

Highlights of the Archaeological Work of the Palace Museum Institute of Archaeology in 2014-2016

Since its establishment in 2013, the Palace Museum Institute of Archaeology has conducted a series of fruitful archaeological operations on several major focuses of the Museum's archaeological research. The following is a brief introduction of the important sites in and outside the Forbidden City that have been excavated and investigated.

I. The Ming and the Qing Palace

During 2014-2016, the Institute of Archaeology carried out a total of twenty-seven projects of archaeological investigation and excavation within the Forbidden City, including nine archaeological operations (including the excavation of *Da gaoxuan dian*, or Grand Hall of the Supreme Profundity) and eighteen archaeological surveys.

Rescue Excavation of the Site of the Power Capacity-Increasing Pipeline Project of Southern Three Abodes

Southern Three Abodes (*Nan san suo*) is located by the south border of the outer eastern section in the Forbidden City. The excavation at the construction site of the pipeline power well for the southeast power capacity increasing project outside the Southern Three Abodes reveals the gutters, wall aprons, city wall foundations and stone linings joining the ground (Fig. 1 and Fig. 2). The gutters run parallel to the city walls; between them there is a distance of three meters. With the section rectangular, the gutters, 0.6 meters wide and 1.2 meters deep, are paved with grey bricks on the bottom and walls and covered with stone slabs. Between the gutters and city walls there lie the wall aprons neatly paved with bricks. The aprons stretch directly to the stone linings under the bricks of the city wall surfaces. This ancient drainage system was built and used roughly in the same time as the city walls. This shows that when the Forbidden City was built, the city defense system aboveground and the drainage system underground were planned in a unified fashion.

Partial digging under the aprons reveals the common foundation for the walls and aprons of the Forbidden City. The foundation, with a total thickness of about 2.4 meters, is composed of layers of loess and of brick & tile pieces alternately (each layer about ten to twenty-five centimeters thick). There is very little other content in rammed earth (Fig. 3). Under the rammed foundation, there is an earthen bedding layer about fifteen centimeters thick, which contains pieces of Jin-dynasty (1115-1234) Ding-kiln porcelain and Yuan-dynasty (1272-1368) glazed elements, which verifies the records in the relevant literature concerning the time of the construction of the structural work of the Forbidden City.



图 1、2014 故宫南三所外东南电力井发现的墙基、地面、排水沟与地面以下的夯土基础（北向南）

Fig. 1 Wall foundation, ground surface, gutters and rammed-earth foundation underground (from north to south) discovered in 2014 at the site of the southeast power well outside the Southern Three Abodes

夯土基础 Rammed-earth foundation
 东城墙 East city wall
 墙基土衬石 Foundation stone lining
 破坏沟 (G2) Intrusive Trench
 铺砖地面 (DM2) Brick ground floor
 排水沟 Drainage ditch



图 2、2014 故宫南三所外东南电力井发现的墙基、地面、排水沟与地面以下的夯土基础（西北向东南）

Fig. 2 Wall foundation, ground surface, gutters and rammed-earth foundation underground (from northwest to southeast) discovered in 2014 at the site of the southeast power well outside the Southern Three Abodes

夯土基础 Rammed-earth foundation
 东城墙 East city wall
 破坏沟 (G2) Intrusive trench
 铺砖地面 (DM2) Brick floor
 排水沟 Drainage ditch
 现代地面 Modern ground surface



图 3、2014 故宫南三所外东南电力井探方井的墙基、地面、排水沟以下的夯土基础（西向东）

Fig. 3 Wall foundation, ground surface, gutters and rammed-earth foundation underground (from west to east) discovered in 2014 at the site of the southeast power well outside the Southern Three Abodes

Rescue Excavation of the Site of the Fire Fighting Pipeline Rerouting Project at Southern Warehouses

The Southern Warehouses (*Nan daku*) is situated in the southwest corner of the Forbidden City, near the south city wall. In the excavation process of the site of the fire fighting pipeline rerouting project, the original floor outside the buildings at the Southern Warehouses, and a porcelain piece pit breaking the floor, were discovered (Fig. 4 and Fig. 5). The original floor, buried 0.5 meter under the modern floor, is paved with grey bricks and partially severely damaged. The dumping pit penetrates the brick-paved floor and the earthen foundation underneath. Lying from due north to due south, it is about 1.7 meters wide, 2.6 meters long from east to west and about 0.9 meter deep. The pit walls are rather steep and the bottom fairly level. From the pit over 10,000 porcelain pieces are unearthed collectively (Fig. 6), which date back to the period from the years of the Hongwu reign (1368-1398) in the Ming dynasty (1368-1644) to the years of the Guangxu reign (1875-1908) in the Qing dynasty (1644-1911). Nearly all the porcelain pieces were produced by the imperial kiln (Fig. 7, Fig. 8 and Fig. 9). Some preliminary clearing shows that most of these porcelain pieces could be fitted together into complete vessels, chiefly daily implements such as bowls, cups, plates, bottles, basins and vats, as well as a small number of ritual vessels and ornamental objects like *zun*, *dou*, *jue* vessels and incense burners.

