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No other culture has produced furniture as beautiful in its integration of design and structure, with every member joined in a manner calculated to enhance the sensitively conceived proportions of a given piece.

Robert Hatfield Ellsworth

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Ornamental Stone Panels and Chinese Furniture

Curtis Evarts

The Chinese have a special affinity with rocks and mountains. The aesthetic value they place on figured stone and curiously formed rock might even be compared to that which the Western connoisseur places on the nude figure in art. Fantastic rocks were collected that were said to contain the “wonder of a thousand *li* within an inch.” These microcosms of nature’s grandeur were felt to be permeated with the vital cosmic forces that breathe through the mountains whence they came. Thus they were an essential element in the extravagant gardens built by the literati, where their energies and symbolic associations were reminders of the ever-present wonder of the Dao.

The appreciation of decorative stone panels arose from this attitude. Quarried from deep within the mountains, these frozen slices of geological time are a microcosm of the mountains themselves, whose ordered chaos reflects the earth’s dynamic of flux and transformation. Especially treasured were those panels with natural veining that created realistic or abstract images suggestive of this transformation. Such were the highly prized *shanshui* landscape panels, whose mountains and valleys featured waterfalls spilling into streams, or steep precipices enshrouded in shifting clouds, or scenes in which dawn and dusk, moonlight, or the changing of the four seasons could be perceived. Other popular abstractions included grotesque figures or animals, birds, fish, auspicious flora, and Buddhist and Daoist imagery. The literati repeatedly praised the unapproachable transcendental quality of these painting-like representations in stone. Xu Xiake, for example, exclaimed, “These creations of the gods become more and more fantastic.

Those from the painter’s brush are vulgar. The painting studio is no longer necessary” (Xu 37).

Ornamental stone panels have been featured as screen panels and used to enhance Chinese furniture for well over a millennium. These patterned stones were valued for their expressive qualities; only in our more analytical age have they been scientifically studied. I hope that this preliminary investigation—tracing the long-held Chinese fascination with ornamental stones and briefly surveying modern geological knowledge and early quarrying techniques—will inspire others to examine the subject more thoroughly. Even this short treatment, however, can begin to unravel some of the entangled ter-



minology, and, as always, when our attention is brought to new areas we can better understand and appreciate the artistic heritage of bygone ages.

The Chinese have, of course, used stone since Neolithic times to fashion tools, weapons, and ritual objects. The early fascination with jade is well known; softer decorative stones such as marble and serpentine, however, could be quarried in larger pieces and were much easier to work. Early records indicate that decorative stone (*wenshi*), polished smooth to the touch, was used for imperial tombs in the Spring and Autumn period (770-476 B.C.). In the third century B.C., a legendary palace for the Qin emperor (221-207 B.C.) was built entirely of *wenshi* (Zhang Hongzhao 12b-13a). During the Han period a white marble (*quyang yu*) was quarried from caves in the Taihang mountains of Quyang in today's Western Hebei province. According to legend, before Liu Xiu had established the Western Han, he was under attack by Wang Mang, and sought refuge in one of the marble caves at Quyang (Zhao Songling 443). Numerous examples of Eastern Wei Buddhist sculpture carved in a pure white marble have also been excavated from temple ruins in Quyang, including one dated 540 A.D. (Weng 237). Lastly, a stone lion from the Tang period (A.D. 618-906) is carved from a puddingstone conglomerate called "yellow spotted stone" (*huangbanshi*), whose mottled markings enhance the lion's fierce demeanor (*Chugoku bijutsu* 56).

The use of rock to represent mountains is first recorded during the Han dynasty in the records of imperial parks (Hay 18). During the Tang dynasty, however, the fascination with strange rock formations began to spread outside imperial circles. In this period several renowned gardens were built, including Li Deyu's (787-849) famous Pingquan garden estate near Luoyang. Li imported rocks from Mount Tai and Langye terrace in Shandong, from Mount Bagong in Anhui, and from the Wu Xia gorges in Hubei (Hay 20). It is recorded that he had a rock called *xingjiu* rock thought to have come from the Diancang Mountains (Dali), which was capable of sobering the inebriated (Zhang Lunyuan 7). This legendary rock achieved such a reputation that it was ultimately acquired in the early twelfth century by Emperor Huizong, another petromaniac whose extravagant expenditures on his Genyue garden were thought by some to have contributed to the downfall of the Northern Song (Hay 20).

Although a poem attributed to the Tang poet Yuan Weizhi contains two lines about an inkstone screen with "a thin and brilliant stone panel (*shiping*) representing a forest of light and dark trees" (Zhang Lunyuan 7), little is recorded about stone panels until the Song dynasty (960-1279). By the Song dynasty, mountains and rocks had become thematic material for painters and poets. The scholar and poet Ouyang Xiu (1007-1072) is said to have had a

stone screen whose natural veining recalled pine-covered mountains. He also wrote several poems on the subject, including "Song on a Purple Stone Screen," which praises the ability of the stone to absorb and reflect moonlight (Hay 86), a distinguishing characteristic of a true marble. Two poems also extoll a decorative stone used for screen panels and quarried from



Fig. 1, facing page. Hexagonal stand with inscribed panel, Song dynasty (960-1279). Lacquered softwood and marble; length 50 cm, width 35 cm, height 41 cm. Royal Scottish Museum, Edinburgh.

Fig. 2, left. Mi Fu, "Spring Mountains and Auspicious Pines," Song dynasty (960-1279). Height 35 cm, width 44.1 cm. National Palace Museum, Taipei.

Guo, a mountainous region in the far western corner of Henan province; one of the poems gives high praise to the artisans there (Schafer 70).

Su Shi (1036-1101), one of the most influential personalities of the Song dynasty, was also a stone lover. He set a precedent for the aesthetic value of ornamental rocks when he refused to exchange two of his *chuoichi*—a bizarre peaked stone from Gansu province—for anything less than two works by Han

Gan, one of the great painters of the Tang dynasty (Schafer 7, 62). He was also one of the first in a long line of distinguished men to remark on the fantastic patterns on some stones: "Even though an artist might aim to delineate and depict them, he would be unable to achieve this" (Schafer 10). Su's collection is also said to have included a stone screen whose imagery suggested a moonlit forest on a windy night (Zhang Lunyuan 7). Another round, glossy, veined, green stone panel from Gongzhou (Gansu) was given to him by the son of the famous poet Du Fu. Although it had been called "Waves on the Water," Su Shi gave it the name of "Sky Waves" (Schafer 80).

The painter and calligrapher Mi Fu (1051-1107) was immersed in the prevailing enthusiasm for stones. A famous legend tells of him bowing to a large fantastic rock in Wuwei in modern Anhui and addressing it as "Elder Brother Stone" when he arrived to take up office there (Hay 33). Wuwei was known at that time for producing stone screens with painting-like (*tuhua*) images of mountains and forests with footpaths (Du 5a). A stone panel with this imagery is inlaid in a small, red-lacquer stand that could have belonged to Mi Fu himself (fig. 1). The poem inscribed on the panel is attributed (albeit questionably) to him:



Fig. 3, left. Anonymous, "Eighteen Scholars of the Tang dynasty," Ming (1368-1644) copy of a Southern Song handscroll. Detail. Length 174.1 cm, height 103 cm. National Palace Museum, Taipei.

Fig. 4, facing page. Wang Zhen-peng, attr., "The Admonishment of Emperor Taizong by Xu Huifei," Yuan dynasty (1277-1367). Handscroll. National Palace Museum, Taipei.

This stone panel from
Diancang,
With remarkably natural
color and veining,
Was made into a table,
In appreciation of its texture
and solidity,
To last without change
For millions of years.

Later connoisseurs often compared panels of decorative marble to the paintings of Mi and his son, Mi Youren. When we view Mi Fu's "Spring Mountains and Auspicious Pines" (fig. 2), or Mi Youren's (1071-1151) "Mountain Path along the River" (Vandier-Nicolas 117) and "Cloudy Mountains" (Ho 43), it seems probable that the two artists were influenced by stone panel imagery. Each of these paintings depicts blankets of mist that alternately shroud and reveal the mountain peaks, similar to the figure and veining that can be found in the finest examples of *shuimo* (inkwash) marble panels.

Mi Fu, Su Shi, and Ouyang Xiu most likely knew one another, and may have even spent time together. Many Song paintings depict garden gatherings in which scholars pursued the pleasures of the Four Arts and entertained themselves by examining books and appreciating paintings and antiquities. These garden terraces are often decorated with fantastic rocks like those extracted from Lake Tai, and furnished with large lacquered tables whose tops are inlaid with panels of decorative stone (cf. Handler 7). In one of four scrolls from a Ming copy of the Southern Song "Eighteen Scholars of the Tang dynasty," five scholars are seated around a large painting table as one prepares to stroke the paper with his loaded brush (fig. 3). The tabletop is inlaid with a large panel of decorative marble, whose patterns resemble clouds drifting among mountains. Such natural beauty would have been an inspiration for an artist working at the table. In another scroll from the same series, four scholars on a garden terrace appreciate a



landscape painting. They are also seated at a painting table inlaid with a large marble panel, whose veining resembles billowing clouds.

