

WHAT IS NAN-YANG YÜ?

by S. HOWARD HANSFORD

The city of Nan-yang 南陽 stands on the north bank of the Pai Ho, or White River, a navigable tributary of the Han, in the south of Honan Province. The foothills of the Fu-niu Shan lie just to the north of the busy city, from which a fertile plain stretches southward on both sides of the river. Nan-yang was a settlement from very ancient times, and by the Warring States period (5th/3rd century B.C.) was a place of importance in the great state of Ch'u, which occupied most of the Yangtze basin. It seems to have been first called Nan-yang in the Ch'in Dynasty (221-206 B.C.), a name which after several changes was resumed in the Ming Dynasty. Then and under the Ch'ing it was a prefectural city, *fu*, and is now the administrative centre of a *hsien*.

Nan-yang has for long been noted for a stone valued on account of its decorative and medicinal uses, and called Nan-yang yü 玉. As is well known, this word *yü* carries a variety of meanings in Chinese authors, old and new. In its widest sense it signifies gem-stones, precious and semi-precious, of all kinds, and may even include certain rare materials other than minerals. In a narrower sense it means hard-stones worked by the lapidary into objects of use or ornament. Finally, it carries the very specialized connotation of jade, or nephrite. This may or may not have been the primary meaning, but true jade has been worked and treasured by the Chinese from the dawn of their history as the most precious substance they knew. The definition of 玉 in the *Shuo-wên* dictionary fits this material admirably.¹ "Yü" said the *Shuo-wên*, "is the fairest of stones. It is endowed with five virtues. Charity is typified by its lustre, bright yet warm; rectitude by its translucency, revealing the colour and markings within; wisdom by the purity and penetrating quality of its note, when the stone is struck; courage, in that it may be broken but cannot be bent; equity, in that it has sharp angles which yet injure none."

Nephrite is a silicate of lime and magnesium, and belongs to the amphibole group of rock-forming minerals. It has a curious crypto-crystalline structure, the crystals taking the form of a closely compacted mass of hair-like fibres only recognizable as such by examination under the

microscope of specially prepared "thin sections". It is too hard to be cut or scratched by metals, and the marvellous carvings, ancient and modern, for which China is famous, have been ground out by the laborious application of abrasive sands carried on tools of metal, wood or bamboo.

True jade, *chên yü* 眞玉 as it is sometimes called, is not known to exist in the natural state within China Proper, nor in Mongolia, Manchuria or Tibet. China's main source, perhaps her only source until recent times, was the region of Khotan and Yarkand, in Eastern Turkestan or Sinkiang. There is a record of this jade trade in the Han Dynasty,² and the late Gustav Haloun assembled evidence of its existence as early as the fourth century B.C., when the Yüeh-chih were intermediaries in it.³ Chinese craftsmen and antiquaries recognized that this Khotan jade (*Yü-t'ien yü* 于闐玉 or *Ho-t'ien yü* 和闐玉) possessed exceptional qualities of hardness and toughness. The polished surface, moreover, exhibited a peculiar waxy lustre, the *yü jun* 玉潤 as it was called, which marked it off from the *yü* from native sources. These latter stones, serpentines and steatites for the most part, have usually been distinguished by the names of their places of origin, real or supposed.

It did not occur to the Chinese, nor indeed to Europeans before recent centuries, that these rocks were of different chemical composition or crystalline structure. Their differences appeared to be of degree rather than of kind. All were credited in some measure with protective and preservative power for both the living and the dead, who wore or were surrounded in burial with the magic substance. But *Ho-t'ien yü* was regarded as incomparably more potent than any other, and this was manifested by the qualities enumerated in the *Shuo-wên*, especially the lustrous *yü jun*. The other jade-like stones are sometimes distinguished as *fu yü* 砮玉, false jades, though not of course by the people whose business it is to sell them.

From the eighteenth century onward another beautiful lapidary stone, a brilliant jadeite imported from Upper Burma, began to make its appearance in China, and to usurp some, but not all, of the esteem enjoyed by true jade. Among its colours was a remarkable apple-green, sometimes verging on the colour of emerald, which commended it to jewellers and the ladies for whom they catered, though not to scholars and courtiers. An old name with a long history and pleasant associations, *fei-ts'ui* 翡翠, was revived for this stone,⁴ which is the material of all the Chinese jade jewellery sold in the western world. The Chinese do not regard it as either *chên yü* or *fu yü*.

Jadeite, unlike nephrite, is a silicate of sodium and aluminium, and belongs to the pyroxene group of minerals. Though also of crypto-crystalline

² *Shih chi*, CXXIII, f. 11.

³ G. Haloun, *Zur Üe-t'ü-Frage*. In *Zeitschrift der Deutschen Morgenländischen Gesellschaft*, XCI (1937), pp. 306 ff.