After broken, porcelain commissioned for the exclusive use of the imperial court was buried collectively rather than disposed of casually. Clearly it was dealt with differently from that produced by non-imperial kilns in the Forbidden City. The discovery shows the paramount status of porcelain for imperial use and makes up the missing information in the relevant literature concerning the disposal of porcelain for imperial use. Moreover, the phenomenon is of the same nature as the dumping pit of shoddy porcelain for imperial use discovered at the site of Jingdezhen Imperial Kiln. The same practice at the places of production and use fully testifies the emperor's monopoly over porcelain for imperial use and the rigorous measures taken to maintain the imperial family's privilege. The pits offer important physical evidence for a deeper understanding of the production and use of

handicraft products for official use represented by imperial-kiln porcelain.

The excavation trench reveals that the earthen bedding layer underneath the original floor on the east and west sides outside the Southern Warehouses has been broken by multiple ash pits or lime stone layers, where large quantities of broken jade and stone implements, jade and stone ballasts, broken crystal, bone and clam implements, broken tridacninae and kapala bowls (Figures 10-13) were unearthed. Some jade and stone implements seemed to have been damaged from heating. Jade and stone ballasts, bone and clam implements mostly bear traces of processing such as cutting and drilling. On the interior walls of most kapala bowls there are residues of cinnabar incantations in Sanskrit or Tibetan; their edges show traces of processing or grooves for joining other accessories. These samples have provided important physical materials for research on handicraft production of the Imperial Household Department of the Qing palace. As the findings have shown, the broken pieces of handicraft products and materials were from the Southern Warehouses and dumped and buried there near the warehousing area as waste. They had been disposed of similarly to porcelain for imperial use. This shows the high consistency of the article management system in the Qing palace.



图 4、2014 故宫南大库发现的库房基座台明、室外铺砖地面与瓷器埋藏坑（西向东）

Fig. 4 Storage foundation aprons, outdoor brick floor and porcelain dumping pit (from west to east) discovered in 2014 at the Southern Warehouses

南大库基座台明 Foundation apron at the Southern Warehouses
室外铺砖地面 (DM1) Outdoor brick floor
瓷器埋藏坑 (H1) Porcelain dumping pit
地而下垫土 (4) Bedding soil under the floor



图 5、2014 故宫南大库发现的库房基座台明、室外铺砖地面与瓷器埋藏坑（南向北）
 Fig. 5 Storage foundation aprons, outdoor brick floor and porcelain dumping pit (from south to north) discovered in 2014 at the Southern Warehouses

南大库基座台明 Foundation apron at the Southern Warehouses
 现代地面 Modern floor
 现代管道盖板 Cover of modern pipeline
 室外铺砖地面 (DM1) Outdoor brick floor
 瓷器埋藏坑 (H1) Porcelain dumping pit
 地面无垫土 (4) Bedding soil under the floor



图 6、2014 故宫南大库瓷器埋藏坑 (H1) 清理现场
 Fig. 6 Clearing of the porcelain clearing pit (H1) at the Southern Warehouses



图 7、2014 故宫南大库瓷器埋藏坑出土的瓷器残件标本
 Fig. 7 Broken porcelain pieces unearthed in 2014 from the Southern Warehouses porcelain dumping pit



图 8、2014 故宫南大库瓷器埋藏坑出土的瓷器残件标本
 Fig. 8 Broken porcelain pieces unearthed in 2014 from the Southern Warehouses porcelain dumping pit



图 9、2014 故宫南大库瓷器埋藏坑出土的瓷器残件标本
 Fig. 9 Broken porcelain pieces unearthed in 2014 from the Southern Warehouses porcelain dumping pit



图 10、2014 故宫南大库外出土的玉石器残件标本
 Fig. 10 Broken jade ware unearthed in 2014 outside the Southern Warehouses



图 11、2014 故宫南大库外出土的玉石器残器标本
 Fig. 11 Broken jade ware unearthed in 2014 outside the Southern Warehouses



图 12、2014 故宫南大库外出土的玉石器碴头标本
 Fig. 10 Shoddy raw jades unearthed in 2014 outside the Southern Warehouses



图 13、2014 故宫南大库外出土的骨蚌器残件标本
 Fig. 13 Broken raw bone and clam pieces unearthed in 2014 outside the Southern Warehouses



图 14、2014 故宫南大库外出土的嘎巴拉碗残件标本
 Fig. 14 Broken pieces of Kapala bowls unearthed in 2014 outside the Southern Warehouses

Rescue Excavation of the Site of the Heating and Power Pipeline Improvement Project in Garden of Palace of Compassion and Tranquility

The Garden of Palace of Compassion and Tranquility (*Cining gong huayuan*) is located in the middle of the outer western section in the Forbidden City and on the south of the Palace of Compassion and Tranquility (*Cining gong*). At the site of the heating and power pipeline improvement project between Gate of Eternal Faith (*Changxin men*) and Gate of Eternal Festivity (*Nantian men*) on the east side of the Garden of Compassion and Tranquility, gutters beneath the modern floor were discovered, as well as large areas of approximately contemporary brick floor buried 0.4 meter below (Fig. 15). The gutters are an inverted trapezoidal-sectioned trench, 1.8 meters wide and 1.4 meters deep, with a rammed bottom paved with stone slabs and grey bricks, sides paved with stone slabs, as well as stone covers. Revetments are built to reinforce the trench walls with grey bricks, some of which bear the inscription of the reign title Jiajing (r. 1522-1566). The nearby floor of the gutters is

paved neatly with grey bricks, with white-lime joining. In the rammed earth layer underneath, broken porcelain pieces of the reigns of Jiajing and Wanli (r. 1573-1620) have been unearthed (Fig. 22: 5-6).