A handscroll attributed to the Yuan painter Wang Zhenpeng recalls the episode in which the virtuous concubine Xu Huifei gently reminds the Tang emperor Taizong of the pitfalls of extravagance that had led to the demise of other great dynasties (fig. 4). Here the emperor is tended and amused by his ladies and servants, one of whom holds a potted *lingbi* rock. In the garden, large Taihu rocks are juxtaposed with large potted pines. The emperor sits before a pond with flowering lotuses on a magnificent throne-like *chuang*, whose lacquered surface is embellished with light filigree patterns. The railings are inlaid with *shuimo* marble panels bearing scenes of mountain peaks. Although the Yuan (1277-1367) attribution of this painting is questionable, shortly thereafter, in 1388, the early Ming treatise, *Gegu yaolun* (Essential Criteria of Antiquities), documents the use of decorative stone panels for *chuang* railings (David 160).

In what is probably a Ming copy of a painting by the Song painter Su Hanchen in the National Palace Museum, Taipei, children play with toys on a *chuang* with railings of framed marble panels (Cahill 174).

Another delightful anonymous Song painting depicts four children entertaining themselves in a garden with a puppet show (fig. 5). A backdrop for the puppet stage has been resourcefully contrived from a small red-lacquer table with a marble top. A framed landscape painting and curtains hung on a bamboo scaffold complete the theater and conceal the puppeteer. The puppet plays out his scene before the forested mountainscape of the marble panel. Not only has the table been cleverly used, but an upturned stool has become a drum stand. This painting is a playful rebuke to the modern tendency to rigidly classify objects according to function, and illustrates the possibilities that arise when life is seen from a childlike, non-formative point of view.

During the height of the infatuation with rocks, Du Wan's *Yunlin shipu* (Stone Catalog of Cloudy Forest) appeared. Du Wan was the grandson of the great poet Du Fu, and his father enjoyed the company of notable petrophiles like Su Shi. Written as a kind of guidebook for collectors and connoisseurs, the catalog was published in 1133, and contained 114 entries on fantastic stones from almost every part of China. Included are large sculptural stones like those from Lake Tai; stones suitable for cutting into slabs for screens, tabletops, and ink pallets; and small stones that could be used for playing *weiqi*. Here the reader learns that Ouyang Xiu's "Guo stone" screen panel was from Guozhou in western Henan, and is figured with mountain peaks and valleys on a pale yellow background (Schafer 70). Or that another stone, from Fenghua in western Zhejiang province, and also cut into screen panels, is yellow with marked cleavage bearing black stains that suggest forest scenes and whirling mists (Schafer 74).

Cao Zhao's *Essential Criteria of Antiquities* also included many entries on rare stones. Like Du Wan, Cao had been influenced from an early age by his father, and shared his passion for collecting and studying antiquities. *Essential Criteria* was written to share his deep knowledge, and described a number of stones suitable for cutting into slabs for screens and tabletops, including agates. Bamboo-leaf agate (*zhuye manao*) is described as a brownish-yellow ag-

ate with markings resembling bamboo leaves. Another agate (*tumanao*) was found in Yizhuo (modern Shandong). Of the latter, Cao writes:

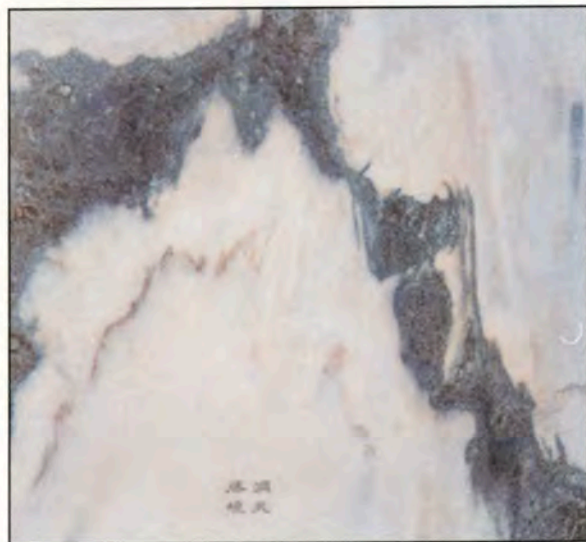
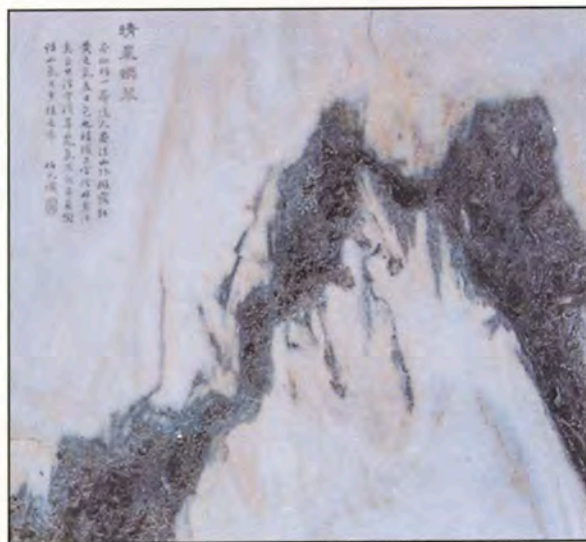
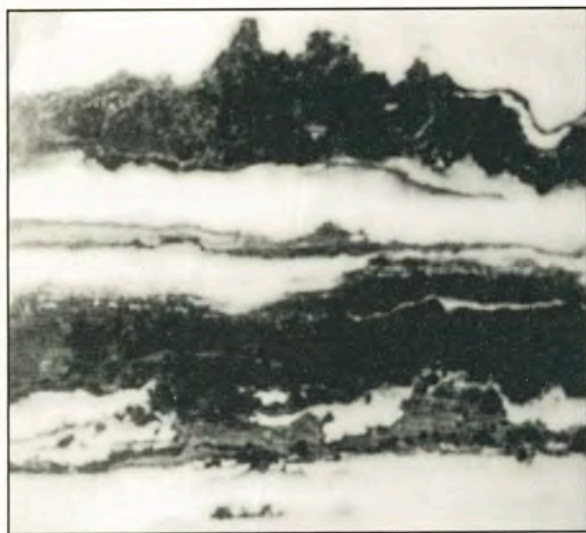
Fine specimens have a good deal of red color and a fine smooth texture, and show no veins of coarse stone. Regarding the markings, the best of them are shaped like walnuts; the next best have patterns like large cloud-shaped pieces and resemble entangled silk; the next best, large patches of red and white. It is hard, but may be cut into plates with an instrument and an abrasive, and set into tables, couches, or screens. It is also called *jinxu manao* (variegated rhinoceros-horn agate). (David 160)

In Shandong province, not long after Cao's publication, a group of full-size furniture, together with miniatures, was entombed with the tenth son of Emperor Hongwu, Prince Zhu Tan, who died in the twenty-second year of the Hongwu reign (A.D. 1411). One of the four excavated full-size tables, now in the Shandong Provincial Museum, is a recessed-leg side table with humpback stretchers and a stone panel (see Wang 1990 II B39). According to Wang Shixiang, the stone panel was made from a local colored agate with figured veining. It is probably the same as the Shandong agate that Cao described. The small *huanghuali* table screen in figure 10 also has an agate panel whose coloring, texture, and markings like walnuts or billowing clouds all neatly fit Cao's description.

Although stone had been quarried from the Diancang Mountains near Dali for at least eleven hundred years, it did not receive much recognition until the last half of the Ming dynasty. As Dali stone is recorded neither in Du Wan's *Stone Catalog of Cloudy Forest* nor in Cao's *Essential Criteria of Antiquities*, some doubt is cast upon the authenticity of Mi Fu's inscription on the inlaid panel of the red-lacquer stand (fig. 1), which states that the stone is from Diancang. Dali is in the remote regions of southwestern China, isolated by numerous mountain ranges and dangerous rivers. Historically, this region (modern Yunnan) was also cut off from the main center of ancient Chinese civilization. As the Nanzhao Kingdom, established in 738 A.D., it remained strong and independent. It conquered much of Burma, attacked parts of Laos and Cambodia, and repeatedly invaded China's Sichuan region in a border war that helped to weaken the Tang dynasty. In 937, a Bai official (the Bai minority is one of Yunnan's most numerous and prosperous ethnic

Fig. 5, facing page. Anonymous, "Children Playing," Song dynasty (960-1276). Hanging scroll; height 120.3 cm, width 77.2 cm. National Palace Museum, Taipei.





groups) usurped the throne and renamed the realm the “Kingdom of Dali” (Dali Guo). The kingdom came to an end in 1253 at the hands of Kublai Khan, who resettled the region with Moslems for political stability. It was the last region subdued when the Ming finally overthrew Mongolian rule in 1382, and again one of the last areas to be conquered by the Manchus. It is not out of the question, however, that some unidentified material like Li Deyu’s *xingjiu* stone made its way north along a southern trade route that linked India to China through Yunnan.

In his *Diancang shan zhi* (Records of the Diancang Mountains), the Jiajing (1522-56) official Li Yuanyang (1497-1580), a native of the Dali region, recorded the famous “white stone with black veining resembling mountains, rivers, and figures that comes from the waist of Diancang mountain,” which local workers cut into screen panels. He called it *diancang* stone, and described its appearance as resembling a “*shanshui* painting, or like grasses and trees” (Li Yuanyang). The name *dalishi* first appears when the Wanli official Li Rehua (1534-1634) recorded two sentences in his *Liuyanzhai* (Studio of the Six Inkstones) concerning a “surrounding” (*huanlie*) screen with *dali* panels that he had seen with “patterns reflecting the inspiration of the four great landscape painters, Jing (Hao), Guan (Tong), Dong (Yuan), and Ju (Ran)” (Zhang Lunyuan 7).

