PART I

MONUMENTAL BUILDING U6

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GENERAL INFORMATION

Location

The ruins of house U6 are situated on the south-eastern outskirts of the settlement, 50 metres north-east of the present-day coastline of the lagoon and 120 metres south-west of the ancient road which separated the settlement from its necropolis. On the north-west, 29 metres from the ruins, are the central, densely built-up excavation area U7[1] and behind it the remains of houses U13 and U14, which were situated at the northern edge of the settlement. To the north and south-west of the house, in areas U1, U3 and U8-9, there are remains of buildings so far unexcavated; and to the south – on the gently sloping area U10 – lie the remains of a large and complicated building, as revealed by Russian-Danish excavations.[2] To the east and south-east of house U6, stretches an open space devoid of any traces of buildings; however, to the north-east, in area U2, a group of standard dwellings constructed as one rectangular block with a single ground plan has been excavated (Pls. 6-8).[3]

The general plan (Pl. 6) clearly shows that the axes of the ground plan of U6 blend well with the overall spatial structure and layout of the settlement, the necropolis, and the road separating them. The basis for the layout of the settlement is its most ancient nucleus, which is of rectangular plan with axes aligned on the cardinal points (Pl. 7). Only in the northern and north-eastern outskirts of the settlement have slight deviations from the general principle been revealed. They are seen in a minor displacement of the orientation of the axes of the ground plan. The reasons for such deviation have not so far been fully understood.

The ruins of house U6 lie 3.5 m above the sea level of 1970. That the building commanded the settlement territory is still readily appreciable in the context of the present-day relief of the area.

View before the Excavations. State of Preservation

In contrast to those neighbouring structures, the outlines of the house were very easily discernible in relief as a low (0.4-0.9-metre-high) earthen bank of square plan surrounding a depression (also rectangular). In the centre of the latter, the edges of a rectangular well cut in the rock could be distinguished. The well was filled up to the top with soil and modern refuse, and grown over with rich grass.

In some spots, masonry blocks were visible on the surface of the earth banks. We were able to trace the position of a number of buried walls by the luxuriance of the herbage. Judging by these surface traces, the dimensions of the building were 35 × 35 metres.

Just like the rest of the settlement the surface area of house U6 was covered with typical

steppe feather-grass and other graminaceous herbs. No significant traces of contemporary disturbance of the surface were observed except at the northern corner, where there were the deep ruts of a new cart-track; also there were indications of stones having been removed from the outer walls all round the perimeter.

REMOTE SENSING SURVEYS BEFORE THE EXCAVATIONS

In 1966 and 1969-1970 an analysis of aerial photographs as well as interdisciplinary archaeological and geophysical investigations were carried out in order to draw up a detailed plan of the buried structures before starting excavations. All the investigations were conducted using a common grid of 5-metre squares so as to give a fair comparison of the results of surveys carried out by each of the different methods.[4]

Analysis of aerial photographs. The archive vertical aerial photographs of 1956 were analysed.[5] The photographs taken with a wide-format camera proved to be the most informative for archaeological decoding. The shots were enlarged to a variety of different scales.

House U6 stands out very plainly in comparison with the traces of other structures. Against the general background it is easily distinguishable as a clear-cut light square with slightly rounded corners. The inner part of the square is occupied by a dark patch of almost regular rectangular shape (Pl. 5). This building, so readily discernible on the aerial photos, proved to be the only one with a plan which could be interpreted with assurance: there could be no doubt that it was a large structure built up around a central courtyard. The photos also clearly showed a broad entrance-gate in the middle of the south-western side leading directly into the courtyard (Pl. 9, *1*). An analysis of stereograms gave us reason to suppose that the ranges of rooms located on two sides of the courtyard – those facing towards the central part of the settlement and the ancient road – each consisted of a single-depth row of adjacent rooms; however, the layout of the two other sides of the building was much more complex.

Micro-relief surveys and geological and botanical mapping. In 1964 an approximate plan of U6 was drawn (Pl. 9, *2*);[6] in 1969, before the beginning of the excavation, levelling of the entire area was carried out using a 5 metre square grid. Within each square levellings were made at 0.5-metre intervals. On the basis of the data obtained, a plan of the micro-relief was drawn, with indication of 0.1 metre variations in height (Pls. 9, *3* and 9, *9*).

The plan reflected all protrusions of the ancient masonry on the surface as well as the outlines of buried walls which were traceable as strips of short, sparse grass and showed up particularly well under low sunlight (surveying was conducted with the sun at an altitude of 10-20°). Zones where the height and density of the herbage was considerably less than average were also fixed on the plan. These zones defined both the inner courtyard and certain rooms in which only a very thin layer of soil covered rich accumulations of pottery.

The micro-relief plan (Pl. 9, *9*) combined with the distribution plan of herbage according to height and density (Pl. 10) were compared with aerial photographs, and it enabled us not only to define accurately the outlines of the entire buried structure before the excavations began but also to have a plan of the location of inner rooms reflecting the ground plan of the area (Pls. 9, *3* and 10, *4*).[7] It became clear that the dimensions and the general layout of the building were very similar to those of the rural house excavated by S.F. Strželeckij on farm plot no. 25 in the neighbourhood of Chersonesos on the Herakleian Peninsula.[8] However, some differences were revealed in the plan of our building: in contrast to no. 25, no traces of a square tower protruding beyond the line of walls were found; there were no signs of any

buildings within the open area of the central courtyard; instead of a door protected by a tower, there was a broad entrance-gate and it was located not in a corner but in the middle of the south-western side. In addition, we had grounds to suspect that the rooms forming the perimeter of the complex all had standard areas.