Underneath and adjacent to the paved floor, an earlier and larger-scale architectural base site (Fig. 16 and Fig. 17) was discovered with probe trenches and a probe holes. The base site is made up two neatly laid-out large sets of brick foundations for large-sized brick architecture, one in the south and the other in the north. Every set of brick foundations is arranged in four lines running east to west and two lines running north to south, eight foundations altogether. The space between every two neighboring foundations, either south and north or east and west, is about 2.34 meters. The space between the two sets is approximately 10.1 meters. The brick foundations all rest on earth, with a total height of about 4.1 meters. They are composed of four parts which are, from down to top, wooden spikes, “lining stone rests” (*chen-shi-fang*), lining stones and the brick main structure (Fig. 18). The wooden spikes made of logs are driven directly into soil at the edges of the foundation. The lining stone rests, also made of logs, are located underneath the foundation with the scope of the ground spikes. They are laid into two layers and the gaps between them are filled with rammed earth and brick pieces. On the “brick-and-earth” layer there is a layer of stone linings (fig. 19). Through sampling, it is found that the ground spikes and lining stone rests are made of spruce or larch. The brick main structure of the foundation consists of twenty-one layers of grey bricks, laid with no tapering whatsoever. Each foundation measures 2.44 x 2.44 meters. The four walls and top surface are all built with the half-brick technique, with the bricks lining the four sides of the top surface. The gap between every two neighboring brick foundations is filled with rammed earth of the same thickness, which comprises alternate layers of earth and of broken bricks and tiles. Lime is used as filling between broken bricks and pieces. The surfaces of the loess layers all show traces left by pressing the broken bricks and tiles. Each combination of a loess layer and a broken-brick-and-tile layer measures about twenty centimeters. There are fifteen such combined layers in total (Fig. 20 and Fig. 21). In the rammed earth, broken pieces of green-glazed tiles of red-sand roughcast and green-glazed “protrusive-lip” bowls can be occasionally found, with features of the late Yuan and early Ming dynasties (Fig. 22: 1, 2, 3, 4).

To the south of the excavation site in the Garden of Palace of Compassion and Tranquility, four combined layers of loess and broken bricks and tiles can only be found under the modern floor. No brick foundation or multiple-layer rammed earth can be found. This not merely provides help for the continued effort to define the scope of the site of the large-scale building; the use of different ramming techniques in the same area changes the former perception that all the foundations of the buildings in the Forbidden City were built in one construction effort.

Now the area where this site lies has been open to the public.



图 15、2014 故宫慈宁花园东遗址发现的排水沟、护壁与铺砖地面（东向西）
 Fig. 15 Drainage ditch, protective walls and brick floor (from east to west) discovered in 2014 at the site east of Garden of Palace of Compassion and Tranquility

排水沟 Drainage ditch
 排水沟护壁 Protective wall of drainage ditch
 早期建筑基址（砖砌结构） Foundation of earlier architecture (bricks)
 砖铺地面(ZM2) Brick floor



图 16、2014 故宫慈宁花园东遗址发现的铺砖地面与建筑基址全貌（西向东）

Fig. 16 A full view of the brick floor and foundations (from west to east) discovered in 2014 at the site east of Garden of Palace of Compassion and Tranquility

砖铺地面(ZM2) Brick floor

早期建筑基址（夯土结构） Foundation of earlier architecture (rammed earth)

早期建筑基址（砖砌结构） Foundation of earlier architecture (bricks)



图 17、2014 故宫慈宁花园东遗址发现的排水沟、铺砖地面与建筑基址（西向东）

Fig. 17 Drainage ditch, brick floor and foundations (from west to east) discovered in 2014 at the site east of Garden of Palace of Compassion and Tranquility

砖铺地面(ZM2) Brick floor

早期建筑基址（夯土结构） Foundation of earlier architecture (rammed earth)

早期建筑基址（砖砌结构） Foundation of earlier architecture (bricks)



图 18、2014 故宫慈宁花园东遗址发现建筑基址的夯土与砖砌结构解剖全貌（北向南）

Fig. 18 Section of the rammed earth and brick structure of a foundation (from north to south) discovered in 2014 at the site east of Garden of Palace of Compassion and Tranquility



图 19、2014 故宫慈宁花园东遗址发现建筑基址的地钉与衬石枋（北向南）

Fig. 18 Ground spike and lining stone rests (from north to south) discovered in 2014 at the site east of Garden of Palace of Compassion and Tranquility



图 20、2014 故宫慈宁花园东遗址发现建筑基址的砖砌与夯土结构（西向东）
 Fig. 20 The brick and rammed earth foundations (from west to east) discovered in 2014 at the site east of Garden of Palace of Compassion and Tranquility



图 21、2014 故宫慈宁花园东遗址发现建筑基址的夯土层表面夯筑砖瓦印痕（西向东）
 Fig. 21 Traces from ramming broken bricks and tiles on the surface of a rammed earth layer of a foundation (from east to west) discovered in 2014 at the site east of Garden of Palace of Compassion and Tranquility