In *Zhangwu zhi* (Treatise on Superfluous Things), Wen Zhenheng (1585-1645) also praised *dalishi* highly:

The best are white like jade with black ink markings. If the white is somewhat bluish, or the black somewhat grayish, the quality is inferior. Old stone that appears naturally like a landscape painting with misty clouds—resembling Mi’s paintings—is the best. The ancients used it in screens. Now they have started using it to make tables and couches, but the result is not as fine.

(Wen, *juan* 3, 4b)

Fig. 6, above left. Framed hanging marble screen panel, eighteenth century. Chan Shing Kee, Hong Kong.

Figs. 7a and b, center and below left. The two sides of a marble landscape panel, eighteenth century. Hugh Moss collection, Hong Kong.

Fig. 8, facing page. Serpentine panel from a demountable wine table, seventeenth century. Huanghuali; top 91.3 x 57 cm; height 85.5 cm. Museum of Classical Chinese Furniture, Renaissance, California.



Xu Hongzu's *Xu Xiake Youji jilu* (Records of a Wanderer), written during the Chongzhen reign (1628-1644), notes that when he visited Dali he saw two landscape panels seven *chi* wide in a Buddhist temple. He also mentions that the new stone quarried from the eighth peak (Zhonghe Mountain) was fantastic, and that one building in the area housed fifty panels of stone all two *chi* in width, and all with *shanshui* markings (Xu).

During the Yongzhen reign (1723-35) of the Qing dynasty, Li Guo recorded more stories about Dali marble screens.

Guo Zi's study had one screen made of white marble inlaid in a wooden frame. The veining was like a painting with mountains layered upon mountains. In the center rose five peaks. Their forested slopes were refreshingly green. There were caverns and streams. Below, the mountain slopes reached out to a sandy shoreline and open waters. It reminds one of the beginning of autumn. The inscription read, "Autumn Mountains after a Rain." The height was two *chi*, and the width about a quarter more. Originally it belonged to the Yu family of Jintan. It was part of their collection for more than two hundred years. A clan member who had become a magistrate of the district inherited a large deficit, however, and miscellaneous personal possessions were sold to restore the treasury. This is how it fell into the hands of the Guo family. The Yu family had been a wealthy family in Jiangnan, which produced many famous scholars. The screen had been part of a group with three additional panels depicting winter, summer, and spring scenes, which have

now all disappeared. Guo Zi said this screen felt as though the sky was heavy with rain. It had massive peaks and dark green trees enshrouded in mist, so that you could almost touch the moisture. The energy was wonderful to experience. In Shangqiu I also experienced Song Shanshu's marvelous screen. It was not larger than one *chi*. In the distance were vast mountains. Below there was a fisherman in a boat casting a net. It was like a painting by Huang Dachi (Huang Gongwang, Yuan dynasty). At that time I composed a poem praising its beauty. I really do not know which screen was more beautiful. (Li Guo 69)

Li's two descriptions could also refer to a framed mountainscape panel in a private collection in Hong Kong (fig. 6). Lofty peaks rise over gentle hills, which extend to quiet waters where a single boat journeys along its way.

Perhaps the highest praise of stone from Dali was sung by Ruan Yuan (*hao* Bo Yuan, 1746-1849) during the middle of the Qing dynasty. A connoisseur and master of seal script calligraphy, Ruan Yuan was given access to the imperial archives while editing two volumes on precious stones (*Shichu baoji*). He was a popular writer during his time, and wrote at least twelve articles on *dali* marble. He was also the governor of Dianqian (Yunnan and Guizhuo) for a period of time, and it was probably then that he visited Dali. In the fore-

word to his *Shihua jixu* (Records of Stone Paintings), he wrote the following:

Although Dian is an old place with a long history, there was not much contact until the Ming dynasty. Now the area produces many colorful materials. The people who live in the mountains select them and sell them. A thousand people rely on this trade to make a living. Stones come in five different colors. Those like clouds and water can be compared to the Wu school of painting, but are even more natural than what can be achieved with a brush. When living in Dian, I selected and purchased tens of tens of panels. Many were given inscriptions and presented as gifts to friends or sought out by the younger generation. (Zhang) Lanbo and others also bought stones in the market and asked me to write inscriptions. I chose those most like classical paintings, which immediately gave rise to poetic inscriptions. These were handed over to Lanpo and his son-in-law (Yinzeng) to carve the inscriptions. There were so many I can only remember about half.

(Ruan 66-67)

Ruan Yuan went on to say, "A beautiful stone is a wonderful natural creation. Until it has an inscription, however, it is still somewhat without order." The origin of inscriptions may lie partly in the inscribed stelae erected to commemorate imperial rites, such as those placed by the Qin emperor and the Western Han emperor Wudi on Mount Tai. The practice of placing inscriptions on stones solely because of their aesthetic qualities began somewhat later. A stone from Li Deye's Pingquan estate was inscribed "Youdao" (Possessing the Way) (Hay 34), and a number of stones in the Song emperor Huizong's Genyue garden bore inscriptions. The colors, texture, and veining of decorative stone panels can produce a myriad of images depending upon the viewer's state of mind and his orientation. Viewed from the front, the serpentine panel of a *huanghuali* table (fig. 8) can remind one of peering out of a cave or a box canyon through fantastic rocks. From one end, the vertical panel resembles a mountain landscape viewed from another hillside across a river flowing into distant waters. Viewed again horizontally from the other side, a moment is captured when the tormented spirit and carnal anguish of a grotesque figure dissipate into the ever-changing, unchanging void. An inscription served to formalize a

particular artistic interpretation, thereby immortalizing the panel as a complete artistic creation.

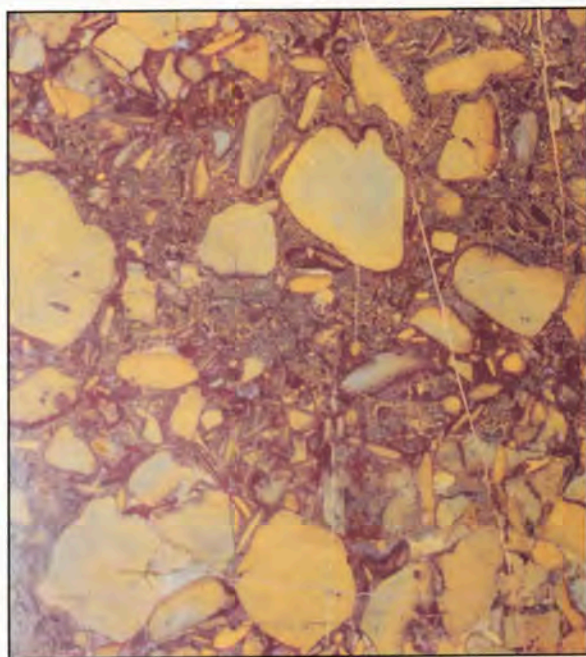
Exceptional panels were well figured on both sides, like the fantastic mountainscape in the Hugh Moss collection, which is inscribed with the seal of Bo Yuan (Ruan Yuan) (figs. 7a, b). Following a traditional four-character inscription is a poem that praises the peak as a Daoist paradise. The back also is appropriately inscribed with four characters that read, "Looking out from inside a cave in the mountain"—such caves often provided shelter for wandering Daoist and Buddhist hermits.

During the past century the term *dalishi* has become a generic Chinese term for any kind of marble. Recently, while riding in a taxi in Taiwan, I was excited to see a marble shop advertised as a *dalishi* shop. The next day I returned to the shop, only to find out that they stocked more Italian marble (*yidali shi*) than Chinese marble, and none from Dali. The English word, "marble," is used almost as freely. From a commercial point of view, "marble" refers to any decorative stone that can be quarried in large firm blocks and sawn into slabs, and whose surface is capable of receiving a high polish. As well as true marbles, this category also includes serpentine, onyx, and conglomerates.

True marbles (figs. 1, 6, 7, 12, 15-17, 21, 22) are either calcitic limestone or dolomitic limestone that

Fig. 9, right. Detail of conglomerate used for the top panel of an eighteenth-century hongmu stand. Possibly *zidouban* (see glossary).

Fig. 10, facing page. Small table screen with tumanao panel, seventeenth century. *Huanghuali*; height 33 cm, width 30.2 cm, depth 17.1 cm. Private collection, Taipei.



has been metamorphosed by heat and/or pressure through geologic time. Although of diverse origin, limestone is often formed in oceans and lakes by the compression and cementation of white granules of calcium carbonate from the shells and skeletons of animals. Limestones are radically transformed by great pressures within the earth's crust or by intense temperatures generated from pockets of molten magma from the inner core. Once metamorphosed, the resulting "true marble" is distinguished by a visible crystalline structure and pure colors. Impurities impart distinctive veining and coloring. Gray and black veining can be the result of organic carbons, and other colors can be produced by varying amounts of minerals and oxides (Mannoni 38, 58). Marble may be tested by applying a mild solution of hydrochloric acid to an inconspicuous area. A true marble will effervesce, which is the natural reaction of acid with its constituent, calcium carbonate. (The magnesium carbonate in dolomitic marbles does not react as strongly. If the surface is scratched, however, it will also effervesce.) True marble has a hardness of three on the Mohs scale, indicating that it can be easily scratched with a knife.