⁴ See Hansford, *Jade and the Kingfisher*. In *Oriental Art*, I, 1 (1948), pp. 12-17.

¹ 石之美有五德潤澤以溫仁之方也韞理自外可以知中義之方也其聲舒揚專以遠聞智之方也不撓而折勇之方也銳廉而不撻聚之方也

structure, the crystals are minute interlocking grains, not fibres as in true jade. The stone is fully as hard as nephrite, if not quite so tough, but the lustre is more vitreous. It is ground by the same techniques as nephrite.

The first jades to reach Europe in historical times came, not from China, but from the Spanish colonies in Mexico and Central America, where they were treasured and highly valued by the Aztecs and Mayas. They had been carved as jewels, figurines and amulets, and often retained something of the kidney-like shape of the pebbles from which they were worked. Probably on this account they acquired a reputation among the Spaniards as a curative agent for diseases of the kidneys, and were called *pedras de los riñones* or *pedras de ijada*, whence came the names *lapis nephriticus* and jade. The material was in fact the pyroxene which mineralogists now call jadeite. When the first amphibole carvings arrived from China, they were believed to be of the same material as those from Spanish America and were called jades. It was not until 1863 that the French mineralogist, Alexis Damour, discovered that he was dealing with two entirely different minerals. Unfortunately he named the Chinese amphibole nephrite, though it had no association with kidneys, and the original American jade, the pyroxene, jadeite. When in due course carvings in jadeite arrived from China also, confusion was worse confounded.⁵

Nephrite and jadeite, though different minerals, are of similar appearance and hardness, they are worked by the same methods, and are sometimes not easily distinguished from each other by inspection alone, either when carved and polished or in the rough. Both have for long shared the name of jade, which is understood to comprise both minerals, but no others. These two are the stones referred to, when it has been stated that jade is not found in the natural state in China.

Nevertheless the number of places referred to in Chinese literature as sources of *yü* are countless. The *T'u shu chi ch'êng* lists nearly two hundred quotations from the *Shan hai ching* relative to localities producing *yü*. Some of these are in contexts which, as I have remarked elsewhere, may indicate mineral ores rather than lapidary stones.⁶ Far fewer sources of *yü* are mentioned in the *T'ai ping yü lan* and the Ming pharmacopoea, *Pên ts'ao kang mu*. The latter quotes T'ao Hung-ching 陶弘景, a fifth century medical writer, to the effect that in his time good *yü* came from Khotan, Lan-t'ien 藍田 in Shensi, Nan-yang 南陽 in Honan, and Lu-jung 盧容 in Indo-China.⁷ Lan-t'ien is well known as the source of a cheap decorative stone called Lan-t'ien mei yü 美玉: the Lu-jung stone has not been identified, but Indo-China has never had a reputation as a source of jade.

The question of the identification of Nan-yang *yü* was raised in 1961

⁵ For further details see C. E. Hardinge, *Jade, Fact and Fable*. London: 1961.

⁶ Hansford, *Chinese Jade Carving*, London: 1950, p. 33.

⁷ *Pên ts'ao kang mu*, Edn. 1784, VIII, f. 44.

by Professor Arno Schüller in an article in Vol. XL of *The Bulletin of the Geological Institutions of the University of Uppsala*.⁸ Schüller had bought on separate occasions in public markets two recently carved fragments of "jade", one in Hang-chou and one in Peking. He was struck by their unusual appearance: they were snow-white in colour with very remarkable green patches of almost rectangular shape, about $\frac{1}{2}$ cm. across and spaced 2 cm. or more apart, in the white material. He also came to the conclusion that they were of the same material as that of the *hei yü chiu wêng*, 黑玉酒甕 the great "wine bowl of black yü", preserved in the T'uan Ch'êng, or Round Fort, in the Pei Hai Park. This famous vessel, measuring 52 in. at its longest diameter, was a great treasure of the Ch'ien-lung emperor, who composed three long poems in its honour, and caused them to be inscribed in the interior.⁹ Ch'ien-lung regarded it as a relic of the Chin or the Yüan dynasty, and there is in fact some reason to identify it with a great vessel seen in the Yüan palace and described by Friar Odoric of Pordenone, writing early in the fourteenth century.¹⁰ Moreover, Schüller, recalling a remark made by H. C. Lee in 1936, suspected that his fragments might have hailed from the neighbourhood of Nan-yang. He put forward this suspicion to Professor Ma Hsing-yüan of Peking, who was able to produce from his mineral collection authenticated specimens of Nan-yang stone for Schüller's inspection, with a full geological description of the occurrence. The material proved to be identical with that of the two fragments.