图 22、2014 故宫慈宁花园东遗址建筑基址夯土层出土的陶、瓷标本
 Fig. 22 Pottery and porcelain pieces unearthed from the rammed earth layers of the foundations discovered in 2014 at the site east of Garden of Palace of Compassion and Tranquility

Rescue Excavation at the Site of the Fire Control Project West of Gate of Thriving Imperial Clan

There were altogether four probe pits and trenches at the site west of Gate of Thriving Imperial Clan (*Longzong men*). The archaeological operation cleared two modern pipeline trenches and covered an area of 110 square meters, of which sixty-two square meters was excavated. Two brick floors--ZM1 and ZM2, one brick drainage ditch—ZG1, one wall and doorway foundation—Q1, three brick column bases, two rammed earth and brick foundation trenches—C2 and C3, two rammed earth brick-paved foundation trenches—C1 and C4, one large-area plain rammed earth stratum (stratum 4), etc. have been discovered. The plain rammed earth stratum and the rammed earth brick-paved foundation trenches, which date back to the earliest time of all, were first discovered in the Forbidden City in terms of stratigraphical relationship, architectural technique and unearthened relics.

The rammed earth brick-paved foundation trench, C4, lies east of the probe trench T0101 and cannot be seen at the south wall of the probe pit. The southern side is situated inside the probe trench, broken in the course of the project. The opening is about 2.1 meters wide from north to south. There are a total thirteen strata, alternating rammed earth and brick-paved strata. The plain rammed earth stratum, i.e. Stratum 4, stretches a fairly large area, with the upper part showing distinct traces of ramming and the lower part containing grey bricks, broken pieces of grey-roughcast tiles with textile pattern and red-roughcast glazed tiles with mask clay, iron blocks, bowl pieces with white glaze covered by black glaze, bottoms of black-glazed plum bottles, etc. The most abundant relics have been unearthened in the lowest stratum, including a fairly great amount of grey bricks, broken pieces of grey-roughcast tiles with textile pattern, cylindrical tiles, red-roughcast glazed tiles with mask clay, a small number of pieces of “thorny-edge” (*mangkou*) white porcelain bowls and pieces of greyish white-glazed bowls, etc. Underneath Stratum 4 is the stratum of yellow coarse sand; further down lies the stratum of raw soil.

The round and rectangular glazed tiles with dragon motifs and irregular-shaped ornamental tiles collected in the plain rammed-earth stratum near the local fire-control trench show distinctive features of the Jin and Yuan dynasties. This indicates that the accumulation from the Gate of Thriving Imperial Clan westward to the Leftover Bridge (*Duanhong qiao*) has close relations to the buildings of the Imperial Palace of the Yuan dynasty.

The site showing a clear stratigraphical relationship of the Yuan, the Ming, and the Qing dynasties, discovered west of the Gate of Thriving Imperial Clan, can be said to be “the Three Strata of the Forbidden City”, which are of great significance to studies on the layout of the Yuan palace, the history of the Forbidden City and the ancient history of Chinese architecture.

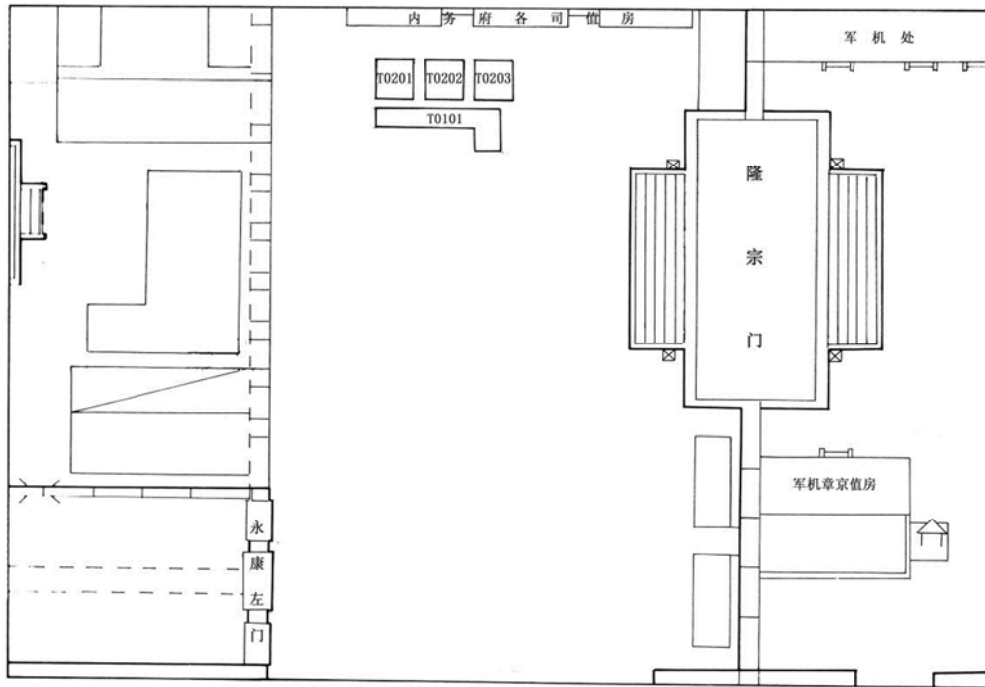


图 23、故宫隆宗门西消防管道工程工地遗址探方平面图

Fig. 23 Plan of the probe pits at the site of the fire-control pipeline project west of the Gate of Thriving Imperial Clan

