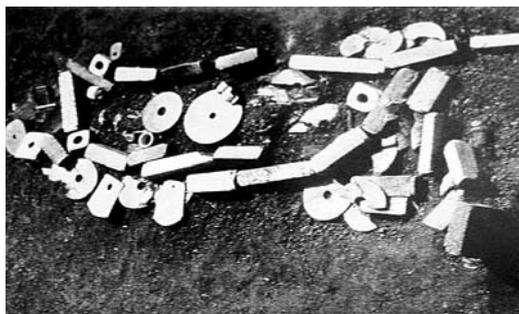


FIG. 1. *Bi* disks and *ts'ung* tubes, a burial of the Liangchu culture (3000–2000 B.C., Debain-Francfort, 2002)

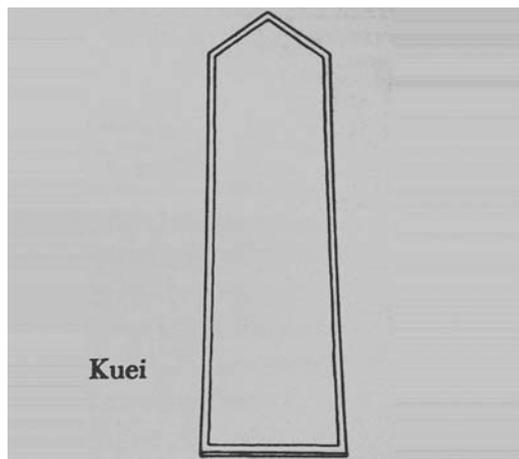


FIG. 2. *Kuei*, a ritual plaque (Gump, 1962)



FIG. 3a. Disks "bi" of Chou dynasty

Along with Confucian canon, a complicated series of Taoism traditions has been developing, including those Confucius rejected as superstitions: ancient shamanic rituals that employed jade, and new magic aimed at achievement of longevity and immortality, where jade, along with cinnabar, played an important role. During a century and a half, a religious branch of Taoism suppressed a philosophical one founded by Lao-tze and Chuang-tze to become a leading religious system in China (Vassil'yev, 2001).

Notions on jade as a substance that prevents a dead body from putrefaction (provided all nine natural orifices of the body closed with jade items and a cicada as a revival symbol is put into a dead person's mouth) strengthened during the Han dynasty (Nott, 1977; The golden age, 1999). *Bi* disks make an obligatory element of the sepulchral garments (Fig. 5, reproduced from The golden age..., 1999). These garments are made of jade plates connected with gold wires, and the *bi* disk is located on a sinciput. Presumably, this was done to assist the human soul, *hung*, to leave a body and ascend to heaven. *Bi* disk is a heavenly ladder.

During the Han dynasty, the jade lapidary art stood high. Shape, dimensions, and ornamentation of the *bi* disks varied widely (Photos 6, 7). Complicated sets of pendants made of small jade details, *bi* included, are typical (Photo 8). *Bi* disks became important elements of personal decoration. It played a composed role of symbol and decorative element (e.g., a bucket on Photo 9).

It has been a period when an important feature of Chinese culture revealed brightly, affection and respect to antiquities. One of the tombs contained a pre-dynastic *ts'ung* tube framed in bronze as a jewelry (probably, a family relic). First documentary descriptions described ancient bronze items and lapidaries (Debain-Francfort, 2002). Many chapters from Historical Minutes written by Syma Tsian, a prominent Chinese historian, give detailed ancient items. All that made a base for subsequent (during the Sung reign) numerous catalogues of antiquities (Debain-Francfort, 2002).

Post-Han period (A.D. 220 –): why the *bi* disks remained

Actually, here the historical description of the *bi* disks could be finished. Next epochs brought nothing new into their functions and patterns. However, *bi* disks have been produced in later periods, and are produced now.

In the post-Han period, jade disappears from sepulchral ceremonies. However, ceremonies practiced in Chinese imperial court

employed jade as late as 1911, i.e., by the end of the Ch'ing (Manchu) dynasty. *Bi* disks were decorative and ceremonial items. Magic and sepulchral functions of *bi* could have been preserved as parts of folk traditions, preserved and encouraged by Taoism.

Subsequent Six dynastics period (A.D. 220 – 589) has been a time of unrest in China. The lapidary art stagnated. Historians never mentioned jade lapidaries of the period. During the Tang dynasty (A.D. 589 – 906), Buddhism has come into China. New motifs in the jade lapidary of the period are benign symbols, mainly figures of animals and decorative belt buckles (Nott, 1977).

The Sung dynastical period (A.D. 960 – 1279) exhibited a general cultural rise of the nation; a new noble tradition seized the whole China: honoring and studying of antiquity.

Copying of antique items has become a tradition. Lists of items originated from the past dynasties have been issued, supplied with exquisite drawings and detailed descriptions. Collecting of old artifacts has become a conventional pastime. It turned out to be akin to archeology: the loot originated from the graveyard marauding had been described and drawn in detail.

Throughout further history of Chinese dynasties, items of newly emerging styles peacefully co-existed with originals and copies of the past periods. More, since jade lapidaries remained as everlasting traditional valuables of Chinese society, the skill of imitation and forgery here has improved for centuries and centuries. The *bi* disks have become the objects of imitation and forgery along with other jade lapidaries of the past.

