

A General Study of the Ritual Bronzes in Ancient China

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I

The fact that the three dynasties of Hsia 夏, Yin 殷, and Chou 周 possessed quite conspicuous bronzes in the form of containers among the *i-ch'i* 彝器 (ritual objects) is clearly seen in documents of the Chou Dynasty, and the actual objects, when excavated, were regarded as auspicious signs in records of the Han 漢 Dynasty. Later, during the Six Dynasties and the T'ang 唐, numerous objects were excavated in various areas, and during the Sung 宋 Dynasty, all the features of one or two outstanding ancient bronze containers came to be known. This is thoroughly shown by the recordings of ancient bronze ritual vessels in the extant *Po-ku-t'u-lu* 博古圖錄 (Pictorial Record of Ancient Ritual Vessels in 30 volumes) compiled in the Hsüan-ho 宣和 Era. Furthermore, as it is well known, based upon the inscriptions on these vessels, the ages of these objects have been investigated, and in accordance with the accounts of ancient rituals of the Chou Dynasty, their characteristics have been inferred.

Supported by the excavation of some important vessels in the Ch'ing 清 Dynasty and by the progress of the study of inscriptions on metal and stone vessels as well as by the development of textual criticism, academic studies of ritual vessels, conducted from the above-mentioned viewpoints, served to render the analysis of the inscription on each ritual object more and more elaborate. It was confirmed that the Yin Dynasty already possessed vessels with their essential characteristics and that they were ritual objects.

However, the more important questions of the origin of these bronze containers and the processes of their development viewed in connection with other articles of the same age were almost always neglected, because only the more conspicuous individual relics excavated after the Sung Dynasty were noticed and little attention was paid either to the sites of excavation or to other objects excavated simultaneously. These questions had to wait for the application of archaeology, which developed in Western Europe since the end of the eighteenth century, to China in the present century.

The scientific excavations of the ancient ruins in China for obtaining materials which are reliable and accurate from the archaeological standpoint date from the late Ch'ing period. They were started in some adjacent areas where the ancient Chinese culture had spread and were followed, after the fall of

the Ch'ing Dynasty, by a Swedish scholar whose investigation of some pre-historic ruins and others attracted attention. As the Academia Sinica was established in the latter part of the nineteen-twenties, the members of the Archaeological Team of the Institute of History and Philology promptly engaged themselves in investigating the ruins in several areas. Especially, as an ancient ruin related to ritual bronzes, the appearance of the Chên-pu 貞卜 oracle inscriptions on tortoiseshell and bone towards the end of last century attracted the attention of some specialists in inscriptions on metal, who themselves embarked in 1928 on excavations and investigations of archaeological sites attributed to the Yin Dynasty located at An-yang 安陽, Ho-nan Province 河南省, or, Hsiao-t'un 小屯 area in the outskirts of the present Chang-tê 彰德. The excavation of the ruins, whose date was fairly accurately known, went through considerable meandering, and was extended until it was newly ascertained that, at Hou-chia-chuang Hsi-pei-kang 侯家莊西北崗, there existed a large group of ancient tombs constructed deeply underground which were recognized as Imperial mausoleum of the Yin Dynasty. Subsequently, under the leadership of Liang Ssü-yung 梁思永, three thorough excavations were carried out. Due to repeated private excavations since the Sung Dynasty, the wooden structures of this immense group of tombs were almost completely destroyed; and there were few perfect remains of the bronze objects. However, thorough-going investigations resulted in discovering numerous bronzes of newly excavated contemporaneous remains, and the discovery of these remains had an epoch-making effect in elucidating the material culture in the latter half of the Yin Dynasty. Their success attracted not a little public attention.

The ancient ritual bronzes excavated from Yin-hsü 殷墟 (Yin ruins) and Yin-mu 殷墓 (Yin tombs) add to an already increasing volume of excavated articles. Among them are the abundant new excavations privately unearthed from the ancient tombs around An-yang prior to the excavation at Yin-hsü and Yin-mu, though most of them were promptly exported to foreign countries, and also *pien-chin* 柶禁 (sacrificial table) and other numerous ancient bronzes, which are reliable remains of the latter half of the Yin Dynasty, unearthed since the end of last century from Shan-hsi Province 陝西省 area. Still others are the group of various remains dug up by the scientific excavation of the group of ancient tombs at Hsin-ts'un 辛村, Ho-nan Province, which may be dated back to the early part of the Chou Dynasty. Furthermore, there are finds from excavations in China, which, though interrupted by the warfare, picked up due to the land cultivation plan in China proper after the establishment of the Republic of China. With all these finds combined, there can be enough evidences which give reliable answers to all the above-mentioned questions.

The present writer, while a young student under Dr. Konan Naitô 内藤湖南, had occasion to inspect ancient ritual bronzes and the items excavated from the Yin ruins and collected by Lo Chên-yü 羅振玉, and was engaged in publishing a catalogue of the ancient Chinese bronzes collected by the Sumitomo 住友

Family of Osaka 大阪. These got him quite interested in ritual bronzes. As for the above-mentioned scientific investigations of the important Yin ruins, through the courtesy of Fu Ssü-nien 傅斯年, the first president of the Institute of History and Philology 歷史語言研究所, Academia Sinica, the present writer enjoyed a special privilege to observe on the spot the third series of excavation work conducted by Li Chi 李濟 and Tung Tso-pin 董作賓. Also, right after the completion of the excavation of the Yin tombs, Li Chi and Liang Ssü-yung kindly gave me an opportunity to study all the finds kept at the Institute in Nankin 南京. The writer's knowledge was considerably enriched by these experiences as well as by actual observation of the previously excavated ancient bronzes and of the abundant remains which were newly unearthed about that time and were allowed to flow out of the country. Then he was firmly convinced that these objects perfectly embodied the characteristics of the ancient ritual bronzes made in the latter half of the Yin Dynasty, which represented the standard types of casting. Part of this has been treated in his previous book entitled *Yin-kyo* 殷墟 (the Ruins of Yin).⁽¹⁾ Afterwards, during his tenure as a corresponding research member of the Institute of History and Philology, the writer was given an opportunity to inspect personally the large number of individual remains by the special courtesy of Kao Ch'ü-hsün 高去尋, who was exclusively engaged in publishing the report on the excavations and researches of the mammoth group of tombs at Hou-chia-chuang. He was able to enlarge his own knowledge by studying various remains of the Yin Dynasty and there was a great deal to enlighten him on various unsettled problems on the ancient ritual bronzes. In 1971, he was requested by the Institute of History and Philology, Academia Sinica, to contribute an article to a *festschrift* commemorating the eightieth birthday of Professor Wang Shih-chieh 王世杰, President of the Institute. Taking this opportunity, he gave a general survey of the abundant ancient bronzes appeared from the Yin ruins and Yin tombs, and expressed his own views on the origin of these cast-copper containers, as well as his personal opinion on their successors in the Chou Dynasty. The article was published under the title of *Chûgoku Ko-dô I-ki Tsûron* 中國古銅彝器通論 (A General Introduction to the Ancient Chinese Bronze *I-ch'i*), *Bulletin of the Institute of History and Philology, Academia Sinica*, Vol. XLII (1971), Pt. IV, pp. 541-562. This is its English translation with some revisions.

II

From a study of the so-called Yin characters of the inscriptions of ancient ritual vessels, it is well known that the *Yin-ch'i* 殷器 (Yin vessels) including *Shang-ch'i* 商器 (Shang vessels), possessed some salient features. It is only natural, therefore, that the abundant remains newly excavated as a result of

(1) Sueji Umehara 梅原末治, *Yin-kyo* (Yin-hsü, Ancient Capital of the Shang Dynasty at An-yang), Asahi Shinbun-sha: Tokyo, 1965.

the scientific investigations of the Yin ruins and the groups of Yin tombs accurately dated should perfectly coincide with them. However, we should note that, while these ancient bronzes, which coexisted with all other cultural items of the same period, uniformly possessed similar characteristics, there existed no bronze vessels which predated them. These vessels were all richly decorated chiefly with bird-beast patterns, and these various vessels already possessed one definite form, as very well manifested in the ritual bronzes recorded in the accounts of ancient rituals of the Chou Dynasty.

Let us first discuss the shapes of ancient vessels. There was a great number of Yin vessels in the form of *min* 皿, *po* 鉢, or *hu* 壺 (jars) that were used to contain solids or liquids. As for the *min* and *po* vessels, *kuei* 簋 (deep circular vessels with two handles), similar to those of ceramic ware daily used in the same age, had *pan* 饗 (two solid handles) with bird-beast ornament, just like *yü* 盂 (deep circular vessels) had two solid handles. Some *kuei* had three or four handles. Also some had large square bases cast under circular legs. (See Plate VIII, left bottom.) As for the *hu* vessels, there existed numerous vessels differing in form from each other. There were long and oval jars swelling in the lower part (Plate VII, No. 4), *p'ou* 甬瓦 (round jar), *tsun* 尊 (beaker-shaped vessel), *chih* 觶 (drinking vessel with cover), and *lei* 罍 (large jar with ring-handles). (See Plate VII, or Plate VIII, No. 5.) A large number of them were equipped with perfect covers. As for *yu* 卣 (wine-jar with a large long handle), there were extensive handles and the shapes of the jars themselves were extremely variegated.

Secondly, we can note various wine-cups such as *chüeh* 爵, *chiao* 角, *chia* 斝, and *ku* 觚, whose shape seems to have been originally based on horn and tusk. Each of them had a strikingly definite shape, while *ku* (slender beaker) has its mouth conspicuously extended outwards in the form of a morning-glory flower with a slender, but secure and stout round leg, the foregoing three vessels have in common a handle and knife-shaped legs. However, *chüeh* is unique in that it has a spout on one side, and like *chia*, is provided around the spout with a capital decoration. Some *chia* are large with round edges and have conspicuous capital formation and a cover with bird-beast knobs. Other *chia* are conspicuous for slender necks. Also some *chüeh* and *chiao* are square in form and have bird-beast covers. (See Plate III.)

Next, we have *li* 鬲 (kettle) and *ting* 鼎 (cauldron) which were obviously related in shape to pottery vessels of the previous era. *Li* and *ting*, which were best known bronze containers, all had holders (ring or ear) on the edge. There are more *li* and *ting* with three stick-like legs than those with bag-like legs. Furthermore, there were variations, such as *fang-ting* 方鼎 (rectangular cauldrons) and shallow vessels with legs of bird-beast ornament. Among the *fang-ting* are the two rectangular cauldrons of deer and an ox shape preserved in the corner of a chamber of the Great Tomb, No. 1004, of Hou-chia-chuang, and the *Ssü-mu-mou-ting* 司母戊鼎 excavated at *Ssü-k'ung-ts'un* 司空村. This fact shows

that, among the ancient ritual vessels, the *ting* was considered the most important vessel. (Plate II.)

Another vessel of a fundamental type like *ting* is the long-necked jar. The above-mentioned *yu* with a handle-beam means any jar with a cover provided with a knob. There were jars of various forms coexisting with each other — elliptic, circular, rectangular, circular in the upper part and rectangular in the lower part, and not a few jars had handles of the owl pattern. (Plate IV.) Furthermore, among the *tsun* of jar shape with large circular legs, there were vessels with neck opening outwards and with the barrel-shaped bodies not too conspicuous, and there were more circular and rectangular vessels with their bodies bulging. (Plate VII, right.)