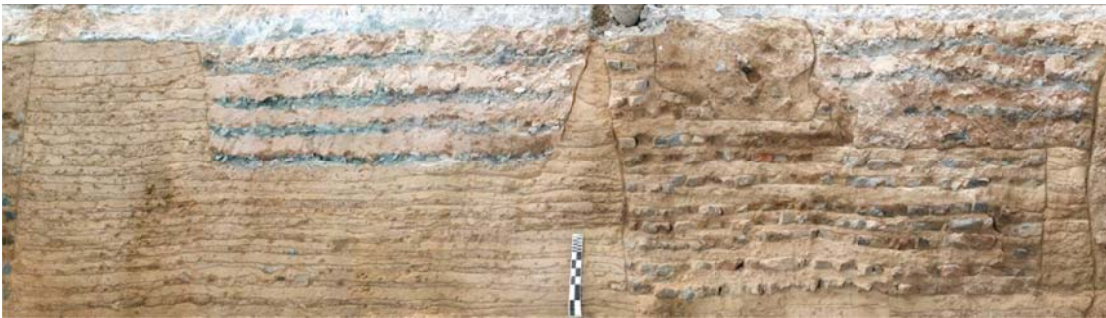


图 24、T0101 探沟北壁照片

Fig. 24 North wall of the probe trench T0101



图 25: 1、T0101④底:1, 绿釉琉璃瓦残片

Fig. 25: 1. T0101-4-Bottom-1, green-glazed tile piece



图 25: 2、T0101④:1, 黑釉梅瓶底部残片
Fig. 25: 2 T0101-4 -1, black-glazed plum bottle bottom piece



图 25: 3、T0101④底:3, 白釉碗口部残片
Fig. 25: 3. T0101-4-Bottom-3, White-glazed bowl piece

2014-2016 年紫禁城考古工作汇总表

Archaeological Operation in the Forbidden City during 2014-2016

Serial	Location	Site	Work
001	On the east and west sides of the south gate to the Southern Three Abodes	Site of Ming and the Qing architecture	Archaeological excavation
002	On the east side outside of the east wall of the Southern Three Abodes	Gutters of the Ming and the Qing dynasties	Survey
003	Inside the south wall of the Imperial Buttery	Gutters of the Ming dynasty and relics on the ground	Survey and mapping
004	On the south side of the Southern Warehouses	Imperial-kiln porcelain dumping pit of the Qing dynasty	Archaeological excavation
005	East city wall on the east side of the Southern Three Abodes	Wall foundation, floor and gutters of the Ming dynasty	Archaeological excavation
006	Area east of the Gate of Gathering Happiness (<i>Lianxi men</i>) and south of the area of the Thirteen Courtyards	Gutters of the Ming and the Qing dynasties	Survey and mapping
007	East yard of the Garden of Palace of Compassion and Tranquility	Site of Ming and Qing architecture	Archaeological excavation
008	Inside the courtyard of the Hall of Embodied Treasures (<i>Baoyun lou</i>)	Site of the Qing architecture	Archaeological excavation
009	Southwest to the stone bridge of the East Prosperity Gate (<i>Donghua men</i>)	Revetments of the Qing river and remains of bridge foundations	Survey
010	East of the main hall of the	Site of the Ming architecture	Survey

	Palace of Compassion and Tranquility		
011	Southwest of Left Huiyin Gate to the Palace of Compassion and Tranquility	Strata of the Ming and the Qing dynasties	Survey
012	On the southeast side outside Left Gate of Everlasting Health (<i>Yongkang zuo men</i>)	Strata of the Ming and the Qing dynasties	Survey
013	Northeast to the Belvedere of Literary Profundity (<i>Wenyuan ge</i>)	Gutters of the Ming dynasty	Survey
014	On the east side to the north of the Leftover Bridge (<i>Duanhong qiao</i>)	Stratum and relics of the Qing dynasty	Survey
015	Shibakehuai, “Eighteen Pagoda-trees”, to the north of the Leftover Bridge	Site of the Ming architecture	Survey
016	East and west duty rooms of the Grand Hall of the Supreme Profundity (<i>Dagao xuan dian</i>)	Site of the Qing architecture	Archaeological excavation
017	East and west side houses of the Gate of Correct Department (<i>Duan men</i>)	Site of the Qing architecture	Survey
018	South of the south wall of Xiyiku, or “Warehouse of Opera Costumes”	Site of the Ming and the Qing architecture	Survey
019	East and south of Yizhangku or “Warehouse of Ceremonial Things”	Site of the Ming and the Qing architecture	Survey
020	Northwest of Right-wing Gate and east of the ice cellar of the Imperial Household Department (<i>neiwufu</i>)	Site of the Gate of Safeguarding Tranquility (<i>Baoning men</i>) of the Ming dynasty	Survey