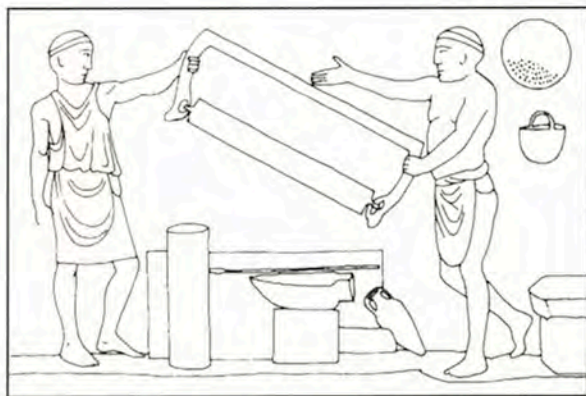
Many green decorative stones have historically been classified as true marbles in China as well as in the West because they possess similar characteristics and decorative qualities. True marbles are rarely green, however. Most of the green decorative stones



are forms of serpentine, which, although somewhat of a mystery to modern geologists, is thought to be highly metamorphic and composed mainly of hydrated magnesium silicates that have oozed upward from beneath the ocean floor (Mannoni 42). It is often embellished with snakelike ribbons of color, thus the name "serpentine" (figs. 8, 19, 20). The modern Chinese term for serpentine is *shewenshi*, or literally, "snake-patterned stone." Unlike a pure true marble, which has a compact and homogeneous structure, serpentine has veins of talc, dolomite, and magnesite that mark lines of weakness and give it a splintery fracture (Richardson 304). These lines also delineate the oft-acclaimed landscape scenes in which mountain peaks rise one behind another. Today, serpentines are found in almost every province in China, with colors usually ranging from dark green to light yellowish-green; yellow to brown varieties, however, are also found (Zhao Songling 388). They generally have a dull to waxy luster and a surface with a somewhat greasy feel. Serpentine can be a relatively soft stone that is easily cut with a knife (three on the Mohs scale), although variations of mineral content can make it much harder (four to six on the Mohs scale) (Pirsson 330).

Although often appearing to be a man-made material, conglomerates (*jiaolishi*) are a natural phenomenon composed of rounded fragments of rocks and minerals held together by a cement of finer material (fig. 9). Rounded by the abrasive tumbling action of water, these fragments can vary in size, shape, color, texture, and hardness. The cement may be consolidated sand, limestone, clay, or all three mixed with iron oxides. If there is a sharp contrast between the relatively large pebbles and the fine matrix in which they are encased, and the surface is also capable of a good polish, the conglomerate is called a "puddingstone." When the fragments are not worn smooth by abrasion before consolidation, yet remain sharp and angular, it is called breccia. Different types of conglomerates or breccias may have little in common other than the fact that they are composed of fragments bound together with a cement of finer material (Pirsson 245; Stevens 158).

The Chinese agate *manao* or *tumanao* belongs to the quartz family. It is believed that agates were created by volcanic action, which formed cavities filled with gases. Into these gaseous pockets minerals precipitated and, after solidifying, formed layers and



bands of color arranged concentrically parallel to the original walls of the cavity (Hurlhut 242-245). After the softer material in which they were encrusted has eroded away, they are often found as various sized boulders in river beds, along the seashore, or scattered in agate beds. When sliced, the convoluted striations (fig. 10) must have reminded the early Chinese of horse brains (*manao* 馬腦) perhaps seen on the battlefield, thus the homophone with jade radicals developed (*manao* 瑪瑙). Most agates are relatively small; those large enough to be used for tabletops are exceedingly rare. Moreover, agates have a hardness of seven on the Mohs scale, similar to that of jade, and thus are considerably more difficult to cut and polish than are marbles.

Viewed over the course of tens of millions of years (only single lifetimes in geological time), the crust of the earth is in a state of constant flux. The movements of tectonic plates colliding, shearing, and separating can cause stratified deposits of materials to shift upward. Some have been folded upwards, coming to light in mountainous areas. The rugged mountainous region of Dali in southwestern Yunnan province is a classical example of this type of formation. Here, geological folding is evident in the series of parallel mountain ranges extending north to south, caused by the northward migration of the Indian tectonic plate that is lifting the nearby Himalayas. One of these geological folds forms the Diancang Mountains, also called the Dali or the Lingjiu Mountains. This range consists of nineteen peaks, from which eighteen streams flow to the east to feed Ear Lake (Erhu). The central peak is called Zhonghe peak. High on this mountain is a stratum of marble locally called the "Jade Belt Lock" (*yudaisuo*), which in the past was repeatedly cited as yielding the

most interesting stone (Zhang Lunyuan 8). Today there are more than thirty quarries in the Diancang range, as the mountains on either side of Zhonghe are slowly being developed. All consistently produce high-quality stone (*Zhongguo gongyimeishu* 346).

By the late Ming period, stone from Dali had become the premium choice for screen panels. Wen Zhenheng ranked *dali* marble as the most desirable, *qiyang shi* as a second choice, and *huarushi* as a third choice (Wen, *juan* 6, 5a). According to Wen and Cao, *qiyang* stone, also called *yong[zhuo] shi*, was found in the mountainous regions southwest of Yongzhuo in Hunan province. It was a relatively soft, inexpensive stone that could be cut into panels for tables or screens. The color of its veining ranged from dark purple (considered superior) to bluish, and suggested mountains, rivers, the sun and the moon, or human figures (David 161; Wen, *juan* 3, 5a). During the Wanli reign, fifty slabs of *qiyang* marble were commissioned for the Qianqing Hall of the Imperial Palace and, according to Wang Shixiang, *qiyang* could be found a few years ago at a stone shop on the outskirts of Beijing (Wang 1990, 154).

Huarushi, also called *huarushi*, is a sulfur-yellow stone with white markings. Its veining suggests *shanshui* landscapes and images of aquatic creatures and animals, making it especially suitable for screen panels. It is quarried in southern Jianzhou, just north of Dali. A similar stone is also found in Shanxi (Zhang Hongzhao 14ab).

Decorative stone for table or screen panels was found in many areas in China. In the north, in Dashiwo in Fangshan county near Beijing, both *hanbaiyu*, a white marble, and a bluish-green stone called *aiye qing shi* (mint-leaf green stone) were quarried; a green stone called *hushanshi* was also quarried in the Qiyang region (Wang 1990, 154). A white marble with black markings called *guangpian* was quarried in Guangdong, and closely resembles that from Dali (Zhang Lunyuan 15). The mountainous regions in southwestern Henan yielded a green stone called *nanyang shi* (David 161).

Today, there are hundreds of names for decorative stone; a name may reflect the origin of a stone or its particular esthetic qualities. Often a stone is called by more than one name. A researcher who went to Dali in the beginning of this century was surprised to discover that many native stoneworkers there had never heard of *dalishi*, knowing only the local term

chushi (plinth stone) (Zhao Dehou 50). In the early Qing period, it was recorded that *yushi* (榆石) comes from the Diancang Mountains (Liu 42). That term may be related to the name of a district called Yeyu (葉榆) near present-day Dali, which was established by the Han ruler Wudi (Zhao Songling 443).

A single region and even individual quarries often produced several types of stone of various colors. Today, stone from Dali can be divided into at least three categories. *Shuimoshi* is the traditional *dalishi*—a white marble with ink-black veining, resembling traditional Chinese inkwash painting. *Baiyunshi* is a pure white marble. *Caihuashi* includes colored stones, the most treasured of which are green stones, but a range of other hues exists, including red, yellow and green, and purple. Another subdivision is *yunhuishi* (cloudy gray stone). The gray-and-white background of *yunhuishi* has black-and-gray wave patterns, so it is called *shuihuashi* (Zhongguo gongyimeishu 364).

Depending upon the local geology, stone is usually quarried from open pits or from deep mines. Early Qing records note that stone from Diancang was found deep in the mountainside—more than

a *li* deep—and the workers had to do their utmost to extract it (Liu 42). In the early part of this century it was further explained:

Mining from the Diancang Mountains is often quite difficult because one must go ten to thirty *zhang* (one hundred to three hundred feet) deep to find the stone. This place is called the “old crow level” (*laoya ceng*) or the “cow horn level” (*niujiao ceng*). The ground is extraordinarily hard. The energy of nine oxen and two tigers must be expended! (Zhang Lunyuan 8)



Fig. 11, facing page. Roman marble cutters. Drawing of a detail from a bas-relief at Ostia. After Mannoni 134.

Fig. 12, above. Marble screen panel of a large standing screen, seventeenth century. Huanghuali; height 214 cm, width 180.9 cm, depth 104.7 cm. Museum of Classical Chinese Furniture, Renaissance, California.

Fig. 13, right. Huangshan (Yellow Mountains), in Anwei province, the view called “The Ravine of the Western Sea.” After Huangshan, plate 39.



These deposits are found at some of the highest altitudes in the Diancang Mountains. It is extremely cold and the snow does not melt until summer. Men worked in the quarry mines and lived on the mountain in caves or stone shanties built from the waste removed from the tunnel that led to the "old crow level." Strong women carried stone on their backs down narrow, winding trails to family workshops in town. An ancient Dali legend relates that Chinese invaders once encountered an old woman carrying a large piece of stone. After she told them that her strength was nothing compared to that of the young men of her country, they fled in terror (Nagel 1243). More recently, Zhao Dehou recorded that rough stone was taken to Plinthstone Street (*Chushi jie*), three miles (*li*) north of Dali. There, more than three hundred families lived who specialized in cutting and polishing stone (Zhao Dehou 51).