As for vessels with spouts, it may be mentioned that, among *ssü-kuang* 兕觥 (gravy-boat shaped vessel) and *ho* 盃 (kettle-shaped ewer), both of which exhibit special forms and are often found among newly excavated relics, there are some vessels possessing uniform characteristics with individual features, and also others of distinct appearance. As for the *ssü-kuang* provided with a cover, its peculiarity lies in the fact that the front half of the cover is the shape of a beast, while the back half is in that of an owl. But there are some *ssü-kuang* which exclusively represent birds. Among the excellent large vessels excavated in remote antiquity, we can note the conspicuous beast-shape vessels with three legs, now in the possession of the Fujita Museum of Art 藤田美術館, Japan, and the Freer Gallery of Art. (Plate VI, bottom.) And some of them give the dates of casting when the same mold was used (i.e., the Vessels possessed by the Fogg Art Museum and the Freer Gallery of Art) (Plate V, No. 2.). By the way, bronze *ting* (cauldrons) (Plate II, No. 5.) with beast-legs cast in the same mold are found in the possession of the Brandage Collection and the Fujii Yûrin-kan 藤井有隣館 Collection in Japan. Furthermore, among the *ho* (kettles) with legs, which are considered to be vessels for harmonizing the five flavours, there are the hitherto known kettles with legs and one handle. In addition, among the newly discovered relics, the most conspicuous is the tall and large *fang-ho* 方盃 (rectangular kettle), which is one of the three *ho* in one set excavated from the Great Tomb, No. 1001, at Hou-chia-chuang (Plate I, No. 1.), now in the possession of the Nezu Museum of Art 根津美術館. And we noticed another vessel with a human-face cover and of the serpent-dragon pattern excavated from a Yin tomb (now in the possession of the Freer Gallery of Art, U.S.A. (Plate VIII, No. 6.)) Among the numerous rectangular vessels with house-shape covers and four spouts like *lei* (large jar with ring-handles) already referred to, there are articles which are of a fundamental shape, yet different in detail, being rectangular or circular. They show quite clearly that their shapes are not uniform. (Plate VII, No. 6.)

In addition to the above-mentioned vessels, which are more numerous among ritual wine-vessels, Yin relics of ox-shaped and owl-shaped *tsun*, which from ancient times were known as representing three-dimensional form of birds

and animals, exhibit many varieties. Among the owl-shaped *tsun*, there are not a few vessels of primitive form, like the *tsun* in the possession of the Minneapolis Institute of Art, U.S.A. (Plate VIII, No. 5.) Also, as for the *yu*, there are numerous specimens of owl shape, possessing sculptured look. Among the ox-shaped *tsun*, we note the *tsun* representing horned animals (in the possession of the Matsunaga Memorial Museum 松永記念館, Japan), and the elephant-shaped *tsun* which skillfully portrays the dynamic poses of a gigantic elephant. And as for ancient bronze musical instruments considered as instruments used for rites and ceremonies, we find specimens of *chéng* 鉦, *chung* 鐘, and to 鐸 (all right bells) among the reliable findings representing each period, and their shapes resemble those of the cast-copper vessels recorded in some later books, and some have their distinctive characteristics already developed.

As discussed above, the numerous ritual bronzes excavated from the Yin ruins and Yin tombs at An-yang, Ho-nan Province, all show that they had already attained a level of considerable variety, as did relics known since earlier times. Also, the vessels were provided with stands or legs exactly similar to those of the vessels described in the accounts of ancient rituals of the Chou Dynasty. Further, we note that these vessels are of a stage entirely different from that of other vessels provided with *pan* (handles), *t'i-liang* 提梁 (hanging-beam), or *chu-t'ou-shai* 柱頭飾 (capital decoration), and that vessels already multivariiegated existed simultaneously. Compared with the shapes of ash pottery and other pottery for the daily use of common people in Yin times, as discussed by Dr. Li Chi, in *Tao-ch'i-pien* 陶器編 (Chapter on Pottery) of his *Hsiao-t'un fa-chüeh yin-hsü ch'i-wu chia-pien* 小屯發掘殷墟器物甲編 (Vessels Excavated from the Yin Ruins at Hsiao-t'un, Part 1), Yin bronze vessels show considerable difference and only partial resemblance to the black pottery of a pre-historic age slightly preceding them. This comparison gives one characteristic to the shapes of the cast-copper vessels. Other points to be mentioned are that, though there are many relics of definite shapes, several vessels excavated from the grand tomb-groups at Hou-chia-chuang (Plate I) are of a large size, compared with others, and that their casting is especially superior to that of others, and that some of the Hou-chia-chuang vessels contain white metal fragments. These differences show that the Hou-chia-chuang relics are clearly different, in the method of casting and other respects, from the items excavated from the Yin ruins and tombs and studied exhaustively by Dr. Li Chi.⁽²⁾

Then, the fact that the decorative patterns which uniquely characterize the extremely various typed ritual bronzes are chiefly bird-beast patterns wrought all over the surfaces of the vessels has been thoroughly known by the relics excavated since the T'ang and Sung Dynasties. The relics newly excavated from the ancient Yin ruins and the Yin tomb-groups are found to possess not only these patterns, but also sculptured appearance, like *pan*, which are a part of the vessels, and the vessels of the bird-beast patterns. In these Yin relics,

(2) Li Chi, *Studies of Fifty-Three Ritual Bronzes*, *Archaeologia Sinica*, New Series No. 5.

patterns ceased to be mere decorations and became a basis of design for vessels themselves. And these sculptured vessels coexisted with vessels with patterns wrought.

As for the bird-beast patterns which adorned the ritual vessels, they were of a great variety. There were the side view, the front view, the bird's-eye view, heads and simplified views of such animals as tiger, elephant, rhinoceros, wild oxen, deer, hare, etc., owls and other birds of all kinds, and amphibious animals like the tortoise, frog, serpent, fish, and lizard. The most striking patterns among the foregoing are as follows: *t'ao-t'ieh-wên* 饕餮紋 (the glutton motive pattern), well-known since remote antiquity, which shows a grotesque and gigantic face of a monster in the centre and part of the body on both sides; *hui-lung-wên* 虺龍紋 (the serpent-dragon pattern), with a beast head and a dragon body; *k'uei-fêng-wên* 夔鳳紋 (the *k'uei*-phoenix pattern), showing side views of a bird-beast with sharp beaks; *k'uei-lung-wên* 夔龍紋 (the *k'uei*-dragon pattern), similar to the *k'uei-fêng-wên* showing serpent-dragon shape with a phoenix-head and the ox-head exposing half the flesh. It can be pointed out that, among the ancient bronzes excavated from the Yin tombs, there are many relics with the following designs: the serpent-dragon shape, quite slender and formed like the Japanese *Hiragana* script *ku* く or the letter Z; the design of monster with his body exposed on both sides of the eye-ball at the centre; the gluttonous beast with the eye-balls chiefly emphasized in a quarterfoil pattern on the outside; and a pair of dragons facing each other etched in low-relief. Apart from the above-mentioned bird-beast patterns, there are also such geometrical patterns as the *yüan-wo* 圓渦 (whorl) pattern, the *fang-hsieh-wo-lei* 方斜渦雷 (lozenge and thunder) pattern with a protruding breast at the centre, the *hsieh-ko-tzū-lei* 斜格子雷 (slender-lattice thunder) pattern, and perpendicular patterns. Furthermore, each one of the patterns shows tremendously manifold sculptural expressions. (Plates I-VII.)

One common feature of the abundant vessels excavated from the Yin ruins and the Yin tomb-groups is that the peculiar and variegated bird-beast patterns were wrought all over the surface of vessels. These patterns were closely related to the shapes of the relics, and we can note that decorating vessels with a variety of designs was an established method. The mouth, the body, and the base of each vessel were first horizontally partitioned by a circular belt into upper and lower halves and also the vessel was vertically divided into two or four parts by sets of triple vertical dividers. Each partition was decorated with the *t'ao-t'ieh* (glutton motive) pattern, with other patterns mentioned in the foregoing, with the ox-head in high relief in the centre with serpent-dragons or phoenixes facing each other on either side of an ox. These designs were perfectly arranged and regularly repeated. The spaces between the patterns were generally filled with delicate ground feature of the thunder pattern. And the bag-legged vessels are thinly decorated with the gluttonous beast or serpent-dragon patterns. Besides, this pattern decoration was often adopted, not only on the exterior of quite a

few of the vessels mentioned above, but also on the interior and on the inside of the legs, with inscriptions well-known since ancient times as the Yin characters. These inscriptions were of variety. Some were similar to the characters on tortoiseshell and bone; others were pictographs. On an intricately decorated shallow bowl (Plate VIII, No. 1.), the inside of the plane vessel was decorated with the rolling pattern of a huge serpent-dragon corresponding to the shape of the bowl, and the outside was adorned with bird-beast-fish forms. These were vessels representing a bird's-eye view of a tortoise; on some larger jars, more conspicuous than inscriptions are bird's-eye views of tortoises and frogs, and side-views of birds or beasts accompanied by incised letters. Furthermore, on the outside of circular legs of some jars, there are serpent-dragon forms, tortoises, and fishes carved in relief. All these features, along with such parts of vessel as covers, spouts, handles and handle-beams, and the bird-beast shapes of the *chia* and the *chüeh* provide good examples of the gorgeously decorated ritual wine-vessels.

It should also be noted that among these bird-beast patterns decorating all these vessels, there are patterns with blue-stones inlaid, as in the case of the mouth-piece (口頸片) of the large rectangular wine-vessel preserved in the Great Tomb No. 1003 of Hou-chia-chuang. Also to be mentioned are the partial colouring of some patterns and the filling with some other substance of the space between the belt-form convex patterns of some *ting* and other vessels.

Among the richly decorated wine-vessels found in Yin ruins and tomb-groups, we notice some vessels which appear quite different from the rest. Some *chih* (goblets) and *chia* (round tripod vessels) chiefly depict the front view of owls standing upright and the side-view of monster-beasts. (Plate II, No. 3.) Also *ssü-kuang* presents a sculpturesque figure of a monster-bird with a large beak. Its front half represents the side-view of a monster-bird and the rear half is equipped with a handle which forms a part of the monster-bird. The *ssü-kuang* resembles well-known owl-shaped and ox-shaped *tsun* in that all these three vessels are formed to the shape of monster-birds.

The above-mentioned *chih*, *chia* and *ssü-kuang*, however, resemble other vessels in that they use the delicate rolling-thunder pattern as the ground pattern and have other patterns added between the spaces of the monster-bird representation. Also they have in common with other vessels the use of the above-mentioned patterns in the composition of designs lying between the two halves of a vessel. For instance, as we see in the gigantic ox *ting* and deer *ting* (three legged cauldrons) excavated from the Great Tomb No. 1003 of Hou-chia-chuang, the respective beast faces are arranged at the centre with the owls standing upright on both sides. (Plate II, No. 4.) In the case of *ssü-kuang*, the pattern composition for both sides is identical, and only on the outside area of the mouth are cleverly arranged the side-views of flying birds, tigers, elephants, other monster-animals and hares. As for vessel covers, the space between the gigantic beast-necks and bird-heads is divided by a long piece of the serpent-

dragon, wherein the side-views of the serpent-dragon, the tiger, the elephant are reproduced. (Plate V.) As for the knobs on these covers shaped like necks of birds and animals, besides the ordinary sharp angles, there are those of the inverted vase form and those of letter Z. Also we notice skillfully made knobs whose parts are clever combinations of serpent and fish forms, and knobs which depict part of the ear, nose, mouth, and neck of a grotesque beast head represented in the bird-beast pattern. These features are distinctly recognizable in the details of the knobs. Since the details of the bird-beast pattern can similarly be observed in the glutton motive pattern and in the sacrificial beast-heads, only the bird-beast patterns which are sculpturally expressive and which determine the shape of the vessel are characteristics of the Yin period.