021	Southeast corner tower	Terrace foundation of the Ming dynasty	Archaeological excavation
022	North city wall (<i>Beicheku</i>)	Site of the Qing architecture	Survey
023	Northwest to the side screen wall outside the Southern Three Abodes	Site of the ash pit of the Qing dynasty	Survey
024	To the west of the west wall of the Southern Three Abodes	Ground site of the Qing dynasty	Survey
025	To the west of Gate of Thriving Imperial Clan	Strata and relics of the Yuan, the Ming, and the Qing dynasties	Archaeological excavation
026	To the northwest of the Gate of Eternal Faith	Site of the Ming architecture	Survey
027	To the southwest of the Leftover Bridge	Strata and ground relics of the Ming dynasty	Archaeological excavation

Locations of Archaeological Operations in the Forbidden City between 2014 and 2016



* 图中所示序号与【2014-2016年紫禁城考古工作汇总表】中序号相对应

*The serial numbers indicated in this map correspond with the serial numbers in the table "Archaeological Operations in the Forbidden City during 2014-2016"

I. Archaeological Operations Related to the Imperial Court

Excavation of the Imperial Kiln in Jingdezhen, Jiangxi Province

During 2014-2015, the Palace Museum Institute of Archaeology, the Peking University School of Archaeology and Museology, Jiangxi Provincial Institute of Cultural Heritage and Archaeology and Jingdezhen Municipal Ceramics Institute of Archaeology formed a joint team of archaeological investigation to launch an archaeological excavation of the site of the imperial kiln of the Qing Dynasty in Jingdezhen. The site of excavation is located in the west of the central section of the Imperial Kiln Site Park, to the south of Longzhu Pavilion.

In 2014, over 60 sites were investigated (Fig. 26), including 11 house foundations, 10 wall foundations, 30 ash pits, 2 canals, 1 courtyard, 1 road, 3 pulley block sheaves, 2 precipitation pools and 2 vats. The cultural relics unearthed chiefly include porcelain, color paints, kiln implements, porcelain tiles, building components, porcelain-making tools, etc. There are a variety of porcelain products from the Yuan to Qing dynasties. Besides, some porcelain made by Jiangxi Porcelain Company during the period of the Republic of China and after the founding of the People's Republic of China in 1949 was also unearthed. The archaeological excavation revealed the relics of porcelain-making workshops, in use from the years of Zhengde to the years of Jiajing in the Ming Dynasty, possibly the very workshops making color-on-glaze porcelain. This was the first discovery of its type in the archaeological investigation of the site of the imperial kiln over the years, which has offered new materials for a better understanding of the inner structure and functional division of the imperial kiln of the Ming Dynasty.

The excavation site in 2015 is located to the west of that in 2014. The operation was shallower and took place in a shorter duration. In the cultural stratum of the period of the Republic of China a lot of porcelain pieces were unearthed. Underneath the cultural stratum, the relics of brick walls and surfaces were discovered. A round shallow pit was excavated, where porcelain pieces of the late Ming Dynasty and the period of the Republic of China, mainly white-glazed porcelain and blue-and-white porcelain, had been buried collectively. Some of the vessels bear the inscriptions of Jiangxi Porcelain Company or Jiangxi Industrial School. The excavation is significant to studies on the reorganization of the imperial kiln and the start of Jiangxi Porcelain Company in the late Qing Dynasty and the period of the Republic of China. It is also of great value to research on porcelain making in the period of the Republic of China in Jingdezhen.



图 26、2014 年御窑遗址考古发掘全景

Fig. 26 A bird's-eye view of the archaeological excavation of the site of the imperial kiln in 2014



图 27、F6 东半部分（北→南）

Fig. 27 East section of F6 (from north to south)



图 28、H16 内瓷片堆积

Fig. 28 Deposit of porcelain pieces in H16



图 29、“正德年制”青花款侈口鼓腹花盆图 30、“正德年制”刻款花口花盆

Fig. 29 Blue-and-white porcelain flower pot with broad mouth and protrusive belly, “Made in the Years of Zhengde”

Fig. 30 Curvy-edged flower pot with a carved inscription, “Made in the Years of Zhengde”



图 31、“正德年制”款斗彩半成品图 32、三足洗斗彩半成品三足洗

Fig. 31 Semi-finished colors in contrasting colors, “Made in the Years of Zhengde”

Fig. 32 Semi-finished three-footed brush washer in contrasting colors

Excavation of the Site of Pangwan Glaze Kiln at Qingtang Village, Danjiangkou City, Hubei Province

Panwan Glaze Kiln was a ceramics kiln of the Ming Dynasty producing glazed building materials and fine pottery. The kiln was discovered in the 3rd national cultural heritage survey and excavated by the Palace Museum. The preliminary survey showed that the kiln covered an area of not less than 2,000 square meters, with six furnaces. So far an area of about 400 square meters has been excavated, including three of the furnaces. There are traces of the workshops including the clay-mixing pool, clay-condensing pool and clay-storing terrace. Large quantities of cultural relics, chiefly glazed building materials such as tiles, drip-tiles, pan tiles, cylindrical tiles and eave tiles, as well as saggars,

support pins, kiln implements, etc.