The author describes the geology of the Tu Shan 獨山, an isolated hill 7.5 km. north-north-east of Nan-yang, where the stone is quarried by local peasants. It occurs as irregular, dyke-like veins "kaolinized" at the surface. In these soft kaolinized masses are found hard, dark-green, white and emerald-green nodules, which are carved into ornamental objects in Nan-yang (p. 432). Professor Schüller names this material "Shichangit", *anglice* "shichangite" (after the Jên-min Shih-ch'ang 人民市場, the "People's Market" in Peking, where he bought one of his specimens), and suggests that it is identical with jadeite-bearing rocks found in other parts of the world and described under various names by other geologists (p. 434).

A chemical analysis of the specimen from Hang-chou shows that

⁸ The title of the article, somewhat daunting to the non-geological reader, is *Shichangit, ein Epi-Metaleukophyr-Pyroxenit (Plagioklas-Hornblende-Jadeitit) als Randfazies ehemaliger leukophyrischer Gänge in Serpentin und Gabbro*, pp. 429-53. Since writing this article I have heard with regret that Professor Schüller died in Heidelberg in 1963.

I should like to express my thanks to Dr. W. Campbell Smith, formerly Keeper of Mineralogy at the British Museum (Natural History) for help in the evaluation of Professor Schüller's article.

⁹ The first and longest poem was also inscribed in a jade book, and has been translated by W. Watson in *Chinese Jade Books in the Chester Beatty Library*, Dublin: 1963, pp. 19-23.

¹⁰ Hansford, *op. cit.*, pp. 74-78.

although this shichangite contains all the elements present in Burma jadeite, the proportions are so different as to constitute a different mineral. It is in fact a silicate of lime and aluminium, rather than of sodium and aluminium. A volumetric analysis shows that it is a jadeite-bearing gabbro rock with 57% plagioclase feldspar, 16.5% hornblende, 5.6% zoisite, 4.4% diopside, and 2.8% jadeite. Another estimate of mineral composition based on measurement of surface area gave diopside 4.8%, jadeite 7.5%.

Professor Schüller's determination of the nature of Nan-yang *yü* as an impure pyroxene is a valuable contribution to the geology of China which deserves the gratitude not only of mineralogists, but also of students of Chinese antiquity and the glyptic arts. I do not consider, however, that schichangite can possibly be regarded as jadeite, or even jade, or that his discovery disturbs the belief that no jade-stone, either nephrite (*chên yü*) or jadeite (*fei-ts'ui*), is found in China Proper.

The question remains as to the material of the "great black wine bowl" at Peking and also, I would suggest, that of another famous object, the green stone figure of an elephant excavated from a Shang Dynasty tomb at An-yang, and now in the museum of the Academia Sinica at Taipei, Formosa. I recall clearly that the material of the wine bowl does differ in certain respects from the usual run of Khotan nephrite, but even more from Burma jadeite. There is inevitably much variation of colour in such a huge mass. Most of it is green so dark as to warrant its being called black, but there are patches of lighter green and grey, and whitish streaks which are utilized to some extent in the design of dragons and other monsters emerging from and diving into the waves.¹¹ The carving, though of immense vigour, is not finely executed, and the *yü jun* characteristic of nephrite is notably absent. The interior, however, has been beautifully smoothed to take the incised inscriptions, reproducing the imperial calligraphy and comprising 823 characters in all. The inked-squeezes in my library made from these inscriptions are clearly defined and eminently legible.

From Schüller's description of the source at Nan-yang it appears that good quality shichangite is usually found in quite small pieces, and that his comparison of the material of his fragments with that of the great wine bowl was visual only. If, however, they are indeed the same, the conclusion is not that jade-stone is found in China, as Schüller has claimed, but that the wine bowl is not made of true jade, as has been supposed.

When I was in Formosa in 1963 I had an opportunity of examining the elephant from An-yang in the company of Professor Li Chi, Director of the Institute of History and Philology at the Academia, and formerly in charge of the excavations at the Shang Dynasty sites. Professor Li remarked

¹¹ In Professor Schüller's specimens the colours were reversed, with green patches in a snow-white ground.

that the elephant is no longer regarded as made of true jade, and the material reminded me strongly of that of the great wine bowl. I asked him if he thought it might be of Nan-yang *yü*, and he considered this very probable.

One other interesting fact emerged from this conversation. Professor Li recalled that the late Dr. Tung Tso-pin, the eminent archaeologist and epigraphist, whom I happened to have met the previous day, was a native of Nan-yang,¹² and that when he went home on leave, he used to bring back little carvings in Nan-yang *yü* as gifts for his colleagues. Though attractive objects they were certainly not jade, either nephrite or jadeite.

¹² Tung Tso-pin, *Fifty Years of Studies in Oracle Inscriptions*, Tokyo: 1964.