In this connection, it may be cited that the grotesque and gigantic *fang-ho* (rectangular seasoning vessel, a three-piece set), preserved in the Great Tomb No. 1001 of Hou-chia-chuang, is three-dimensional and sculptural as a pattern. Along with other vessels (Plate I.), this *fang-ho* actually embodies the said characteristics of Yin vessels. At the same time, the ritual vessel presently in the possession of the Freer Gallery of Art, (formerly in the possession of Mrs. Eugene Meyer Collection), which is famous as a ritual vessel of extremely different shape, (although nothing is known about the locality where it was excavated); the *ssü-kuang*, in the possession of the Fujita Museum of Art, with edge-like legs of the same size and the workmanship, but of different details (Plate VI, No. 2.); and the two jars with a deer knob and a baby-tigress, of the same size, but of a three-dimensional monster beast shape, in the possession of the Sumitomo Museum of Archaeology 住友博古館 in Japan and of the Musée Cernuschi in France (Plate IX.), certainly possess the above-mentioned common characteristics. It is only natural that they should be valued as excellent vessels of the Yin Dynasty.

The numerous ancient ritual bronzes of the Yin Dynasty, which were produced during two to three hundred years in the latter half of 2000's B.C., find their counterparts in the Chou vessels whose names are listed in the accounts of ancient rituals of the Chou Dynasty. But the shapes of Yin vessels are considerably more variegated than those of Chou vessels. As for the characteristic bird-beast patterns richly decorating the vessels, there is a definite method of casting the manifold patterns in thin relief. And also there is conformity between sculptural theme and vessel shape. These features very well represent the actual conditions of the various vessels which, from inscriptions, have been considered *Shang-ch'i* (Shang vessels). It should be noted that, when compared with clay or ceramic containers of daily use of the Yin Dynasty, the ritual vessels show great differences, especially in terms of the patterns given in the plates, and, above all, of the fact that they were all cast bronze wares.

As to the method of casting all these excellent vessels in the Yin Dynasty, based upon the common knowledge about the casting method of bronzes in ancient societies and elsewhere, it was supposed for a long time that the ritual

vessels, as well as the numerous bronze vessels of various sorts excavated simultaneously, had been cast, and that they had been produced by wax molds. However, during the large-scale scientific investigations in the Yin ruins at the An-yang area, a large number of the fragments of the molds used for casting them were newly discovered at Hsiao-t'un and the surrounding areas where these vessels are believed to have been actually cast. From these excavated mold fragments, it was for the first time confirmed that the ritual vessels were cast by pouring melted copper from one side of the combined inner and outer molds which were formed of fine sand and then baked hard, and braced together by a mother mold which was probably made of wood.⁽³⁾

The outer molds were divided according to the shapes of vessels. Spouts, vessel-legs, handles, and capital decorations for *chiieh* and *chia* were first cast in separate mold, and inserted in the respective spots of the main molds. The assembled molds were used as outer molds in casting various vessels. This method of casting has been ascertained from the marks left on some of the numerous ritual vessels, and secondly, by minute scientific X-ray examinations of the actual objects for more than ten years in the laboratory of the ancient bronzes in the Freer Gallery of Art, U.S.A.⁽⁴⁾ Furthermore, the so-called ground metal of these vessels, as in the case of copper weapons in other ancient cultural zones, was supposed to be bronze, an alloy with copper as its principal element, with the ratio of copper to tin being nine to one. However, when the weapons excavated from the Yin ruins at An-yang attracted attention, it was discovered that the *ko* 才 (dagger-ax) or *mao* 矛 (spear), which was too thin to be of practical use, contained almost no tin, but much lead, and had other elements added to it. As the result of minute chemical analyses of copper containers in the laboratory of the Freer Gallery of Art, it became evident that, for the purpose of improving casting, the proper quantity of lead was added to the bronze which possessed the above-mentioned ratio of copper and tin. At the same time, there were quite a few vessels entirely lacking the above-mentioned tin and containing a great deal of lead and other elements. Besides these, there were vessels made of the newly developed nickel which contained more than twenty percent tin. Even in the naked eye observation of individual vessel, we can detect the metallic composition of different vessels. Besides those vessels whose surface and rust show ordinary marks of bronze, there are vessels which show lead-copper colour on the rough surface. Also other vessels have the natural texture of nickel previously mentioned and still others are of the colour of the jet-black rust. Many vessels which show nickel colour on the ruptured surfaces have jet-black rusty appearance.

We now can see that the copper ritual vessels produced in the latter half

(3) Shih Chang-ju 石璋如, *Yin-tai-ti-chu-t'ung-kung-i* 殷代的鑄銅工藝 (Bronze Casting in the Shang Dynasty), *Bulletin of the Institute of History and Philology, Academia Sinica*, Vol. 26, 1955, pp. 95-129.

(4) Gettings, *The Freer Chinese Bronzes II*, Washington, 1969.

of the Yin Dynasty, as products of the bronze age following the neolithic age, marked a unique and advanced stage, both in the art of casting and the technique of alloy production. It has been noted several times that, among the ritual vessels excavated since the T'ang and Sung Dynasties from several areas, there are some that are quite similar to the Yin vessels. However, as far as vessels which preceded them in shape are concerned, it seemed very noteworthy that we have absolutely no examples, except for a few quite simple and unadorned objects.

III

The numerous copper ritual vessels excavated from the Yin ruins and the Yin tomb-groups definitely dated showed that they were of a stage at which the art of casting was remarkably advanced, and that they possessed definite characteristics. In addition, the epoch-making continual excavations of the Yin ruins revealed for the first time the real features of all the ancient cultural objects of the said age. Above all, the remarkable development in wood working exemplified by the large-scale underground wood constructions in Hsi-peikang, Hou-chia-chuang, singularly demonstrated the tremendous progress in the technique of producing metal tools during the dynasty. As for the bronze weapons, it was known that, like ritual vessels, some had inscriptions on them. However, the total picture of the bronze weapons from archaeological standpoint was incomplete, as in the study of the other objects. Although the thorough-going examinations of the great Yin tomb-groups, however, it was found that not only the bronze objects were decorated with the bird-beast patterns quite similar to those on the ritual vessels, but also other objects of all kinds were decorated likewise. As for vessel shapes, we note that there were three-dimensional ritual vessels of owl pattern, but also that among a number of marble sculptures (Plate X.) of the same dynasty newly excavated from the great tomb-groups, some were exactly like jade ritual objects known to some people since antiquity. The presence of the three-dimensional vessels and marble sculptures is characteristic of the Yin times. Also there were containers made of different substance that were decorated with the bird-beast patterns. Namely, among the vessels made of bone, tusk, jade and wood preserved in the same great Yin tomb-groups at Hou-chia-chuang, there were some decorated with the bird-beast patterns. As for the articles of bone and tusk, those of horn or elephant ivory are not scarce on one side of the cylindrically sliced long or short piece of bone or ivory, a base plate of the same quality is attached. In some cases, though affected by the shape of the material used as a handle inserted into one side of a vessel, (Plate XI, Nos. 3, 4.), bone or ivory objects show qualities common to other bone objects. Some ivory parts are combined to make the *ting*, the *fang-lei* 方罍 and the *chu-k'ou* 注口,⁽⁵⁾ with detailed bird-

(5) Sueji Umehara, *Yin-kyo Yin-bo no Kotsu-ga Yô-ki* 殷墟殷墓の骨牙容器 (Ivory and

beast patterns sculptured all over the finished vessels, and partly stone-inlaid. They are exactly the same in shape as copper ritual vessels. For instance, a good example is the owl pattern *yu* (jar), made of ivory, preserved in the Great Tomb No. 1003 of Hou-chia-chuang. Although it lacks its head, it has the shape and pattern exactly similar to those of the copper ritual vessel, and on both wings blue stone is beautifully inlaid. (Plate XI, No. 5.) As for jade and stone vessels, they are of marble or jade same as employed for sculptures. *Kuei* (deep circular vessel), *fang-i* 方彝 (rectangular casket-shaped vessel) and other ritual vessels were made of these materials, with the same patterns sculptured on the surface. These vessels definitely prove that the ancient ritual bronzes were produced with jade and stone. (Plate XI, No. 2.) Judging from the jade and stone vessels, we can throw some new light on the white clay vessels which have been considered to characterize the pottery of the Yin period. The white clay vessels which attracted attention because of perfect shape and of the same patterns decorating their surfaces as those of the bronze ritual vessels seem to be different from other white clay pottery and may be considered to be similar to ordinary pottery. We may make two observations to support this view. First, while clay pottery subsequently discovered were shaped like *tou* 豆 (hemispherical bowl raised on a high stem with spreading foot), *p'ou* (round jar), *p'an* 盤 (wide shallow bowl), *ch'ang-ching-hu* 長頸壺 (long-neck jar), *lei* (jar) and *ting* (cauldron), had the same sculptured patterns as the copper vessels. Secondly, white clay vessels were modeled after copper counterparts as the white clay pottery *lei*, now in the possession of the Freer Gallery of Art, and is clearly an imitation of the ancient bronze *lei*.

The next point is that, although it was surmised that wood was used as mother molds of cast copper containers, wooden containers deteriorated along with other wood-sculptured objects which are presumed to have existed since wood corrupts with the passage of time. And nothing whatever was known about them. However, all the tomb-chambers in the great tomb-groups at Hou-chia-chuang, as previously referred to, were found to be of wooden construction on a grand scale, and the remains in their lower parts could be recognized. Especially, in the tomb-chambers of Great Tombs No. 1001, there were abundant amount of remains of wooden vessels and the counter-prints of yellow clay (the so-called mud-clay) which filled up the spaces occupied by the original wood-vessels as they deteriorated. These counter-prints actually attest to the tremendous popularity of sculptured wooden objects of the same shape as sculptured marble vessels with inlaid bone, tusk, clam, jade, etc., and of other sculptured wooden vessels of various sizes. Furthermore, it was from a counter-print on the mud-clay excavated from the said tomb that the original shape of

Bone Vessels in the Yin Tombs of An-yang), *Bulletin of the Institute of History and Philology, Academia Sinica*, Extra Volume No. 4, (Studies Presented to Tung Tso-pin on His Sixty-fifth Birthday), Pt. 2, 1961, pp. 927-948.

the wooden container was confirmed.

This wooden container was a *tou* (tall cup) restored to its original shape from the counter-print of one cylindrical clod of clay arranged on a disk-shaped base. The restored *tou* had the same shape as the white-clay *tou* of the same dynasty, and like the white clay counterpart, it was decorated with the patterns of the glutton motive, rolling thunder, etc., and it was painted red.⁽⁶⁾ (Plate XII.) However, unlike the above-mentioned vessels of bone, tusk, jade and stone based on the ancient bronzes, this restored wooden vessel is identical with cast copper vessels. Wood was easier to sculpture by metal weapons than bone or tusk. Considering that the art of wood-carving was already remarkably developed in the Yin Dynasty, and that the ancient bronze containers have appearance similar to sculptured wood, we can infer that wooden sculpture was very well developed prior to the Yin period. And the restored *tou* seems to be an example of Yin wooden containers.