Investigation has shown that the glazed tiles bearing the inscription “He-ji” are the same as the tiles of Wulong Palace (“Palace of Five Dragons”) and Yuxu Palace (“Palace of Jade Void”) on Wudang Mountains in size, roughcast and glaze color. It can basically be concluded that Pangwan Glaze Kiln was the exclusive supplier of glazed building materials to Wudang Mountains in the Ming Dynasty. As for the form of the furnaces, they have a rectangular plan and consist of the fireplace, chimney and chamber. The front grate, fireplace, air vent and doorway have been preserved intact. The kiln walls on the two sides of the doorway are built with tiles and grey bricks marked with the reign title.

Glazed building materials were under strict control in the Ming and Qing Dynasties. The building complex on the Wudang Mountains comprised imperial religious buildings in the Ming Dynasty. Thus the kiln was undoubtedly an imperial glaze kiln. The relationship of the kiln, village and Wudang culture and the importance and uniqueness of the discovery among archaeological discoveries concerning ceramics have confirmed that most building materials for the ancient building complex of Wudang Mountains had been made, processed or collected locally in Danjiangkou City or in the area the Wudang Mountains, except the main building materials or components transported from elsewhere. This fully demonstrates that when the Wudang Mountains ancient building complex was constructed, the large quantities of building materials were acquired locally. The discovery of Panwang Kiln Site fills a gap in the history of the Wudang Mountains ancient building complex.

In 2016, the Palace Museum Institute of Archaeology will continue the archaeological excavation of the glaze kiln site in collocation with its local partners.



图 33、窑炉遗迹
Fig. 33 Relics of a furnace



图 34、航拍遗址全景
Fig. 34 A bird's-eye view of the site

III. Joint Archaeological Operations with Provincial and Municipal Partners

Archaeological Survey and Research Program of the Lower Reaches of the Qihe River, Henan Province

The archaeological survey and research program of the lower reaches of the Qihe River started in the spring of 2009. It was launched mainly because of the discovery of tombs of pre-Shang culture at Liuzhuang Site in Hebi. Thus a plan was made to launch a sweeping archaeological operation in the form of survey, data collection and record keeping to make clear of the distribution of the pre-Shang culture and the relationship between the site and the tombs.

The Qihe River originates in the Qizi Mountains in Lingchuan County, Shanxi Province. After entering Henan, it flows across Huixian City, Linzhou City and Junxian County into the Weihe River, with a total length of 161 kilometers. The lower reaches of the river refers to the area it flows across between the mountainous area and the Weihe River, covering Hebi City, Qixian, Junxian and part of Tangyin.

According to the topographical conditions, we conduct a sweeping operation of collecting ancient relics in a stretch of 20-50 meters, recording the coordinates of the points of discoveries and collecting and recording the relics. The relics can be chronologically classified into ten classes i.e. Peiligang, Hougang Phase I, Dasikong-Type, Longshan, pre-Shang, early Shang, late Shang, Western Zhou, Eastern Zhou and Han. On a 1:1000 vector map, the distribution of collection points and relics of different periods are marked.

Opposite Liuzhuang Tombs right across the river lies the pre-Shang site of houses. Wangzhuang Site has been completely mapped. It is estimated that the site will come to light completely and all the

materials will be sorted out within four years.