Zhao Dehou had gone to Dali to research *dali* marble. A guide took him to a stone mine on Sanyang Mountain, one of the nineteen peaks of the Diancang Mountains, where a decorative green stone was quarried. The cave quarry he visited was thirty to forty feet deep; however, he was told that some were one to two hundred feet deep. Hommel had witnessed blasting in Jiangxi province during the early part of this century (Hommel 8), and Zhao was also told of this relatively primitive method of using gunpowder to dislodge the stone. After the explosion, the fragments were carried out and the best were selected for cutting and polishing. How long gunpowder has been used for blasting stone remains a question, although it is well documented that the Chinese were using gunpowder since the Song dynasty. Zhao was told by one of the quarrymen that stubborn stones that did not give way were cut with the old method of chiseling (Zhao Dehou 58).

Using explosives to dislodge stone is not only wasteful but dangerous, with the potential of collapsing the cave as well as causing rock slides. A stone memorial found during the Song dynasty stands at the entrance to an inkstone cave, and records that hundreds, including the imperial eunuch Yan Zaiken, perished when the cave collapsed for unknown reasons (Wu, *juan* 3, 2b). Quarrying stone from caves is fraught with tremendous difficulties, and probably most casualties were never recorded. In some areas it was not possible to work for several months of the year, because the depth of snow re-

stricted movement and supplies. In others, where it was necessary to dig down into the earth, mining could occur only in the winter when the ground was frozen, because as soon as the spring thaw arrived, the runoff from melting snow filled the caves with water. During the Qianlong reign, a bucket brigade of two hundred laborers spent three and a half months bailing out an inkstone cave that had filled with water, only to see the cave occupied by a ferocious tiger three months later (Wu, *juan* 3, 6b-7a). The water problem could be avoided in the mountains, where it was possible to slope the cave tunnel upward toward the deposits.

It is likely that much stone was also taken from open-pit mines (*mingkeng*) like the famous marble quarries in Carrara. Hommel found that techniques used for quarrying stone in China resembled those commonly used in Italy until the development of mechanized wire saws at the end of the nineteenth century. Wooden wedges were first driven into a line of chiseled holes, and then soaked with water. The expansive pressure of the swelling wedges eventually caused the stone to break along the line. A similar technique using metal wedges pounded into a line of square chisel holes also split the stone along natural cleavages (Hommel 12).

Marble (calcite) is a relatively soft stone. With a Mohs scale hardness of three, it can be easily scratched with a knife. Manageable blocks of stone were cut with an iron saw much like a carpenter's saw, with a thick blade that has no teeth. The Song "Stone Catalog of Cloudy Forest" records that iron blades, with water and sand applied as an abrasive, were used to cut thin stone slabs (Schafer 96). This ancient technique was used in the West as well as the East. A copper stone saw dating to the Mycenaean period (1450-1200 B.C.) was found on the island of Crete, and a bas-relief at Ostia illustrates a Roman marble cutter and his assistant at work, surrounded by all the necessary equipment: a saw with a wooden frame about one and a half meters long, a sift and bucket for sand, an amphora for water, another amphora cut in half lengthwise to pour the mixture of sand and water, and pieces of string to mark the marble (fig. 11). With the advanced metallurgical techniques developed during China's Bronze Age, it is not surprising that a wire jade saw was one of several bronze tools excavated from an earlier period at the Xia (2205-1765 B.C.) level at Erlitou in Yanshi (Yee 29).

Regardless of the manner of its extraction, it is the initial relatively smooth cut through the stone that reveals its potential to a trained eye. Most stone quarried from the Dali region was used in construction—to decorate walls, floors, stairs, inlaid frames, balustrades, etc. Much more rare was the highly figured stone suitable for screen panels or furniture inlays. The stone cutter's skill and expertise was revealed by his ability to select a stone and judge how it should be sliced to maximize its artistic potential. Cutting a stone with a Mohs hardness of three to four using a handsaw probably required one or two men anywhere from three to five hours per square foot, so efficiency must have weighed heavily in the decision.

After the panels are cut, the surface must be ground flat and polished to reveal its beauty. The roughness of the surface could be smoothed with chisels to remove any high spots. One method used to flatten the surfaces of two panels simultaneously was to lay the two surfaces together with water and river sand in between and rub them back and forth. Afterwards, progressively finer grade abrasives were used to polish the flattened surfaces. Powdered soapstone was sometimes used to burnish the surface (Schafer 70). Because the veining in marble has a three-dimensional nature that can shift or even disappear as successive layers are removed, the ability to expose a beautiful image required much experience. A panel that attained an interesting figure because its surface had been hollowed by hand was considered inferior (Zhang Lunyuan 10).

In the official records for the construction of the Garden of Perfection and Brightness (Yuanmingyuan), it is recorded, "The price rates for the rough and fine cutting, chiseling and laying of yellow stone apply to bluish stone. Increase the rates by a half time for the rough and fine cutting and chiseling of purple stone" (Wang 1990 I 155). This purple stone was probably a harder material. Not all stones have the same hardness. Although many of the green serpentine panels used in furniture have a hardness similar to marble, variations in mineral content cause the hardness to vary. Agate panels, whose hardness is nearly the same as jade, require considerably more time and effort to cut and polish.

Because of the rarity of beautiful stones and the rising popular demand for them, inferior ones were sometimes embellished with chemicals and dyes. The practice of reworking Taihu rocks into more desirable shapes had been practiced at least as early as the Song dynasty. An artificial patina was restored to freshly worked surfaces by returning the rock to the bottom of the lake. Sometimes rocks were even artificially darkened with smoke or dye to imitate the color of *lingbi* stones (Schafer 53). Fakers also learned to enhance the veining and imagery of otherwise uninteresting stone panels, sometimes adding mountains, clouds, or even waterfalls (Wen, *juan* 3, 4b). Not even the highest ranking officials could avoid being deceived. The mid fifteenth-century connoisseur Wang Zuo described the distressed large marble screen panel he had seen at the home of the vice-president in Nanjing. It was "about four *chi* tall, on which there were three mountain peaks. These were not entirely natural, for they have been touched up with chemicals and in places scraped with a knife. The result of these processes is not at all pleasant" (David 161-2). Wen Zhenheng also noted that touched-up stones occasionally fetched quite high

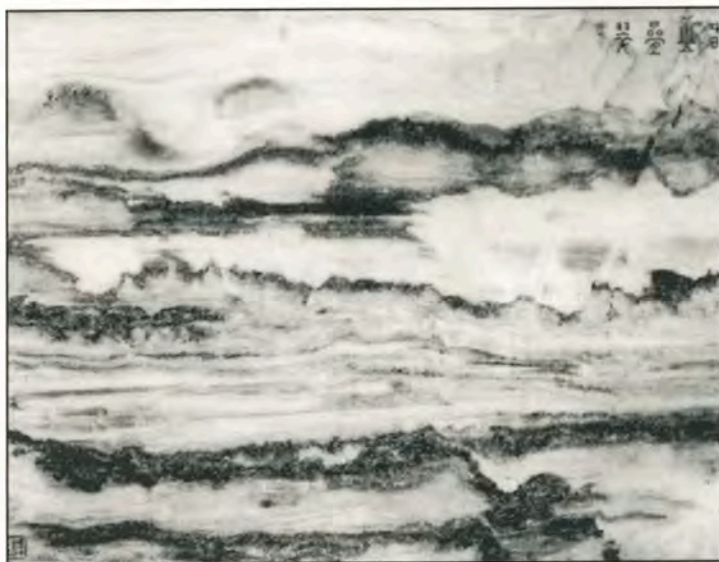
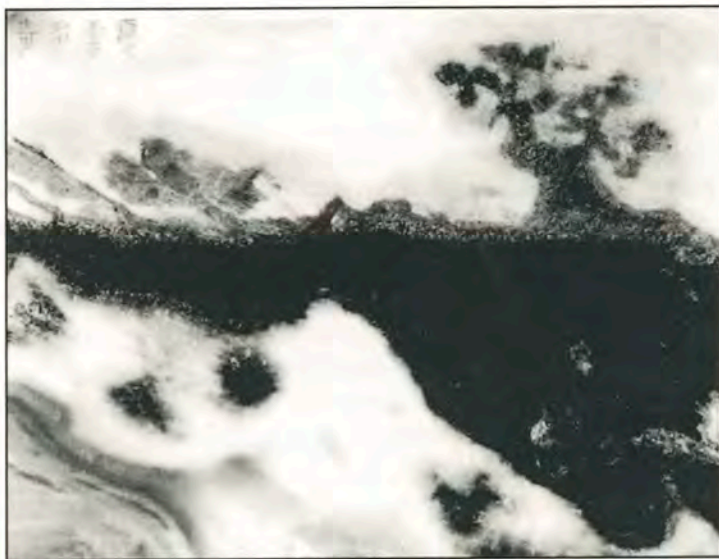


Fig. 14. Table screen with stalactite panel, seventeenth century. Huanghuali; height 47.3 cm, width 36.2 cm, depth 17.1 cm. Museum of Classical Chinese Furniture, Renaissance, California.

prices (Wen, *juan* 3, 4b). Cloudy or hazy surfaces, or evidence of marking that might be only on the surface and not penetrating through to the other side, are possible signs of artificial embellishment. A careful examination of the surface and edges can usually reveal whether a stone has been altered.