Now, since all the various containers similar to the cast-copper ritual vessels seem to have been carved by sharp copper tools, it goes without saying that we should recognize the edged cast-copper tools were most highly developed. On edged bronze tools in China, a book entitled *Yüeh-chüeh-shu* 越絕書 records that, besides stone and jade vessels, there existed edged bronze tools, and, as actual examples of them, the book mentions the *wu-yüeh* 舞鉞 (dancing ax) decorated with the same pattern as the above-mentioned copper containers, *ko* (halberd) with an inscription on the butt end, and the *luan-tao* 鸞刀 (bronze dagger) with the pommel of cock-head shape. However, so far as the archaeological study of the important copper tools was concerned, the copper tools, along with their stone vessels, were almost entirely ignored until the present century, owing to Chinese preference for objects with inscriptions, and also to their overvaluation of things of conspicuous shape. Consequently, the numerous cast-copper tools excavated from the Yin ruins and tomb-groups, along with the sharp-edged jade axes of an ancient style preserved in the Yin tomb-groups, concretely showed us for the first time the entire picture of the edged tools of the dynasty. At the same time they served to lead us to thinking about the long stages of their development.

Now, as for cast-copper tools of the Yin Dynasty, they were remarkably variegated in shape, and their shapes were very well attuned to use. For instance, among the cast-copper axes, one of the important tools of the stone age, such variants of different shape as the *fu* 斧 (ax), *chin* 斤 (hatchet), *tsao* 鑿 (chisel), and *yüeh* 鉞 (ax) existed simultaneously, and a copper halberd was provided with a bag into which the whole handle could be sheathed. Among the different kinds of halberd, we note the presence of *kou-ping-chih-ch'i* 勾兵之器, a tool like the above-mentioned *yüeh* (broad ax), with a handle

(6) Sueji Umehara, *Yin-bo Hakken Mokki In-ei Zu-roku* 殷墓發見木器印影圖錄 (Plates of the Counter-Prints of the Wooden Vessels Excavated from the Yin Tombs), Benridô: Kyoto, 1959.

rectangularly fixed to the halberd and the edge, whereas such sharp tools were still few among the copper tools in other ancient cultures.⁽⁷⁾ And *mao* (spear), *ko* (dagger-ax) and *yüeh* (broad ax), the inturned single-edged sword with a handle-head, etc., were not sharp but full-fledged weapons, according to the way these tools were laid out in the ancient tombs at Hsiao-t'un.⁽⁸⁾ Among these ancient weapons, we notice the six rare and superb copper-halberds preserved in the Great Tomb No. 1001 of Hou-chia-chuang. (Plate XIII, No. 1.) Some copper weapons were cast in bronze like common cast-copper vessels, while some of them considered to have been used as *ming-ch'i* 明器 (funerary objects) for the reason that they are too thin for practical use were also cast in an alloy of copper, to which, instead of tin, lead and other elements were added. Still others were made of nickel, as in the case of copper vessels. It should be noted that nickel is a more suitable substance for sharp weapons, since it excels bronze in hardness, though inferior to it in elasticity. In this connection, we should take note of a solitary example of a slender and flat nickel tool formed like the Japanese *Hiragana* script *he* へ and having sharpened edge on one side. (Plate XIII, No. 2.) This tool suggests that the above-mentioned weapons of jade, stone, bone, and tusk, and especially the patterns sculptured all over bone and tusk, were carved with this kind of weapon whose sharp edge was constantly resharpened as it got dull. We can surmise that the tools excavated from the Yin ruins and tombs represented the most advanced stage of cast-copper in terms of shape and substance used, although examples of copper tools preceding them are scarce. From the fact that they were already specialized tools and that many other specimens exist, it may be inferred that they far antedate the development of bronze instruments. This view corresponds with the early development of carved wooden containers.

Now, along with these numerous tools of practical use, also excavated from the Yin ruins and tomb-groups were such weapons as the *ko* (dagger-ax), the *yüeh* (ax) and the *mao* (spear) of characteristic shape which were obviously not intended for practical use, with bird-beast patterns cast in relief all over the surfaces and with blue stones inlaid between the patterns, similar to the above-mentioned vessel with inlaid blue stones. And an ancient style *ko* (dagger-ax) with a butt of bird-beast shape was found in the Great Tomb No. 1001 of Hou-chia-chuang, on which scientific investigations were carried out. (Plate XI, Plate XIV, No. 3.) All these copper tools and the richly decorated copper ritual vessels are evidently of one and the same kind, as far as their patterns and technique are concerned. Moreover, there are not a few tools whose vital parts like *yüan* 援 (blade), *fêng* 鋒 (lance) and *jên* 刃 (edge) were

(7) Sueji Umehara, *Shina Kodai no Dô-Riki ni tsuite* 支那古代の銅利器に就いて (On the Copper Weapons in Ancient China), *Toho Gakuho* (Kyoto), Vol. 2, 1931, pp. 85-138.

(8) Shih Chang-ju, *Hsiao-t'un-Yin-tai-ti-pin-ch'i* 小屯殷代的兵器 (Yin Weapons in Sets as Excavated from Hsiao-t'un), *Bulletin of the Institute of History and Philology, Academia Sinica*, Vol. 22, 1950, pp. 19-76.

separately made of jade. (Plate XIV, Nos. 4, 5, 6.) Some of these tools have *t'ao-t'ieh-hui-lung* (gluttonous serpent-dragon) pattern on their copper portion. These features demonstrate that they were treasured articles, and they have much in common with the copper ritual vessels, with which we are concerned.

The observation that, among the copper tools of the Yin Dynasty, especially among those developed as weapons, quite a few were exceedingly conspicuous and richly decorated, exactly like the copper ritual vessels, underscores the view that the containers made of bone, tusk, jade, and stone, similar to those in the above-mentioned copper containers, were modeled after the advanced copper tools of the same dynasty. On the other hand, the engraved wooden vessel restored from the earthen counter-reprint indicates to us that containers and vessels made of wood, a material more suitable for modelling by means of copper tools, were used quite early in accordance with the technical development of general wood carving, although no original vessels have survived.

As surveyed in the foregoing, the ancient bronze ritual containers in the latter half of the Yin Dynasty possessed forms which were exceedingly variegated, when compared with those on earthenware and pottery. All of them were sculpturesque and decorated with characteristic bird-beast patterns and the *pan* (two solid handles), *chiao* 脚 (legs), *chu-t'ou-shai* (capital decoration), and *kai* 蓋 (cover), were also sculpturesque in form, sculpturesque appearance being a distinct characteristic of the ancient bronze ritual vessels. Since the wooden *tou* (tall cup) restored from the counter-print (Plate XII) exactly tallies with the copper *tou* of the Yin Dynasty, the origin of the shapes of the various ritual vessels may be traced to engraved wooden containers produced in earlier times for other purposes than rituals. Owing to the development of wood carving technique by the Yin times, wooden vessels had come to possess features which we now observe on the bronze ritual vessels. Considering extraordinary development in the technique of casting copper during the Yin Dynasty and also the abundant production of copper and tin, we may infer that the various containers originally produced in wood were probably employed as models for producing cast-copper vessels. In this way, we can suggest an interpretation on why the copper containers possessed superior characteristics, without any extant copper containers which might have preceded them, and why they show conspicuous wood-sculptural quality.

In this connection, it may be mentioned that since the resumption of the scientific excavations in China proper under the government of the People's Republic of China, we learned that the copper containers excavated from the ancient tomb at Êrh-li-kang 二里岡, Chêng-chou 鄭州, Ho-nan Province, were crudely worked and were of an apparently simpler pattern, and also that some vessels of a similar kind had been newly excavated from other regions. Considering these features, some Japanese scholars lump copper vessels of thin skin and simpler patterns and argue, without seeing actual objects and basing their observation only upon photographs, that they were of the period which preceded

the age of the Yin ruins at An-yang, namely the middle era of the Yin Dynasty. And I am afraid that this view is gaining currency. However, some vessels as crudely worked as those excavated from the ancient tomb at Êrh-li-kang were discovered from the ancient tombs of a later period from Hsiao-t'un area at An-yang. In addition to this, the shape and pattern of the vessels, as in many others of the same kind, evidently show that they were crude samples of the Yin copper vessels, and as for the quality of the copper, it contains much lead. For these reasons, the above view cannot stand the test of evidence.⁽⁹⁾

IV

As thoroughly surveyed above in the light of numerous relics of late Yin period, among the various kinds of bronze ritual containers in China, which followed sculptured wood containers as their direct predecessors, there are some vessels of unique shape being decorated with the bird-beast patterns. Furthermore, the shapes of the more important containers are exceedingly different from those of earthenware and potteries are considerably variegated. Yet they are all provided with circular legs, and some vessels have additional mouth-pieces, cross-bars and handles. These vessels are distinct in themselves and have already fixed features. Furthermore, the surfaces of these vessels are uniformly decorated with the bird-beast patterns. The objects of the bird-beast patterns are many, including cicada, fish and reptiles. The *t'ao-t'ieh* (glutton motive) pattern chiefly sketches owls, barn-owls and animals. The *k'uei-lung* (serpent-dragon) pattern comes with a beast head and a dragon body, the *k'uei-fêng* (ghostly phoenix) pattern gives profiles of animal heads and monster birds, and some *k'uei-lung* patterns sketch the same profiles as the *k'uei-fêng* pattern. The *chih* (goblet) covered by a skillful combinations of two, three, or four of these patterns methodically arranged on its surface, and with a cover completely decorated with an owl pattern does not differ from the owl-shape wine-vessel. In *ssü-kuang* (horn cup) and *ho* (kettle), as already mentioned, are covered with the conspicuous beast- and owl-shaped decorations, to which the shapes of the vessels conform, and some other patterns are carved in the spaces between the dominant patterns. The bird-beast patterns are sketched not only on vessel-covers, legs, circular legs, but also on handles, spouts, and capital decorations, and the respective shapes of these parts are exceedingly sculptural. And the gigantic and excellent cast vessels preserved in the great tomb-groups of Hou-

(9) Survey of Archaeology, Department of Culture, Ho-nan Province, Comp., 河南文化局文物工作隊編著, *Chêng-chou Êrh-li-kang* 鄭州二里岡 (Êrh-li-kang in Chêng-chou), *Chung-kuo-t'ien-yeh-k'ao-ku-pao-kao-chi* 中國田野考古報告集 (Reports of the Chinese Field Archaeology), Archaeological Monograph D Series, No. 7, 1959.

Sueji Umehara, *Yin-chûki to sarete iru Teishû Shutsudo Ko-dôki no Seishitsu* 殷中期とされている鄭州出土古銅器の性質 (On the Characteristic Features of the Ancient Bronze Vessels Unearthed in Chêng-chou and Held to Have Been Made during the Middle Period of the Yin Dynasty), *Shigaku*, Vol. 33, No. 2, 1961, pp. 1-24.

chia-chuang very well embody the characteristics of Yin ritual vessels. (Plate I.)

It is of course evident that these numerous and manifold copper containers of the latter half of the Yin Dynasty have the distinct common quality of sculpturesqueness of expression of the bird-beast patterns richly decorating all the surfaces, and it is also clear that they are containers entirely beyond everyday use. We may recall at this point that these cast-copper containers which attracted attention since the Sung Dynasty were classified as the ritual instruments of the Chou times, along with several kinds of bells such as *chéng* (bell of oval section and wide mouth), *chung* (ritual bell of oval section with 36 bosses or nipples on its surface), and *to* (hand-bell with clapper), and that their vessel names were listed in Chou records. Also we may note that a number of the copper vessels cast during the most prosperous days of the dynasty possessed signs suggesting the nature of the vessels. These points clearly tell us that these copper vessels were special ritual vessels. A study of the ancient ritual vessels of the latter half of the Yin Dynasty tells us that the origin of ceremonies in China went back to very early times, that the ritual vessels were originally made of wood, and that, as ceremonies came to be more and more popular, wooden vessels came to possess characteristics of sculptural wood. Further, along with the extraordinary development in the technique of copper casting, the wooden ritual vessels came to be cast in copper. The total absence of earlier examples of copper ritual vessels supports the above observation. A word may be added in this connection. The presence, among the bronze tools of the same age, of some which were beyond practical use, like the above-mentioned bronze ritual vessels, and also the existence of some bone, tusk, jade and stone objects modeled after the above-mentioned ritual vessels endores the widespread prevalence of special ceremonies during the dynasty.