图 35-36、地理位置
Figure 35-36 Geographical location

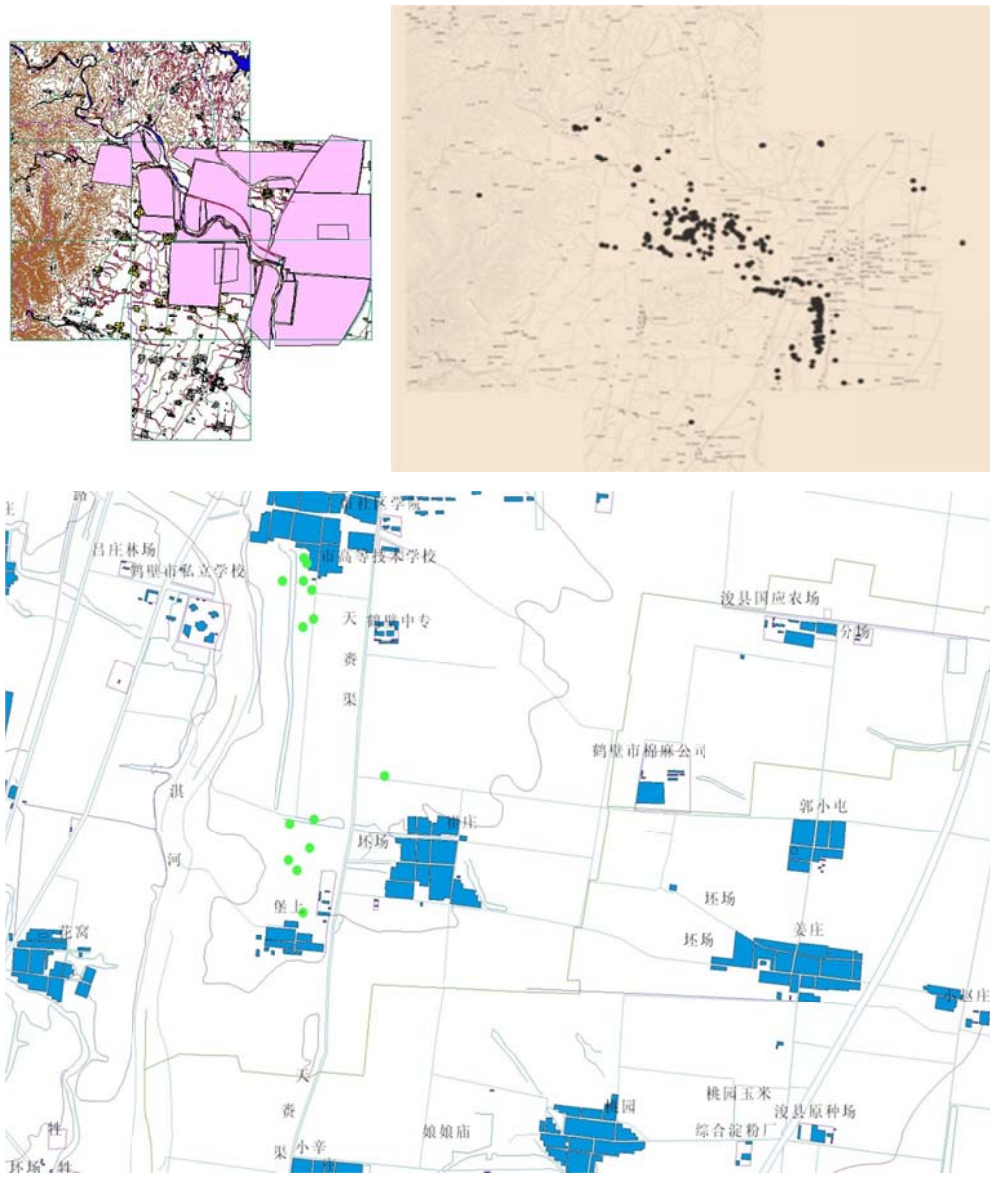


图 37-39、区域内文化遗址分布图
Figures 37-39 Distribution of historic sites in the area



图 40-41、采集遗物
Figure 40-41 Relics collected

IV. International Exchange and Collaboration

Archaeologic Excavation of Pattanam Site in Kerala, India

In 2014, the Palace Museum signed the *Memorandum of Understanding on the Collaboration between the Palace Museum in Beijing, China and Kerala Council for Historical Research, India*. According to the MOU, during June, 2014-December, 2015, the Palace Museum Institute of Archaeology sent its work group three times to Kerala, India, which worked together with the archaeological teams of India to carry out archaeology surveys and excavations and sort out the research results.

The important ancient Indian cities and ports along the southwest coast were surveyed, from Trivandrum northward to Kozhikode. Over 10,000 cultural relics were collected from water, mainly local red-sand-mold pottery, including color glass ornaments possibly from the Mediterranean, bronze coins and peacock blue-glazed pottery from the Islamic regions. Relics from China was also unearthed, including over 500 pieces of porcelain and more than 1,300 coins. The porcelain pieces can be classified into blue porcelain, green-glazed porcelain with brown under glaze, brown-glazed porcelain, white-glazed porcelain, black-glazed porcelain and blue and white porcelain, which were produced in Zhejiang, Jiangxi, Guangdong, Fujian etc. around the 10th-14th centuries. Most of the coins have been preserved well. A few have been rotten. As indicated by the inscriptions, these coins were from the Tang to Yuan Dynasties. The largest number of coins were from the 8th-13th centuries. It can thus be inferred that the port of Kollam may very well have been an important port on the southwest coast of India during the Chinese Tang, Song and Yuan Dynasties.

The archaeological excavation concentrated at Pattanam Site in the northeast of Kochi. The site is a large-scale ancient settlement located by the Huishui River. In the third-stage cultural stratum, Chinese porcelain of the 16th-20th centuries were unearthed, alongside porcelain from the Netherlands and Japan. The Chinese porcelain mainly include blue-and-white porcelain, white porcelain and porcelain with colors on glaze, produced in Jiangxi, Fujian and Guangdong. Products produced by Dehua Kiln and Zhangzhou Kiln in Fujian are the largest in number. Judging by the findings, during the late Tang Dynasty to the Qing Dynasty, the locations of the ports on the southwest coast of India were likely to have changed. The area was the destination of the trade on the sea between Europe and Asia, as well as an import transit port of goods.

The two parties have planned to carry out comprehensive in-depth surveys and field excavations in the port of Kollam with the hope to date the relics in and near the ports and further the studies on

their distribution and nature.



图 42、中方考古队员在帕特南遗址进行发掘
Fig. 42 Chinese archaeologist conducting excavation at Pattanam Site



图 43、中方考古队员在帕特南遗址进行采样
Fig. 43 Chinese archaeologist sampling at Pattanam Site



图 44、帕特南遗址出土中国瓷器标本 帕特南遗址出土中国铜钱标本
Fig. 44 Porcelain pieces and Chinese coins unearthed at Pattanam Site



图 45、中印工作队在帕特南遗址工地合影
Fig. 45 The Sino-Indian Archaeological Team at Pattanam Site, India

Collaboration with the German Archaeological Institute

In June, 2015, the Palace Museum signed a letter of intent with the German Archaeological Institute. The collaboration between the German Archaeological Institute and the Palace has been a good opportunity. It is not only the collaboration between China and Germany in archaeology, but also has built a platform for academic exchange between Europe and Asia.



图 46、与德国考古研究院合作签约仪式
Fig. 46 Signing Ceremony of the Letter of Intent with the German Archaeological Institute