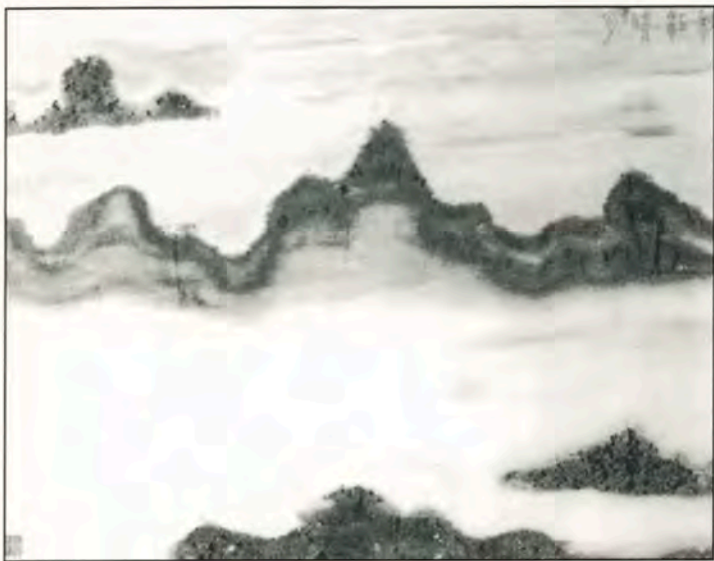
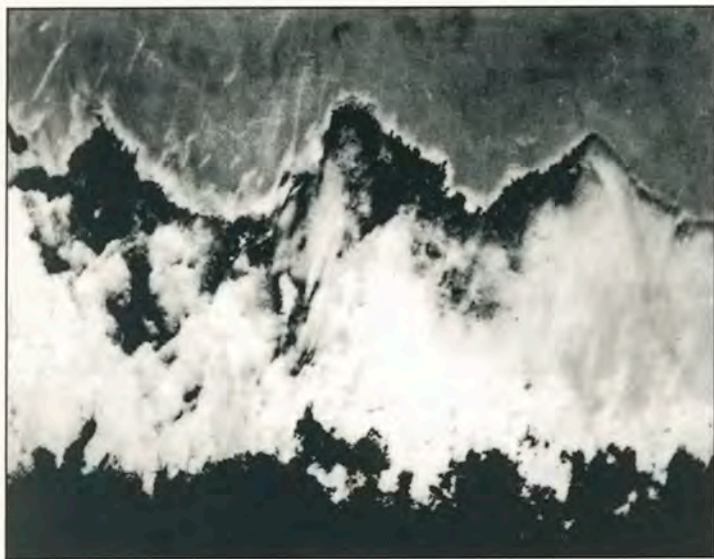
The porosity of true marble makes it susceptible to atmospheric pollution. Zhang Lunyuan, who compiled a treatise on Dali stone during the first half of this century (*Wanshizhai dalishi pu*), lamented the many dirty, discolored marble screens that he had seen in the homes of lower officials (Zhang Lunyuan 20). They had probably been exposed to incense and brazier smoke. The beauty of these neglected treasures can be partially restored using abrasives to remove a thin layer of the polluted surface. Today, wax is then often applied to the dulled surface, imparting a soft luster through which its beauty can be seen. This method has been used since the turn of the century; however, there was already a lack of consensus at that time regarding its suitability (Zhang Lunyuan 10). The criticism probably arose from the fact that, like smoke, wax also migrates into the stone and can even more quickly cause discoloration because pollutants are attracted to the soft, sticky surface. Like many short-term solutions, the use of wax avoids the more labor-intensive method of polishing with finer and finer abrasives to reach the desired luster. Properly polished surfaces can be maintained by regular cleaning with a soft, damp cloth.

Stone panels with artistic figuring that gave rise to poetic expression were generally selected for screens. As previously noted, exceptional panels were well figured on both sides. Also very rare are large panels like the one found in the large standing screen in the collection of the Museum of Classical Chinese Furniture in Renaissance, California; the panel may have been quarried in the mountainous regions of Dali (fig. 12, p. 15). The surface is worked by hand to subtly emphasize the stratified layers, creating an im-



pressionistic mountain scene. Those who have made a pilgrimage to the Yellow Mountains will find that the stone's scene of misty clouds swirling about jagged, yellow-rimmed peaks is quite familiar (fig. 13, p. 15). The resemblance is so striking that an inscription would almost seem redundant. Closer study reveals, however, that the yellow tint in the marble may have appeared after the panel was cut. The dark veining containing the mineral amphibole has traces of iron, which has oxidized and migrated into the crystalline areas of the panel over the centuries to impart amber hues and highlights.

A small table screen in the Renaissance collection has a unique stone panel colored in beige pink to burgundy tones with touches of gray (fig. 14). It



evokes images of clouds, ghosts, mountains, birds, and eyes, like those treasured in inkstones. Although frozen in stone, this cosmos is filled with energetic life that is particularly delightful to the eye. The panel is quite possibly a horizontal slice from a stalactite (*zhongrushui*), like those found hanging in the caves of Mount Emei (Zhang Hongzhao 16a). These relatively soft formations are created through a process of secondary mineralization and precipitation from mineral-rich ground waters dripping inside caves.

Figs. 15a-d. The Four Seasons represented in four dali marble panels in wood frames. Eighteenth century. Facing page, above, Spring; below, Summer. This page, above, Autumn; below, Winter. Length 63.5 cm, height 49.5 cm. The Nelson-Atkins Museum of Art, Kansas City, Missouri. Purchase: Nelson Trust, 59-76/1-4.

Wen Zhenheng briefly discusses an unusual table screen he calls a brush screen (*biping*), which he had apparently seen but not appreciated. "There are those with old *dalishi* panels a little under a foot in size that are placed upon tables; however, they are all disgusting and should be dispensed with" (Wen, *juan* 7, 3ab). Although not to Wen Zhenheng's taste, one such screen was so treasured by the Ming scholar Zhu Shoucheng that it was entombed with him during the Wanli period. This small table screen is made from *zitan* with a *shuimo* marble mountainscape panel. Below the marble panel is a small brush stand, shaped like a waisted table with horsehoof feet. In the tabletop are four holes in which to place brushes (Li Chu-tsing 69G).

No records of hanging stone screens (*guaping*) dating prior to the Qing dynasty have yet been found. The Nelson-Atkins Museum of Art in Kansas City, Missouri, possesses a remarkable set of four single framed panels, each with a seasonal inscription—"Many Shades of Green on Spring Hills," "Many Wonders of Summer Clouds," "Bright Moonlight on the Autumn Stream," and "Winter Peaks Hoard the Snow" (figs. 15a-d).

Tiandi hanging panels, with a round marble panel above and a square panel below, may have appeared in the late eighteenth to early nineteenth century. The round *tian* (heaven) panel displayed ethereal imagery, like clouds or mountain peaks representing the Isles of the Immortals. The square *di* (earth) panel below represented more terrestrial imagery, such as rivers or lakes with distant mountains. In many of the garden pavilions in Suzhuo, *tiandi* screen panels are found in sets of four, often with a secondary theme of the four seasons.

The use of decorative stone panels in more functional pieces of furniture dates at least to the Song period, where inlaid tables are not uncommonly portrayed in paintings. However, aside from the lacquered stand attributed to Mi Fu and Zhu Tan's agate panel tables, few early pieces have sur-

vived. Until the late Ming period, such tables were found mostly among the gentry and ruling classes. In the Wanli period (1573-1619), the aristocratic Wen Zhenheng still approved the use of *dali* and *qiyang* stone for inlaid railings of couch beds, tabletops, and chair backs. And yet, during this same period, the novel *Jin Ping Mei* records that households of unsophisticated yet wealthy merchants were furnished with fashionable *dali* marble inlaid beds (*Jin Ping Mei* 53/3) and tables inlaid with agate (*Jin Ping Mei* 45/5a). Illustrated in the Chongzhen (1628-1644) *Jin Ping Mei* woodcuts is a couch-bed with marble panels in the railings (Evarts 27), closely resembling a *tieli* wood *chuang* with cloudy gray marble panels dated to the same period (fig. 16).

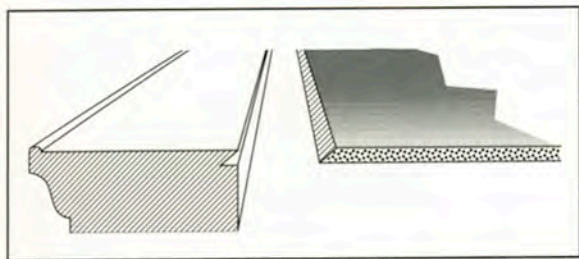
With the exception of screens, tables provide the most numerous examples of late Ming furniture inlaid with stone panels. Decorative stone tabletops were not only beautiful to look at, they were also a practical surface—easy to clean and unaffected by heat. How many wooden tabletops did not suffer burns from incense embers, scalding pans, or some other accidental abuse? Wen tells us that both long and short wall tables (*bizhuo*) used as altar tables should not be too wide, and can be inlaid with *dali* or *qiyang* stone (Wen, *juan* 6, 2b). Nevertheless, long side tables with stone panels are relatively uncommon today, although a *huanghuali* table with a pure white marble top and everted flanges—Wen calls them “corners rising (like) floating clouds” (*feiyun qijiao*)—is shown in figure 17.