These numerous ritual vessels for special ceremonies in the latter half of the Yin Dynasty were not only of different sizes and different workmanship, but also of different copper qualities, and some cubic vessels of the bird-beast patterns and the gigantic vessels preserved in the great Yin-tomb-groups at Hou-chia-chuang possess these characteristics. This proves nothing but the prevalence of the ceremonies and popularity they enjoyed during the Yin Dynasty. What we can say anew in connection with the ceremonies themselves is that the excavation operations in the same great tomb-groups unearthed many marble sculptures of various kind (Plate X.), traces of large and small sculptured wooden objects, and numerous small jade sculptures of the same shape as marble pieces, all of which showed resemblance in shape to the bird-beast

Plate XV. An Example of Oracle Inscriptions on Tortoiseshell and Bone Excavated at Hsiao-t'un.



patterns of the ritual bronzes, and were richly decorated with the same designs. Forms similar to those of the above-mentioned sculptured pieces are also found in the oracular inscriptions on tortoiseshells and bones. (Plate XV.) These forms seem to have symbolized god of nature. It seems that this resemblance suggests that the *k'uei-lung* pattern (especially conspicuous among ritual vessel patterns), provided with a beast-head and a serpent body, was the origin of the dragon which even today is the symbol of Chinese culture, and also it may be considered, the resemblance gives us some clues as to the nature of the special ceremonies.

V

The various ritual vessels of the known date within the latter half of the Yin Dynasty had already established all their characteristics. As for the origin of these vessels, the ancient Chinese used wooden vessels rather than earthenware or pottery vessels; the wooden vessels came to be cast in copper as a result of the remarkable development of the technique of copper casting. In connection with these observations, the conditions of the numerous vessels employed for Chou ceremonies for nearly a thousand years thereafter should be examined.

As to the nature of innumerable ritual vessels cast during the period of nearly a thousand years of the Chou Dynasty, as it is well known, a large number of the Chou ceremonial vessels were definitely marked by the inscription, *pao-tsun-i* 寶尊彝 (treasured ritual vessels), and some vessels possessed long inscriptions describing their respective character. For this reason, since the Sung Dynasty, the Chou ceremonial vessels had been the main objects of epigraphic study, and the ages of the vessels were investigated until during the last period of the Ch'ing Dynasty, their ages were determined. The results were published in a number of writings; especially, Kuo Mo-jo 郭沫若, *Liang-Chou chin-wên-tz'ü tai-hsi* 兩周金文辭大系 (An Outline of Metal Inscriptions in Western and Eastern Chou Dynasties), in which he listed well-known important inscriptions in chronological order, and commented on each of them, and Jung Kêng 容庚, *Shang-Chou i-ch'i t'ung-kao* 商周彝器通考 (A General Survey of the Ritual Vessels of the Shang and Chou Dynasties), which published the photographs of inscribed vessels.

In his article entitled *Hsi-Chou t'ung-ch'i tuan-tai* 西周銅器斷代,⁽¹⁰⁾ Ch'ên Mêng-chia 陳夢家 discussed vessels whose inscriptions showed they were of the Western Chou Dynasty. Among the vessels of the early Western Chou, that he dealt with, there were some which seemed to have been designed for practical use, as in the case of vessels excavated since the last century in Shan-hsi Province; and in terms of vessel decoration, there were vessels that had belt-like decora-

(10) Ch'ên Mêng-chia, *Hsi-Chou t'ung-ch'i tuan-tai* 西周銅器斷代 (A Chronological Study of Western Chou Bronzes), *K'ao-ku-hsüeh-pao* 考古學報 (The Chinese Journal of Archaeology), No. 11, 1955-1956.

tions on portions of the vessel surface — the same decorative pattern had already appeared on vessels of the Yin Dynasty. These early Western Chou vessels already attained established forms. They possessed solemn appearance of nickel and did not differ too much from Yin vessels in terms of decoration and casting method.

Likewise, similarity to Yin vessels is seen in the *yu*, *tsun*, *chüeh*, *chiao*, *ku* and *chih* arranged on the *pien-chin* (sacrificial table) excavated in this century from old tombs in Pao-chi District 寶鷄縣, Shan-hsi Province, (Plate XVI, top),⁽¹¹⁾ and in the *kuei*, *yu*, *ssü-kuang* and others placed on the other base. (Plate XVI, bottom)⁽¹²⁾ Other vessels than these mentioned above were also of exactly the same shape as the Yin predecessors; only their patterns were somewhat similar and most of them were not inscribed. Further, we might mention the following items whose inscriptions clearly indicated that they corresponded to the Yin predecessors of the same kind, the pair of the rectangular ritual vessels of the gluttonous serpent-dragon pattern, reported to have been newly excavated in the present century from Lo-yang 洛陽, Ho-nan Province, (now in the possession of the Freer Gallery of Art, Washington) (Plate XVII, No. 2.), the rectangular nickel *tsun* (wine-vessel) of the gluttonous serpent-dragon pattern (now in the possession of the Tai-pei Ku-kung Po-wu-yüan 臺北故宮博物院 (Taipei Former Palace Museum)), several *ho* (spice-containers), and the pair of *kuei* (deep circular vessels) excavated from an unknown place, but provided with a sacrificial head, a lengthy inscription and a base of the rectangular and slanting whorl pattern, (originally provided with a cover) (now in the possession of the Late David Weill Collection, Paris) (Plate XVII, No. 1.), and Duke Chou's 周公 *kuei* of elephant pattern provided with four handles (in the possession of the Late Eumorfopoulos Collection, London) (Plate XVII, No. 3.). Every one of these was a cast object of solemn bearing, differing not too greatly from its predecessor of the latter half of the Yin Dynasty. In the case of *San-shih-p'an* 散氏盤 (wide shallow bowl) with the serpent-dragon whorl pattern (Plate XVII, No. 4.) in the possession of the Former Palace Museum, the beast pattern used as a design seems rather conspicuous. Examining the ancient bronzes among the abundant relics of the earlier period of the Western Chou Dynasty in the ancient tomb-groups at Hsin-ts'un, Chün-hsien 濬縣, Ho-nan Province, excavated and investigated in parallel with the Yin ruins,⁽¹³⁾ we find that, though

- (11) Sueji Umehara, *Henkin no Kôhogaku-teki Kôsatsu* 杞禁の考古學的考察 (Étude Archéologique sur le *Pien-chin*, ou série de Bronzes avec une Table pour l'usage rituel dans la Chine antique), *Tôhō Bunka Gakuin Kyoto Kenkyūjo Kenkyū-hôkoku* 東方文化學院京都研究所研究報告 (Memoirs of the Kyoto Institute of the Tôhō Bunka Gakuin), Vol. 2, 1933.
- (12) Sueji Umehara, *Sensei-shō Hôkei-ken Shutsudo Daini Henkin* 陝西省寶鷄縣出土第二杞禁 (*Pien-chin* No. 2 Excavated from Pao-chi District, Shan-hsi Province), *Tôhō-gaku Kiyô* 東方學紀要, Vol. 1, 1959.
- (13) *Chün-hsien-hsin-ts'un* 濬縣辛村 (Hsin-ts'un in Chün District), *Chung-kuo-t'en-yeh-k'ao-ku-pao-kao-chi*, Archaeological Monograph B Series, No. 13, 1964.

they were crudely made, they considerably differ in vessel shape from those of the Yin Dynasty; further, we notice that the bird-beast patterns were used as designs, and that the sculpturesque expression was also lacking.

In spite of the common idea that the Chou rituals superseded those of the Yin, the ritual vessels of the early Chou period were hardly distinguishable from those of the latter half of the Yin Dynasty. But the various vessels mentioned in the *Hsi-Chou t'ung-ch'i tuan-tai* (A Chronological Study of the Western Chou Bronzes), and the ancient bronzes among the relics discovered from the ancient tomb-groups in Ho-nan, Shan-hsi, and Chiang-su 江蘇 Provinces which were excavated after 1950 demonstrated changes in the principal vessel shapes along with the passage of time. Especially, it should be noticed that they showed a greater degree of patternization than the vessels referred to in the preceding paragraph.

Examining the above vessels for their shape, we notice that the *ting* (cauldron), the most important vessel originally manifested quite various forms. But the rather shallow *ting* with a spherical body and three long legs — i.e. the famous *Mao-kung-ting* 毛公鼎 (Plate XVIII, No. 1.) is an excellent example — became the leading shape and the vessels of other shapes gradually disappeared. At the same time, *ting* formed like the original pottery *li* (cauldron), provided with the mouth edges opening outside with no metal ears, became the new leading shape. Among jars, those of respectively definite shapes, such as *lei* (jar), *p'ou* (jug), and *chih* (goblet) began to disappear, and the jars with the large lower half formed in rectangular and circular shape, with two bird-beast pattern ears (Plate XVIII, No. 3.) for hanging rings on both sides of the shoulder became common. Some of them had cup-like metal covers on the mouth and others had the extremely slender body and the cover provided with a circular cup-form knob. As for the *tsun* in a narrower sense, vessels in the shape of a jar showing a knob with the well-formed mouth open and possessing the belt-pattern on the outside were more common than cylindrical ones. And as for the *yu* that had assumed various shapes, oval shape with slight swelling in the lower part with a handle-beam stretched across the lengthy body became the fixed form of this period.

All the *kuei* had two handles and wide mouth and were provided with large cylindrical legs and cup-like covers which formed the large knobs; some *hsü* 盞 with especially large rectangular bases were open-worked (Plate XVIII, No. 4.), while others were similarly crafted, but rectangular in shape, and those *hsü* provided with covers in form similar to the marble chopping-boards in the Yin Dynasty were newly discovered. (Plate XVIII, Nos. 4, 5.). Such vessels as *chia*, *chüeh*, *chiao*, *ku*, and *ssü-kuang*, which characterized the bronze containers of the Yin Dynasty and also the *hsi-tsun* 犧尊 (ritual wine-vessel) and the *ch'in-hsiao-tsun* 鸚鵡尊 (owl-pattern beaker) disappeared. On the other hand, a vessel called *i* 匜 (low ewer) with legs and a spout similar to that of the old *ssü-kuang* emerged. (Plate XVIII, No. 6.) And the bell as a musical instrument

corresponds in shape to the elaborate description in the K'ao-kung-chi 考工記 (Record of Technology) of the *Chou-li* 周禮 (Rites of the Chou).

As for the patterns of these vessels, the tendency in the earlier part of the Chou Dynasty to simplify the traditional patterns was further followed. The sculptural bird-beast patterns which had formerly adorned entire vessels disappeared and a new trend to decorate part of the vessels with the above-mentioned belt-pattern emerged. And the patterns employed in the belt form chiefly included the serpent-dragon and the whorl-like beast-patterns which were the simplified design of the traditional bird-beast pattern; the serpent and the serpent dragon combined to form the letter Z; and the *ch'ieh-ch'ü* 竊曲 (stealthy curve) pattern which was a simplified beast-head pattern, tongue pattern and scale pattern arranged above and below the wavy dividing line. And all of these patterns were produced two-dimensionally. (Plate XVIII, Patterns of various vessels.) At the same time, in addition to the above-mentioned belt patterns, there are quite a few vessels with horizontal stripes engraved on the belts. This seems to suggest a relationship with the pattern left on earthenware resulting from the process of coiling.