In general, the jade lapidary tradition matches a general historical trend in the Chinese culture. Academician V.M. Alexeyev (1978) believes that, beginning with the times of Confucius, «unlike many other national literatures, nothing has been destroyed or terminated just for a single historical moment in Chinese literature; on the contrary, it progressed on and on... A Chinese writer, e.g., an author of the early 20th century, made a link of a continuous historical chain of literature beginning with Confucius (6th – 5th century B.C.); it would be natural for him to read verse composed by Chuang-tze, a poet and philosopher of the 4th century B.C., whose every character had been as clear to him as characters from a newspaper of the same 20th century.»

The same could be told of Chinese lapidists. Their knowledge on the art of their predecessors has been deep, being a living practice rather than abstract notion. Familiarity with cultural traditions and their preservation since



FIG. 3b. Disks "bi" of Chou dynasty

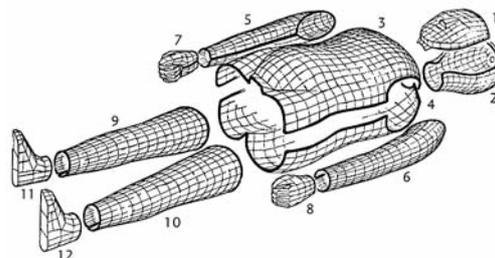


FIG. 4. Jade sepulchral garment, the Han period
(The golden age..., 1999)

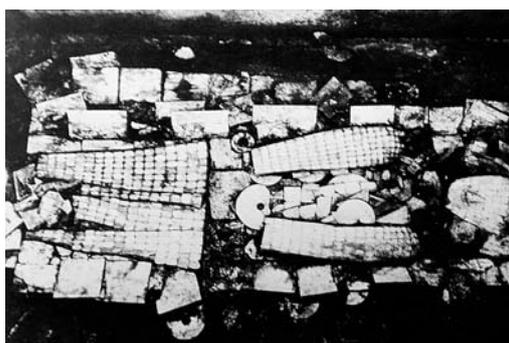


FIG. 5. Burial of the Han period. A jade garment
(The golden age..., 1999)

the time of Confucius has been mandatory to the Chinese officials.

This is why the *bi* disks are on the market in modern China: real things, skillful imitations, and coarse forgery.

Problems of attribution

Jade lapidaries never carry inscriptions, which could assist in dating of an item (seals make the only exception). Everlasting turnover of patterns, motifs, and symbols inherent in Chinese jade lapidaries makes exact dating impossible in case origin of the item is unknown. In part, this is a special feature of Chinese culture. Unlike in the West, copying of predecessors is not considered as a plagiarism or annoying non-originality; on the contrary, in China this indicated good taste and high education level.

By its ornamentation, Disk 1 from the Fersman Museum collection resembles that of the Han dynasty (cf. Laufer, 1912); however, dated disks of the period carry no the trigram belts. All three disks are smaller than that of the ceremonial *bi*, which should be about 5 Chinese inches (1 Chinese inch varied from 22.5 to 33.3 mm), but the disks from the Fersman museum could have served as decorative pendants.

Disks 1 and 2 are slightly chipped along the edge; Disk 2 is slightly worn out from one side. This may be due to their usage, probably as pendants. Numerous copies of the Han jade lapidaries are known from the Ming epoch (700 to 1000 years later); later dating also is a possibility. True antiques exhibit high quality of engraving and careful finishing. Presumably, broken rhythm and displacements in the pattern, along with inaccurate cut of the lines notable at Disk 2 indicate the mass production of jade lapidaries that occurred in the end of the Ch'ing dynasty (the 19th century).

Thus, Disks 1 and 2 could have been manufactured in China in the period beginning with the Ming (Disk 1) through the Ch'ing dynasty (Disk 2).

Disk 3 that displays a coiled dragon could be dated from the end of the Ming and to the early days of the Ch'ing dynasty (i.e., the second half of the 17th century and later). Similar disks are recorded as the Chou items (Chinese sources mention such disks used in the third millennium B.C.). However, good preservation, smaller size relative to known ancient analogs, and, especially, the material Disk 3 is made of, i.e., high-grade white jade typical of the beginning of the Ch'ing (Manchu) dynasty (Nott, 1977) indicate that this disk is no older than the 17th–18th century.

The 1900s make the upper age limit of these three disks: these have been listed in the Fersman Museum in 1923. The jade lapidary

traditions last from ancient times, so a skilled lapidist could have produced a precise imitation of an old masterpiece.

In China, antiquities has ever been valued immeasurably higher than the modern things. High value of jade is a national Chinese tradition. Thus, a skill of imitation and forgery of jade lapidaries has a polish of ages. More, the age of some old forgeries makes these highly valuable.

Conclusions

Jade *bi* disks absorbed a multitude of myths and amazing stories. Books may be written about them. However, any kind of Chinese lapidary is like it. Uniqueness of Chinese culture that counts several millennia combined with a very special attitude of Chinese to lapidaries and, first, jade lapidaries bring these items some supernatural properties.

In modern China, where they produce imitations jade per se, as well as copies of jade lapidary antiquities, this material remains in demand, being valued high as before. Why — this is the question. Many minerals and rocks are believed to be of brighter color and more exquisite than jade. But since the days of old and to these days Chinese keep on saying: «Anything can be valued, but jade remains priceless».

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