More common are small tables with decorative stone panels, such as two in

the Dr. S. Y. Yip collection in Hong Kong, although the puddingstone panel in the delicately proportioned waisted side table is a rarity (Bruce 54, 56). Wider tables, sometimes called wine tables and perhaps even used as writing tables or desks, are also found with marble panels, such as the remarkable late Ming recessed-leg table in the Beijing Timber Factory collection (Wang 1986, 171). Its boldly proportioned form is balanced by the decoration of the spandrels, which bear phoenixes carved like archaic jade, and by the magnificent marble panel, which recalls a landscape scene with clouds clearing from a range of majestic mountains.

A unique *huanghuali* table in the Renaissance collection has similar proportions (Wang 1992, 49).





Its rarity lies in the framed serpentine top (fig. 8, p. 11), which is demountable from the legs, facilitating storage and travel. The frame is fitted with five closely spaced transverse braces to cradle the fragile stone panel. Unlike a wood panel, which is fitted into the frame with tongue-and-groove joinery, the four edges of the stone panel are beveled about 45 degrees, and a corresponding beveled groove is cut into the inside edge of the frame (fig. 18). The cut in the frame required special attention, as the backs of stone panels are usually rough and of uneven thickness. Thus, the bottom of the groove as well as the contacting faces of the transverse braces had to be carefully matched to provide even support for the panel.

The common square table is less frequently found with inlaid stone, perhaps because of the large size of panel required. An exceptionally rare pair of *huanghuali* square tables in the Chen Chite collection, Taipei, are beautifully crafted (fig. 19). The humpback stretchers are finely beaded and linked to the aprons with struts shaped like *ruyi* cloudheads. The intensely figured green serpentine panels provide a different panorama for each person seated at the table. Another square table with an inlaid panel can be found in the collection of Henry Kramer, Honolulu (Kramer 67). Its impressionistic *dali* marble panel with fluid veining provides an interesting contrast to the severe, flat-sided form carved with angular scrolling.

Fig. 16, facing page, above. *Chuang* with marble panels, seventeenth century. Tielimu; height 91.4 cm, length 213 cm, depth 112 cm. Chan Shing Kee, Hong Kong.

Fig. 17, facing page, below. *Huanghuali* side table with everted flanges, seventeenth century. Height 89 cm, length 196 cm, width 59 cm. Chan Shing Kee, Hong Kong.

Fig. 18, above. Drawing of joinery of figure 8: the beveled edge of the stone panel and the corresponding groove of the wooden table frame.

Fig. 19, right. Square table with three corner spandrels per leg and serpentine tabletop. One of a pair. *Huanghuali*; top 89 x 89 cm, height 85 cm. Chen Chite collection, Taipei.

A *huanghuali* stand in the Renaissance collection also has a serpentine panel (fig. 20). Similar small stands with marble panels are repeatedly shown in the eighteenth-century illustrations to the novel *Jin Ping Mei*, where they provide a surface for the "Three Friends of Incense." Marble panels were especially suitable for incense stands, as they resisted scorching from the falling embers of incense. The imagery of the panel in figure 20 is fascinating—a landscape scene dominated by a dark volcanic mountain. Here, too, the scene changes according to the side from which it is viewed: birds and dragons; ghost masks; an underwater scene with schools of fish swimming about submerged fantastic rocks; and finally, a distant seaside with waves lapping a long, sandy beach.

Wen praised chairs made of *wumu* with inlaid panels of *dalishi* (Wen, *juan* 6, 3a). Today, chairs made from *wumu* alone would be considered extremely rare. Chairs with inlaid marble backrests are somewhat more common, however, although most date to a later period than his time. A pair of seventeenth-century *huanghuali* yokeback armchairs in Beijing have tastefully selected marble panels that resemble ink paintings of rocky peaks and misty clouds (Tian 22). Each of the four eighteenth-century *huanghuali* horseshoe armchairs in the collection of the Museum of Classical Chinese Furniture has a round marble panel at the center of the splat (fig. 21). Each marble panel has a distinctive quality, perhaps selected to represent the four seasons. One



recalls distant peaks after a storm; another, cruising along an endless river on a summer day; the third, roaming among jagged mountains in the autumn; and the fourth, a snow-covered peak on a crisp, clear winter day.

A square-back folding chair in the Museum's collection is also highlighted by three small marble panels with pure white and ink-black coloring, which are framed by delicately beaded, *kunmen*-shaped openings (fig. 22). The black part of the stone is probably the metamorphic mineral amphibole, which, although relatively soft for a silicate, is harder than the white calcite marble. The difference can be felt by the touch, as the black area is slightly raised.

Many other forms of furniture also are decorated with marble. Although Wen does not mention stools, they are frequently found with marble seat panels. The cool stone was undoubtedly pleasant to sit upon on a hot summer's day. The *tiandi* marble panels can also be found on the doors of small (Ellsworth 63) and large cabinets. The use of this motif may also offer a clue to their dating.

In the late eighteenth century, after successful military expeditions against the Burmese, regular tribute of jade and rubies was transported through Yunnan to Beijing. The development of these transportation routes probably helped the trade in Dali marble to flourish. That it did indeed flourish is seen by the amount of nineteenth-century blackwood furniture inlaid with marble, which became commonplace. Today it is not uncommon to find complete sets of large round tables with six stools bearing matched marble panels, or sets of four chairs with large matched marble panels inset into their seats and backrests.

Fig. 20, right. Recessed-leg table/stand with green serpentine panel. Huanghuali; length 51.2 cm, depth 26.7 cm, height 20.4 cm. Museum of Classical Chinese Furniture, Renaissance, California.

Fig. 21, facing page, above left. Horseshoe-back armchair with inset marble panel, eighteenth century. One of four. Huanghuali; height 90.5 cm, width 52.7 cm, depth 41 cm. Museum of Classical Chinese Furniture, Renaissance, California.

Figs. 21a, b, c, above right. Details of the inset marble panels of the other three armchairs.

Fig. 22, facing page, below. Detail of marble panels inset in the back of a square-back folding chair, seventeenth century. Huanghuali; height 101.3 cm, width 72.1 cm, depth 91.5 cm.

Thus, stone panels became another extravagance of late Qing decoration. The early fascination with stone panels had nothing to do with extravagance, however. They were valued for less material functions. For the true connoisseur, the contemplation of these stones could produce quiet, tranquil moods in which the panels became alive with remarkable landscapes and flowing waters, or with fantastic creatures that appeared and disappeared. In moments like these, as when absorbed in the vastness of nature, the mind can receive profound realizations beyond the scale of a single human being. Stones that have this effect are truly microcosms of the mountains, whose monumental scale and dynamic energies dissolve pettiness and trifles, and reinforce an inner nobility.

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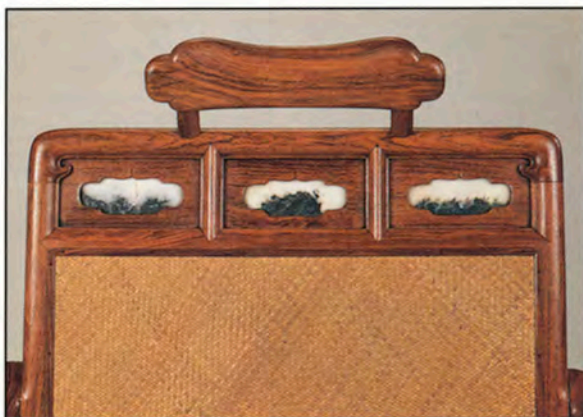
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Glossary of Chinese Terms for Decorative Stone Used in Furniture Inlay and Screens

Aiye qing shi 艾葉青石. (Mint-leaf green stone.)

A bluish-green stone from Dashiwo (Wang 1990 I 154). Most likely a serpentine.

Baihuishi 白灰石. (White and gray stone.)

In Zhao Songling 442. Most likely a generic name for any white marble with gray veining.

Baiyunshi 白云石. (Cloudy white stone.)

In Zhao Songling 442. Most likely a white marble.

Chushi 礎石. (Plinth stone.)

A local term for stone quarried from Dali.

Dalishi 大理石. (Dali stone.)

The term *dalishi* can be interpreted in several ways. It is the modern term for all calcitic or dolomitic marbles. Traditionally, however, *dalishi* refers to all white marbles with black veining like an ink painting. Geographically, Dali *shi* refers to all decorative stone that comes from the Diancang mountain range west of Dali, Yunnan. The four best types are stone with variegated colors (*caihuashi*), cloud-gray stone (*yunhuishi*), pure white stone (*baiyunshi*), and a stone decorated like an inkwash painting (*shuimoshi*). Stones within the category of *caihuashi* are named after their color and luster. Verdant green (*qingcui*) and dark green (*bilu*) are called "green-decorated" (*luhua*). Red stone with a soft sunset glow is called "autumn decorated" (*qiu hua*). Yellow and green ones are called "gold inlaid jade" (*jinxianhua*), and purple ones are called "grape-colored" (*putaohua*). Although all are Dali *shi*, not all are true marbles. The green decorated stone with natural and lifelike scenery, considered the most beautiful and the most rare, is probably serpentine. *Caihuashi* comes from the same quarries where *yunhuishi* is mined, but the reserves are comparatively small and the mining is not easy (*Zhongguo gongyimeishu* 346).

Daoxiang 稻香. (Fragrant rice paddies.)

In Zhao Songling 444.

Diancang shi 點蒼石. (Diancang stone.)

Another name for Dali *shi*.

Fenhe 紛荷. (Powdered lotus.)

In Zhao Songling 444.