That the ancient bronzes in China possessed the above-mentioned common qualities in the mid-Chou period was definitely demonstrated when grand-scale excavations in connection with construction works were carried out for the flood control of the Yellow River in Shang-ts'un-ling 上村嶺 area, San-mên-hsia 三門峽, Ho-nan Province. The ancient bronzes excavated from the ancient tomb-groups identified as the graveyard of Kuo 虢 State of the Middle Chou Dynasty gave us an evidence.⁽¹⁴⁾

Therefore, the above-mentioned ancient ritual bronzes of the mid-Chou period were handed down from the Western Chou Dynasty which had no doubt inherited them from the Yin Dynasty. They must surely convey the actual state of the ritual bronzes of the mid-Chou period. However, the ritual bronzes of the Middle Chou Dynasty clearly possessed fewer varieties of shapes than those recorded in the accounts of ancient rituals. Such characteristic vessels as the *chiao*, *chüeh*, *chia*, *chih*, *ku*, and *ssü-kuang* were missing; and even among the other important vessel shapes, they were designed for greater functionality. Especially, as far as the patterns were concerned, they are evidently more formalized than those of the Yin Dynasty. And it should be noted that the inscriptions of more important inscribed vessels indicate that they were the reproductions of the work by some master artists, and that the inscribed vessels were considerably different from the vessels for rituals.

As for the copper ritual vessels of the period of the Warring States, most epigraphies have been recognized, on the basis of studies of inscribed vessels made in several warring states, including bells and other items, as reproductions

(14) *Shang-ts'un-ling-Kuo-kuo-mu-ti* 上村嶺虢國墓地 (The Cemetery of the State of Kuo at Shang-ts'un-ling), *Chung-kuo-t'ien-yeh-k'ao-ku-pao-kao-chi*, Archaeological Monograph D Series, No. 10, 1959.

of the vessels of the mid-Chou Dynasty. And a general survey shows that there were not many which lacked inscriptions. Our understanding of the ancient bronze containers of the Warring States period began with the excavations, during the 1920's, of numerous bronzes from an old tomb in Li-yü-ts'un 李峪村, Shan-hsi 山西 Province. This was followed by the discovery of a group of especially prominent relics including the *Ma-shih-pien-chung* 厲氏編鐘 (Ma's Bell Set) excavated at the ancient tomb-groups of the Han 韓 family in Chint's'un 金城, Lo-yang, Ho-nan Province, and the ancient bronze containers found in An-hui 安徽 Province and elsewhere in the south occupied by Ch'u 楚, were exactly similar to all other relics of the same period. These finds, along with other vessels recorded elsewhere, give us excellent information on the bronze containers of the Warring States period.⁽¹⁵⁾

Among the ancient bronze containers of the Warring States period, when independent states were fighting one another everywhere in China proper, there were, some vessels that inherited the shapes of the ox pattern and ancient owl pattern *tsun* and a few long-necked bowls with covers, adorned with serpent-dragons and other three-dimensional decorations. (Plate XIX, No. 1.) But almost all of the containers of the Warring States period were of far more practical shape than the above-mentioned vessels of the mid-Chou period. Including bowls, all of them were cast thinly and skilfully. Further, there were new vessel shapes, such as the large *chien* 鑑 (deep basin), *ho* 盒 (vessel with a cover), *lien* 奩 (cylindrical covered vessel), *fang* 釜 (four-sided ewer), *tou* (cup provided with a cover and a tall stand), *pei* 杯 (cup), and *chih* 卮 (low cup). These vessels are conspicuously similar in shape to lacquer ware and other practical vessels abundantly produced during the same period. Given this similarity and the shapes of various other vessels, it seems that the Warring States bronze vessels were less similar to the ancient bronzes for rituals and music than to thinly cast copper vessels which earlier scholars in China called *fu-yü-chih-ch'i* 服御之器 (vessels for dressing and driving) of the Han Dynasty — namely, copper vessels for practical use.

In this connection, it may be mentioned that even such vessels as the *tsun* (beaker) and the *yu* (jar) which inherited the shape of the ritual vessels were formed like the thin and well-developed jar named *chung* (beaker) of the Han Dynasty. In the case of *yu*, a chain handle-beam was newly provided; along with jars of the same chain handle-beam, the *yu* jars in the form of a gourd and with a bird-shaped head were quite conspicuous. The *ho* resembled gray pottery of the same dynasty in that it had a bird-shaped spout and was provided with a handle-beam. The particular *ho* we are concerned with (Plate XIX, No. 6.) still preserved a note of antiquity in its handle-beam with a thinly carved serpent-dragon pattern, its bird-shaped spout and its legs. But the newness of

(15) Sueji Umehara, *Sengoku-shiki Dōki no Kenkyū* 戰國式銅器の研究 (Étude des Bronzes des Royaumes Combattants), *Tōhō Bunka Gakuin Kyoto Kenkyūjo Kenkyū-hōkoku*, Vol. 7, 1936.

the shape and the existence of large and small objects of this kind fully demonstrate the excellence in the technique of vessel decoration and in the art of casting of the time. (Plate XIX, No. 6.)

Furthermore, the principal patterns which decorated these Warring States vessels were still the bird-beast patterns. Yet they had something quite different from those of the Middle Chou Dynasty. In the Warring States vessels, the main varieties of the bird-beast patterns were the *p'an-ch'ih* 蟠螭 (crouched-dragon) pattern, and the strange feathered-beast pattern. Also, rather than a single serpent-dragon pattern, these vessels had a new decorative method of repeating a given variety of the *hui-lung* (serpent-dragon) pattern. (Plate XIX, No. 2.) As for the shapes of the handles, knobs, legs, handle-beams, and spouts on the vessels and covers, there were some which retained the traditional shapes, and others which were decorated with the open-worked sculptures of the *p'an-ch'ih* pattern, but most of them were of the graphic bird-beast shape, and the graphic quality was conspicuous in the three-dimensional decoration of the bird-beast pattern on vessel covers. Also, new among the patterns was a geometrical belt pattern. Of the vessels decorated with a combination of patterns done in convex and concave lines, not a few of the concave portions were gorgeously inlaid. The chief item used in inlaying was a lead-like metal with which the whole surface was made level to produce the so-called shadow picture effect. Other items were gold, silver, and precious stones. Among other vessels of a single pattern inlaid with other materials, numerous subjects were portrayed, including the bird-beast patterns confronting each other, their front views, the standing figures of a winged mystery man, horses and vehicles, hunting, dancing, bull-fighting, fighting, sailing, etc. Furthermore, it should be noted that some vessels carried, besides all these subjects, the pictures of trees, houses, etc., which concretely depicted everyday life in that dynasty. Some of these picturesque works included those plated with gold and silver. Among these vessels was the vessel of extremely delicate workmanship discovered from the ancient tomb-groups at Chin-ts'un, near Lo-yang. On this vessel, completely patternized serpent-dragon and the beast face were inlaid with jades and glasses. The fact that a large number of bronze or nickel personal effects equally elaborately worked, such as *tai-kou* 帶鈎 (belt hooks), the so-called *shu-chên* 書鎮 (book-weight) of beast-shape, and decorations on horses and carriages, have been excavated from the same tomb-groups at Chin-ts'un shows a new characteristic of the vessel decorations in this period. In this connection, it should be recalled that a variety of the *hui-lung* pattern carved in relief and excellent decorative pieces plated with gold and silver or inlaid with jades were found among the rear-side decorations of the numerous nickel mirrors first discovered in the early 1920's, and among the vessels decorated with the combination of a ground pattern and other patterns — especially picturesque bird and the *hui-lung* pattern done in the manner of shadow picture. (Plate XIX.)

We have previously given some examples of bronzes and other containers

with their patterns inlaid with jades or plated with silver and gold. This was practised as early as the latter half of the Yin Dynasty. However, among the numerous relics dating from early Chou and thereafter, actual examples are lacking. So far as inlaying of a lead-like metal and plating with gold or silver are concerned, absolutely nothing has been found. Along with the technique of filigree, the technique of inlaying and plating was developed in the Ancient Orient and was transmitted to China, and the transmission of these techniques via the northern Eurasian Continent has been confirmed by the successive investigations on Scythian culture by Soviet scholars, who have conducted scientific excavations of the various ruins from the area to the north of T'ien-shan 天山 to the area of Lake Baikal since the late nineteenth century, and also in Mongolia since the 1920's. In this connection, it may be recalled that during the Warring States period, silver containers became more prominent, that in some of them gold was used simultaneously, and that among old bronze containers some were gold-plated.

While the various vessels of the Middle Chou Dynasty were limited in the variety of vessel shapes, the old bronze ritual vessels of the Warring States period approached the more practical shapes such as seen among earthenwares, and added some new practical vessel shapes. As for vessel decorations, conspicuous were the traditional bird-beast patterns used entirely as ground-patterns, and the serpent-dragon pattern transformed into a decorative pattern. Simultaneously, picturesque patterns and designs began to appear. In addition to all these, there were a large number of inlaid articles including some excellent pieces produced by the above-mentioned technique imported from abroad. All these points certainly characterized the vessels of the period.

As for the copper ritual vessels of the long Chou Dynasty which lasted for almost a thousand years as stated above, at the earliest period they almost fully embodied the features of the vessels of the Yin Dynasty. In other words, they were the same as Yin vessels. Along with the passage of time, vessels with lengthy inscriptions came into being. Also the peculiar shapes of the earlier vessels began to disappear, although the function of individual vessel was still recognizable. The vessels of the principal shapes, such as *ting* (cauldron), *hu* (jar), and *kuei* (deep circular vessel), all came to assume somewhat rounded shapes. As for decorative patterns, some vessels had them arranged in a belt form and this method served to encourage the tendency for their patternization. In the mid-Chou period these features became the common characteristics of the ritual vessels and their inscriptions definitely declared that they are rare treasures possessed by powerful men of the Chou Dynasty. When compared with all these, the various copper vessels in the latter half of the Chou Dynasty, — namely, the Warring States period, — show us that, though some of the bells as musical instruments still retained the aspects of the Middle Chou Dynasty, a new set of bells (*p'ien-chung* 編鐘) mentioned in the foregoing, possessed a remarkable similarity in vessel shape to the other containers of practical use

and also exhibited in their excellent vessel decoration the characteristics of the age. This should be regarded as a case of deviation from the proper field of ritual vessels. In view of their similarity to the cast-copper containers of practical use of the following Han Dynasty, it may be considered that the ritual bronzes, the unique ritual objects in China, after a long passage of time, and attendant upon a great transitional period, began to change, the change indicating a decline in the traditional ceremonies.

Plate I. Ancient Bronze Vessels Excavated from the Great Tomb
(No. 1001) at Hou-chia-chuang



1. 犧首虺龍饗紋方盃 (三器之一)
Rectangular kettle-shaped ewer, *ho*, decorated
with animal head and serpent-dragon pattern.
(One of the three *ho*.)



4. 犧形饗龍饗紋大尊
Large round tripod vessel, *chia*, with animal-
shaped handle and capped columns, decorated
with animal head pattern.



2. 夔龍饗龍饗紋有蓋尊 (双器之一)
Beaker-shaped vessel with cover, *tsun*, decorated
with animal head and *k'uei*-dragon pattern.
(One of the two *tsun*.)



5. 犧首饗龍饗紋大尊
Large beaker-shaped vessel, *tsun*, decorated
with animal head pattern.



3. 犧首饗龍饗紋甗
Round body jar with cover, *p'ou*, decorated
with animal head pattern.



6. 犧首夔龍饗龍饗紋方甗
Large quadrangular jar with ring-handle, *lei*,
decorated with animal head and *k'uei*-dragon
pattern.

Numbers 1, 3, 4 and 5 are deposited in the Nezu Museum of Art, 2 in the Fujii Yûrin-kan Museum, and 6 in the possession of the Wada Family, Kobe.

Plate II. Bronze *Ting* Excavated from Yin Tombs



1. 怪獸款足鼎
Hollow-legged cauldron, *ting*, decorated with monster pattern.



4. 侯家莊第一〇〇四號大墓出土方形鹿鼎
Rectangular cauldron, *ting*, decorated with deer head pattern, excavated from the great tomb No. 1004 at Hou-chia-chuang.



2. 虺龍饗饗紋鼎
Cauldron, *ting*, decorated with serpent-dragon and animal head pattern.



5. 刃形脚圓鼎 (日本藤井有隣館藏)
Round *ting* with knife-shaped legs. (Deposited in the Fujii Yûrin-kan Museum, Japan.)



3. 夔龍饗饗紋鼎
Cauldron, *ting*, decorated with *k'uei*-dragon and animal head pattern.



6. 夔鳳脚渦雷蟬紋鼎
Ting with *k'uei*-phoenix legs, decorated with coiled thunder and cicada pattern.

Plate III. *Chiao*, *Chüeh*, *Chia*, and *Ku* Excavated from Yin Tombs



1. 有蓋饗饗渦紋角
Tripod vessel, *chiao*, with cover, decorated with animal head and whorl pattern.



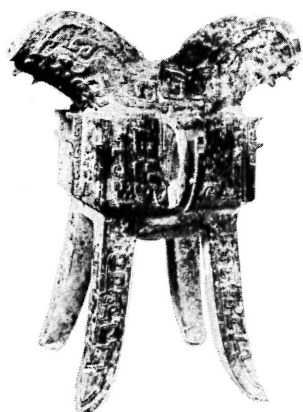
4. 獸蓋饗饗紋爵
Tripod vessel, *chüeh*, with spout, handle, and animal-shaped cover, decorated with animal head pattern.



2. 犧首饗饗紋角
Tripod vessel, *chiao*, with handle, decorated with animal head pattern.



5. 犧壺饗饗夔鳳紋方罍
Four-legged rectangular *chia* with animal-shaped handle and capped columns, decorated with animal head and *k'uei*-phoenix pattern.



3. 饗饗紋方角
Four-legged rectangular *chiao* decorated with animal head pattern.



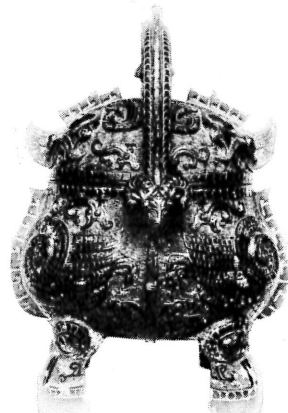
6. 饗饗蟬紋觚
Slender beaker, *ku*, decorated with animal head and cicada pattern.

Plate IV. Various Examples of *Yu* Excavated from Yin Tombs



1. 饗饗雙龍紋卣

Round jar, *yu*, with cover and swing-handle, decorated with animal head and *k'uei*-dragon pattern.



4. 虺龍鴟鵂紋卣

Round jar, *yu*, decorated with serpent-dragon and owl pattern.



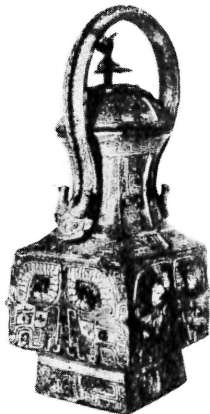
2. 饗饗雙鳳紋方卣

Rectangular jar, *yu*, decorated with animal head and *k'uei*-phoenix pattern.



5. 鴟鵂卣

Owl-shaped jar, *yu*, with cover and swing-handle.



3. 禽鈕蓋饗饗雙龍紋方卣

Rectangular jar, *yu*, with bird-shaped knob on the top of cover, decorated with animal head and *k'uei*-dragon pattern.



6. 獸紋蓋禽形紋角卣尊

Round-edged rectangular jar, *tsun*, with animal pattern cover and bird pattern body.

Plate V. Various Examples of *Ssü-kuang* Excavated from Yin Tombs



1. 怪獸禽紋兕觥
Gravy-boat shaped vessel, *ssü-kuang*, decorated with monster and bird pattern.



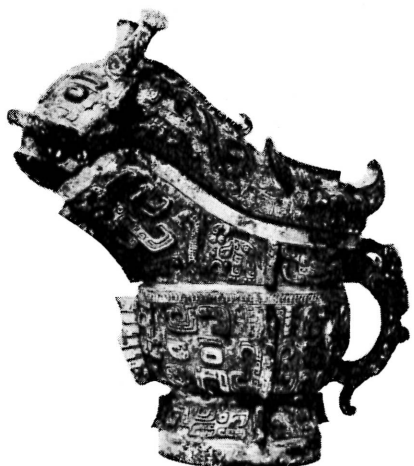
4. 怪獸禽紋兕觥
Gravy-boat shaped *ssü-kuang* with monster and bird pattern decoration.



2. 怪獸鴟鵂紋兕觥
Gravy-boat shaped *ssü-kuang* with monster and owl pattern decoration.



5. 饕餮龍紋方形兕觥
Quadrangular gravy-boat shaped *ssü-kuang* with animal head and serpent-dragon pattern decoration.



3. 饕餮象紋兕觥
Gravy-boat shaped *ssü-kuang* with animal head and elephant pattern decoration.



6. 虺龍紋有脚形兕觥
Tripodic gravy-boat shaped *ssü-kuang* with serpent-dragon pattern decoration.

Plate VI. Two Examples of *Ssü-kuang*



1. 禽形兕觥

Bird-shaped vessel, *ssü-kuang*. (Deposited in the Freer Gallery of Art.)



2. 鹿鈕乳虎卣

Wine jar, *yu*, with deer-shaped handle and baby-tiger shaped body.

Plate VII. *Tsun*, *Chih*, *Hu*, *Lei*, and *Fang-i* Excavated from Yin Tombs



1. 犧首鬻龍紋尊
Beaker-shaped vessel, *tsun*, with animal head and *k'uei*-dragon pattern decoration.



4. 鬻龍紋壺
Vase, *hu*, with animal head and *k'uei*-dragon pattern decoration.



2. 獸面的鬻紋尊
Beaker-shaped *tsun* with animal face pattern decoration.



5. 犧首鬻龍紋方罍
Large rectangular jar with cover, *fang-lei* with animal head and *k'uei*-dragon pattern decoration.



3. 鴟鵂紋有蓋觶
Capped goblet, *chih*, with owl pattern decoration.



6. 鬻龍紋方彝
Quadrangular casket-shaped vessel, *fang-i*, with animal head and serpent-dragon pattern decoration.

Plate VIII. Various Types of Vessels Excavated from Yin Tombs



1. 虺龍禽獸紋盤

Wide shallow bowl, *p'an*, with serpent-dragon and bird-beast pattern decoration.



4. 饕餮夔鳳紋方座簋

Deep circular vessel with handles and square base, *kuei*, with animal head and *k'uei*-phoenix pattern decoration.



2. 方斜雷紋乳盂

Deep circular basin, *yü*, with nipples, lozenge and thunder pattern decoration.



5. 鷓鴣尊

Owl-shaped *tsun*.



3. 夔鳳饕餮雷紋簋

Deep circular vessel with handles, *kuei*, with animal head, *k'uei*-phoenix and thunder pattern decoration.



6. 有角人面蓋虺龍紋盃

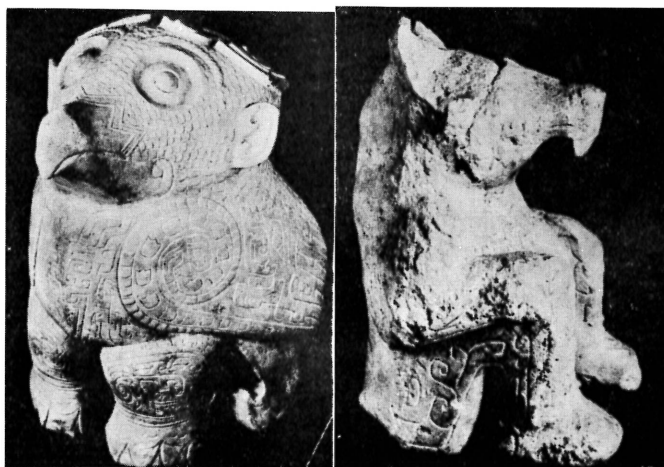
Kettle-shaped ewer, *ho*, with horned-faced lid and serpent-dragon pattern decoration.

Plate IX. Baby-Tigress Shaped Jar, *Yu*, with Deer-Shaped Handle on Lid.
(Kept in the Sumitomo Museum of Archaeology.)



鹿鈕蓋乳虎卣 (住友博古館藏)

Plate X. Two Examples of Marble Sculpture Excavated from the Great Tomb
(No. 1001) at Hou-chia-chuang



侯家莊第一〇〇一號大墓出土大理石彫像二例

Plate XI. Marble and Ivory Vessels Excavated from Yin Ruins at An-yang



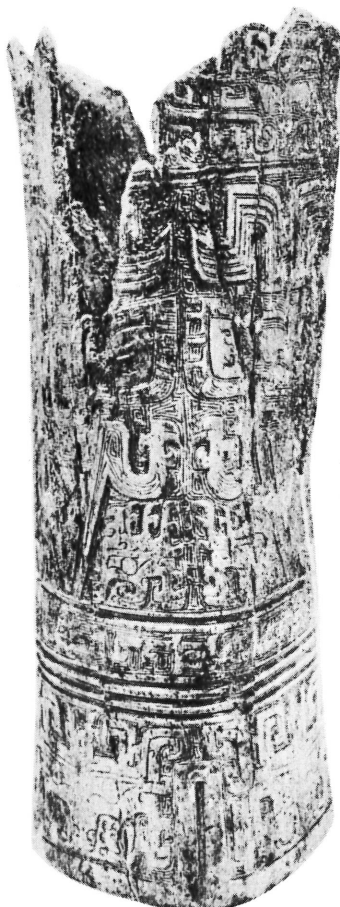
1. 圓渦直紋大理石簋
Deep circular vessel, *kuei*, of marble, with whorl and perpendicular pattern decoration.



2. 獸面的饗養紋大理石方彝
Rectangular casket-shaped vessel, *fang-i*, of marble, with animal face pattern decoration.



3. 饗養蟬紋象牙容器
Ivory vessel with animal head and cicada pattern decoration.