Fenghua shi 奉化石. (Fenghua stone.)

A stone from Fenghua, western Henan, also used for screens. It is yellow with marked cleavage bearing black

stains suggestive of forest scenes and whirling mists (Schafer 74). The coloring and cleavage suggest a serpentine.

Fenghuang shi 鳳凰石.

Fifty-six slabs were collected from Yunnan during the twenty-sixth year of the Wanli reign for use in the Qianqing Hall of the Imperial Palace (Wang 1990, 154).

Guangpian 廣片. (Guangdong slab.)

A white marble with black markings produced in Guangdong which resembles *dalishi*. In Zhang Lunyuan.

Guoshi 皴石. (Guo stone.)

A decorative stone from Guozhou, located in a mountainous region of the far western corner of Henan province. Its markings are of "white enclosures in a dark violet matrix, moon-shaped, tortoise-shaped, or toad-shaped. . . . Another variety shows mountain peaks and valleys on a pale yellow background" (Schafer 69).

Hanbaiyu 旱白玉.

White marble from Dashiwo in Fangshan county near Beijing (Wang 1990 I 154).

Hanbaiyu 漢白玉. (Chinese white jade.)

In Zhao Songling 444. A white marble.

Hanshui shi 寒水石. (Cold water stone.)

A pure white marble. In Zhang Lunyuan 5. This term also refers to calcite (Needham 167).

Hanghui 杭灰. (Hang[zhou?] gray.)

In Zhao Songling 444.

Hongsi shi 紅絲石. (Red-line stone.)

"This stone is similar to Chinese agate, but neither as fine nor as mellow. It has red lines on a white ground" (David 161).

Hushan shi 湖山石. (Hushan stone.)

Possibly from Hushan in Zhejiang. A "blue-black stone that resembles Taihu stone. Its markings resemble those on scented dice cedar. This stone is hard, and may be cut into plates and used for inlaying tabletops. It is uncommon, but by no means rare" (David 162). The same term has been used to describe a bluish-green stone (Wang 1990 I 154). Probably a serpentine.

Huarushi 花乳石. Also called **huarushi** 花紋石.

A yellow dolomite or calcite, resembling sulfur with white markings. Its veinings suggest *shanshui* landscapes, and the imagery of aquatic creatures and animals makes it especially suitable for figured screen panels. It is quarried in southern Jianzhou, an area just north of Dali. A similar stone is also found in Shanxi (Zhang Hongzhao 14ab; Needham 171).

Huangbanshi 黃斑石. (Yellow spotted stone.)

A yellow-spotted puddingstone.

Jiaolishi 角礫石.

A general term for conglomerates and brecciated stone. Although often resembling a man-made material, conglomerates are natural phenomena composed of rounded fragments of rocks and minerals held together by a cement of finer material. Rounded by the abrasive tumbling action of water, these fragments can vary in size, shape, color, texture, and hardness. The cement may be consolidated sand, limestone, clay, or all three mixed with iron oxides. If there is a sharp contrast between the relatively large pebbles and the fine matrix in which they are encased, and the conglomerate is also capable of a good polish, it is called a "puddingstone." When the fragments are not worn smooth by abrasion before consolidation, yet remain sharp and angular, they are called breccias. Different types of conglomerates or breccias may have little in common other than their makeup of fragments bound together with a cement of finer material.

Jieshi 階石. (Jie stone.)

A "stone used for screens" from Jiezhou in southeast Gansu province (Schafer 70).

Jinhuang 錦黃. (Bright yellow.)

In Zhao Songling 444.

Jinxi manao 錦犀瑪瑙. (Variegated rhinoceros-horn agate.) "Another name for *tumanao*" (David 160).

Laiyang lu 萊陽綠. (Laiyang green.)

In Zhao Songling 444. Possibly a serpentine from Laiyang in eastern Shandong province.

Luosizhuan 螺絲轉. (Fossilized limestone.)

In Zhao Songling 444.

Nanling bai 南嶺白. (Nanling white.)

A white marble from Nanling, Jiangxi. In Zhao Songling 444.

Nanyang shi 南陽石. (Nanyang stone.)

A green serpentine from southwestern Henan. "The best has pure markings, while those with either a light-green or with cloud-shaped markings and the color of seed oil are inferior. It is an extremely hard stone and can have a very fine texture. Plates of it are used to make tabletops or desk screens. It is translucent when held up to the light. Some big pieces are called sulfur stone" (David 161).

Qiyang shi 祁陽石.

Also called *yong[zhao] shi* and *yanggan shi*, it is found in the mountainous regions southwest of Yongzhou in Hunan province. "It is bluish in color, and not very hard. Fine pieces have markings suggesting mountains, rivers, the sun and the moon, or human figures. Dark purple markings are considered superior to blue markings. The stone can be cut into plates for inlaying table tops or screens. It is not expensive" (David 161). Fifty slabs of *qiyang shi*

were collected from Hunan and Guangzhou during the twenty-sixth year of the Wanli reign for use in the Qianqing Hall of the Imperial Palace (Wang 1990 I 154).

Quyang yu 曲陽玉. (Quyang jade.)

A white marble from the Taihang mountains of western Hebei province. In Zhao Songling 443.

Shewenshi 蛇紋石. (Snake-patterned stone.)

General name for serpentine. In Zhao Songling 385.

Shihui shi 石灰石. (Limestone.)

[Si] Chuan shi [四] 川石. (Sichuan stone.)

A white marble with black and blue veinings reminiscent of hills in Sichuan. "Though it is a hard stone, it can be cut into plates and used for inlaying tabletops or desk screens. It is seldom found in large sizes" (David 162).

Taohong 桃紅. (Peach red.)

In Zhao Songling 444.

Tieling hong 鐵嶺紅. (Tieling red.)

A red decorative stone possibly from the mountainous regions in northeastern Liaoning, near Tieling. In Zhao Songling 444.

Tumanao 土瑪瑙.

An agate with a decorative grain from western Yanzhou in Shandong province. "Fine specimens have a good deal of red color and a fine smooth texture, and show no veins of coarse stone. Regarding the markings, the best of them are shaped like walnuts; the next best have patterns of large cloud-shaped pieces, and resemble entangled silk; the next best, large patches of red and white. It is hard, but may be cut into plates with an instrument and an abrasive, and set in tables, couches or screens. It is also called *jinxu manao*" (David 160). "Beautiful ones have red, silk-like threads with a white ground. There are red grains, bamboo-leaf agate resembling bamboo leaves, and variegated ones . . . [it] can have five colors or large patterns the size of a fist or small patterns the size of a bean. The patterns can resemble fish and birds, wild beasts, or human figures. The variegated ones should be appreciated because they are expensive and hard to find" (Wen, *juan* 3, 4b). A *tumanao* is also found in Pengcheng in Jiangsu province (Wang 1990 I 154).

Wanxia 晚霞. (Evening sunset.)

In Zhao Songling 444.

Wenzhi naiyou 紋脂膩油. (Creamy fat grain.)

In Zhao Songling 444.

Wuwei shi 無為石. (Wuwei stone.)

A patterned gray or pale violet stone from Wuwei in Anhui province, bearing the imagery of conifer branches or of mountains and forests as if painted in ink (Schafer 87).

Xingjiushi 醒酒石. (Sobering stone.)

First recorded as a legendary stone acquired by the Tang official Li Deyu from Diancang. According to *Zhongguo gongyimeishu da cidian* (Dictionary of Chinese Arts

and Crafts), it is synonymous with cloudy gray stone (*yunhui shi*) quarried in Yunnan, Dali county. This stone is durable and resists corrosion. Its earliest use was for foundations and column bases. Ancients called it plinth stone (*chu shi*). It makes men feel clear and pleasantly cool, with a sobering and awakening effect (*Zhongguo gongyimeishu* 364).

Xuehua 雪花. (Snowy.)

In Zhao Songling 444.

Xuelang 雪浪. (Billowing snow.)

In Zhao Songling 444.

Yanshan shi 岩山石.

Yanshan shi is from Yunnan, but not from the Dali district. It is a loose and brittle marble with tiny black dots. *Guang shi* and *yanshan shi* were both quarried at a later date and mainly used in Qing furniture (Wang 1990 I 153).

Yanggan shi 羊肝石. (Sheep-liver stone.)

A purple stone found in Hangzhou and Hunan province. It is also called *qiyang shi* and could be recently found at a marble shop on the outskirts of Beijing (Wang 1990 I 153).

Yinjing 銀晶. (Brilliant silver.)

In Zhao Songling 444.

Yong shi 永石. See *qiyang shi*.

Yunfu 云浮. (Floating clouds.)

In Zhao Songling 444.

Yunhui shi 云灰石. (Cloudy gray stone.)

A kind of *dalishi* produced in Yunnan, Dali county. The gray and white background of cloudy gray stone has black and gray wave patterns, so it is called *shuihua shi*. See also *chushi* and *xingjiushi* (*Zhongguo gongyimeishu* 364).

Yushi 榆石.

An old name for Dali *shi*, possibly named after the Yeyu (葉榆) territory established by the Han, which encompassed Dali.

Zidouban 紫豆瓣. (Purple bean section.)

In Zhao Songling 444. Possibly a conglomerate.

Zhimabai 芝麻白. (Sesame seed white.)

In Zhao Songling 444.

Zhuye manao shi 竹葉瑪瑙石. (Bamboo leaf agate.)

An agate with patterns like bamboo leaves, used for inlaying table tops (David 160).

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