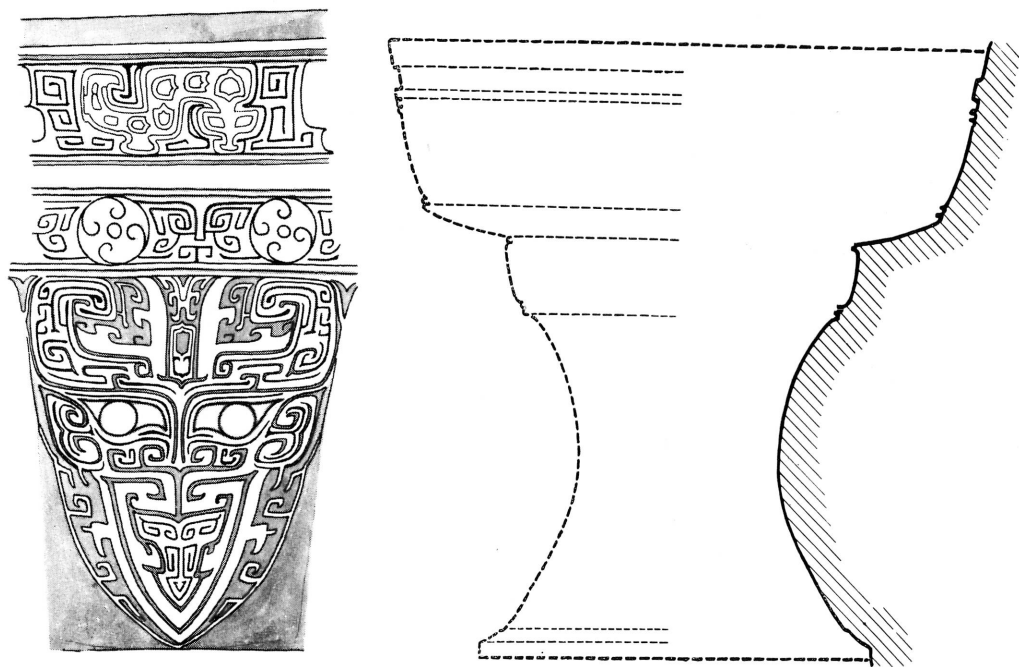


4. 侯家莊第一〇〇一號大墓出土饗養紋筒形象牙卣
Cylindrical ivory *yu* with animal head pattern decoration, excavated from the great tomb (No. 1001) at Hou-chia-chuang.



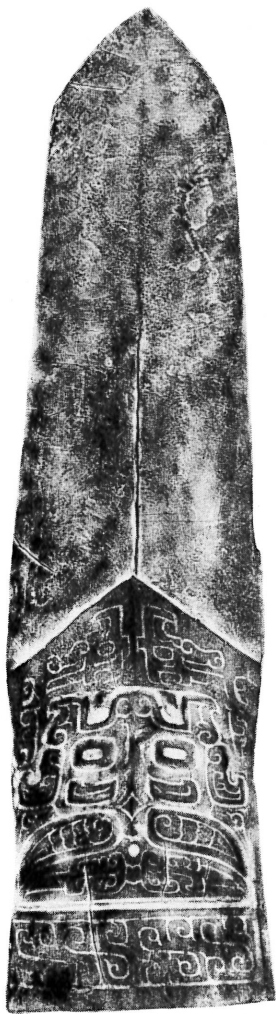
5. 侯家莊第一〇〇三號大墓出土嵌石象牙卣
Ivory *yu* with embedded stones, excavated at the Great Tomb (No. 1003) at Hou-chia-chuang.

Plate XII. Restored Wooden *Tou* Excavated from the Great Tomb
(No. 1001) at Hou-chia-chuang.

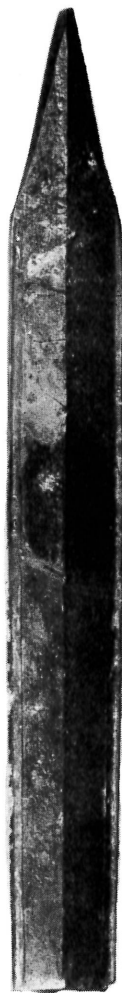


侯家莊第一〇〇一號大墓出土木豆復原圖

Plate XIII.

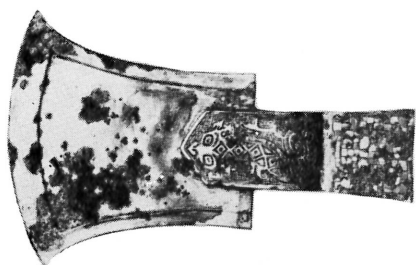


1. 侯家莊大墓出土銅利器
Copper tool excavated from a great tomb at
Hou-chia-chuang.



2. 白銅尖頭器
Tool with white copper tip.

Plate XIV. Examples of Yin Copper Tools



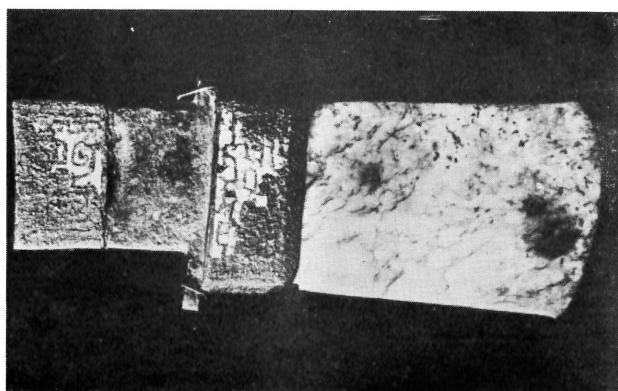
1. 虺龍紋鉞
Ax, *yüeh*, with serpent-dragon pattern decoration.



2. 虺龍紋鉞
Ax with serpent-dragon pattern decoration.



3. 虺龍紋嵌石古式銅戈
Ancient copper dagger-ax with embedded stones and serpent-dragon pattern decoration.



4. 玉刃饕餮紋鉞
Jade-bladed ax with animal head pattern decoration.

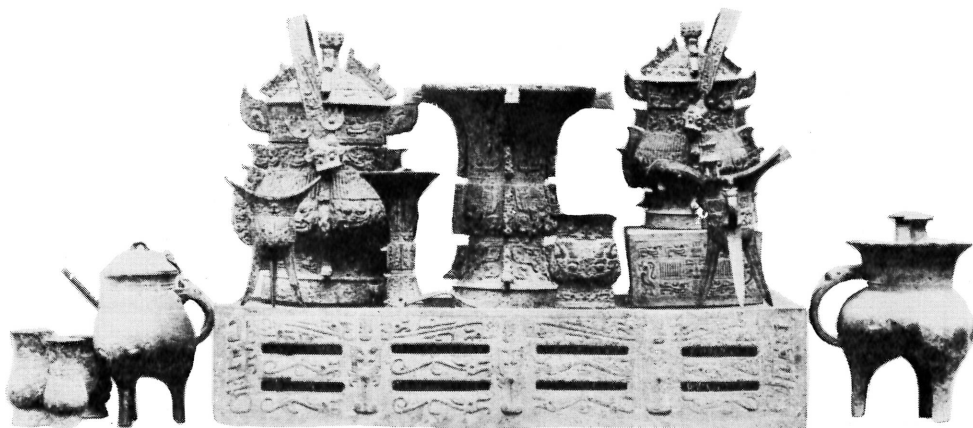


5. 玉援饕餮紋古式戈
Ancient jade-bladed dagger-ax with animal head pattern decoration.

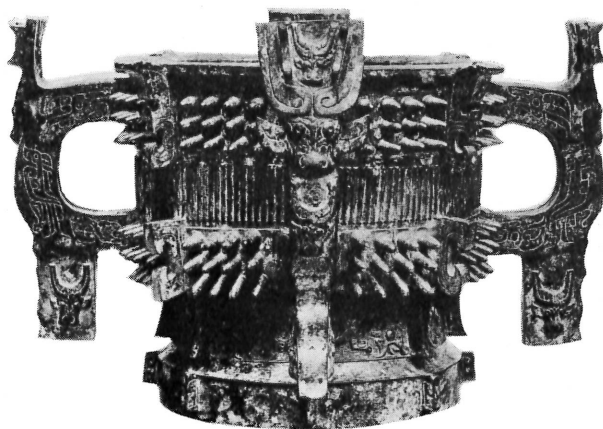


6. 玉鋒怪獸紋嵌石子
Jade-tipped spear with embedded stones and monster pattern decoration.

Plate XVI. *Pien-Chin* Excavated from Pao-chi District, Shan-hsi Province



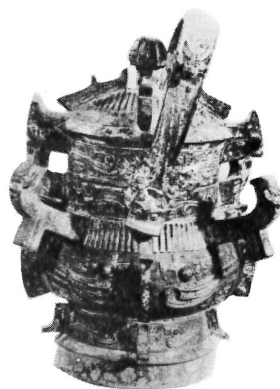
1. 光緒廿七年出土第一柎禁
Pien-chin No. 1 excavated in 1901.



2. 中華民國初期出土第二柎禁の器：四盞百乳直紋簋
 An article in the second *pien-chin* excavated in the early Republican period:
 Deep circular vessel, *kuei*, with four handles, numerous nipples, and perpendicular
 pattern decoration.



3. 虺龍紋兕觥及方座
 Gravy-boat shaped vessel with square base,
ssü-kuang, with serpent-dragon pattern decoration.

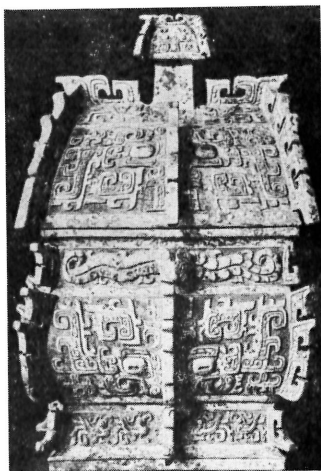


4. 犧首夔鳳紋大卣
 Large *yu* decorated with animal head and
k'uei-phoenix pattern.

Plate XVII. Ritual Vessels of the Early Western Chou



1. 方斜渦雷紋方座簋
Square-based deep circular vessel, *kuei*, decorated with square-coiled thunder pattern.



2. 饕餮龍紋矢令方彝
Rectangular casket-shaped vessel, *fang-i*, made by a vassal of Duke Ming of Chou, with animal head and serpent-dragon pattern decoration.



3. 四鑿象紋周公簋
Deep circular vessel, *kuei*, of Duke Chou, with four handles and elephant pattern decoration.



4. 虺龍渦紋散氏盤
Wide shallow bowl, *pan*, of San clan, decorated with serpent-dragon and whorl pattern.

Plate XVIII. Ritual Vessels of the Latter Period of Western Chou



1. 毛公鼎
Tripod cauldron, *ting*, of Duke Mao.



4. 竊曲鱗狀紋甗
Low oblong rectangular dish with round corners, *hsü*, decorated with 'broad-figure band' and scale pattern.



2. 竊曲紋方座簋
Square-based deep circular vessel, *kuei*, decorated with 'broad-figure band' pattern.



5. 虺龍直紋鑿簋
Deep circular vessel with handles, *kuei*, with serpent-dragon and perpendicular pattern decoration.



3. 象首鑿有蓋虺龍紋壺
Covered jar, *hu*, with elephant-head shaped handles and serpent-dragon pattern decoration.



6. 渦雲紋人形四脚匜
Low ewer, *i*, with coiled cloud pattern and four human-shaped legs.

Plate XIX. Various Types of Vessels of the Period of Warring States



1. 獸形蓋有蓋長壺
Long jar, *hu*, with cover and animal-shaped handles.



4. 銀錯龍華紋簋
Deep circular vessel, *kuei*, with silver inlaid dragon-flower pattern decoration.



5. 蟠螭鹿紋有蓋卮
Low bowl with cover, *chih*, decorated with coiled animal and deer pattern.



2. 蟠螭紋大鼎
Large cauldron, *ting*, decorated with coiled animal pattern.



6. 獸脚禽注(口)盃
Kettle, *ho*, with animal-shaped legs and bird-shaped spout.



3. 四鑿鑑
Water mirror, *chien*, with four handles.



7. 有蓋蟠螭紋畫象壺
Covered jar, *hu*, decorated with coiled animal and elephant pattern.