In 1969 excavations were started in accordance with the plan of the buried remains – as revealed to us. However, the preliminary scheme of the building's layout proved to be still not detailed enough, and the arrangement of the rooms along the south-western and especially the south-eastern sides of the internal courtyard remained insufficiently clear for meaningful forecasting and planning of the excavations. It was therefore decided to carry out experimental geophysical surveys. I was optimistic because earlier, during excavation of the rural house near the Bay of Vetrenaya in the neighbourhood of the Chersonesean fortress of Kalos Limen (1962-63 in co-operation with K.K. Šilik) we had already obtained positive results from resistivity surveys by symmetrical profiles.

Remote sensing surveys. In 1970, after the north-eastern side and the northern part of the south-western side of the building had been entirely excavated, resistivity surveys of the whole unexcavated area were carried out by means of electric profiles.[9] The object of the surveys, besides that of obtaining a detailed plan of the buried structures, was to develop and improve different remote sensing methods in order to use them later for surveying other areas of the settlement.

For these surveys we used a very simple and under field conditions reliable set of serial low-frequency remote sensing ANCh-1 appliances consisting of a 20 Hz alternator, a selective tube AC milli-voltmeter, and a set of electrodes and wires (Pl. 9, *10*). The appliances were powered from 69-GRMTs-6 dry batteries.[10]

The technique based on symmetrical profiles was developed jointly with K.K. Šilik for similar rural houses in the Crimea during experimental work in 1964-65.[11] In employing this technique, resistivity surveying is carried out after establishing the major axes and peculiarities of the plan of the buried structures by means of the remote survey procedures noted above (aerial photographs, studies of the micro-relief and herbage, *etc.*). The measurements are taken on a system of crossed profiles which are aligned perpendicularly to the known axes of the plan (*i.e.* the buried walls). The density of the survey grid should be selected so as to provide sufficiently precise and reliable data for mapping the isolines of the geoelectric field.

The distance between the receiving electrodes MN and the interval between the measurement points on the profiles was 0.5 m. Such an interval (experimentally proved) was selected on the basis of the two following considerations. Firstly, the standard thickness of the wall socles of the typical Chersonesean urban and rural building of the 5^{th}-2^{nd} centuries B.C. is mostly in the range of 0.4-0.55 m. Therefore the interval between the receiving wires must be equal to or slightly less than these values. By increasing the MN interval, the precision of the measurements is decreased while increasing the interval of the measurements increases the probability of missing the objects being searched for (the walls in our case). Secondly, 0.5 m is a multiple of the excavation grid-square side of 5.0 m. It is therefore convenient for recording and processing the information, as well as for comparing it with the results of other surveys.

In our case the unexcavated part of the building was covered with a rectangular 2.0×0.5 m grid of measurement points which was, however, denser in some areas (1.0×0.5 m when necessary). Such a grid provided an acceptable degree of information from the resistivity surveys.

As an alternative to resistivity methods employing symmetrical profiles (the Chlum-

berger apparatus) – the method usually applied for archaeological surveys – V.V. Glazunov proposed and tested in the field the median gradients technique.[12] The latter proved to be efficient for overall investigation of large areas (975 sq metres in our case). However, the results were supplemented and checked using the classical symmetrical profiles technique.

The information gained from the survey was represented as plots and maps of isolines of the apparent electrical resistivity ΔU/J along the longitudinal and transversal profiles (Pl. 9, *4*). On the basis of these data Glazunov drew a plan of the unexcavated part of the building (Pl. 9, *5*). However, as the later excavation (1971) of the north-western part of the building actually showed, that plan had essential inaccuracies both in the interpretation of the measurements and in the topographical ties.

A correction and re-evaluation of the original geoelectric survey data using the information gained through the excavations enabled Glazunov to build a composite map of isolines by combining two isoline maps of residual anomalies ΔU/J along the longitudinal and transversal profiles. On the basis of this composite map, a second plan of the buried structures was drawn, and proved to be both more accurate and to correspond more closely to the results obtained by means of other remote sensing methods (Pl. 9, 7).

THE TECHNIQUE AND HISTORY OF THE EXCAVATIONS

The excavation technique. The preliminary investigations (including the remote sensing) enabled us to construct an observations system and to ensure that the excavations were aligned to correspond exactly with the axes of the plan of the buried structures. Moreover, the preliminary work also made it possible for field investigations to be planned ahead so that a previously determined number of rooms or courtyard areas could be excavated completely each season. To facilitate operations the whole of the buried building was covered by a grid of fixed rectangular sections 5.0 × 5.0 and 5.0 × 2.5 m in such a way that the sides of the building were strictly parallel to the sides of the grid squares. The entire excavation area amounted to 1500 sq metres. The grid squares were indexed alphanumerically (Pl. 11).

The excavations were conducted by clearing large areas according to layers of the real stratigraphy and searching the upper and lower boundaries of each layer, interlayer, or facia. The topsoil layer was removed by squares. The clearing of the courtyard and the outside areas was also done in squares. The fills inside the rooms were uncovered by clearing each room separately. In all cases the finds were recorded both on the plan and on the elevations relative to their stratigraphic contexts.

The stages of the excavations (Pl. 11). The first exploratory investigations were conducted in 1965 and 1967. The whole building was excavated in the period 1969-1974 and 1977. The excavations started at the eastern corner and were carried out counter-clockwise in a series of large sections (of not less than 100 sq m each).

1965. Preliminary surveys. Discovery and initial description of the settlement of Panskoye I.

1967. A rough summary plan of the settlement and a separate, more detailed plan of the remains of house U6 were drawn (Pl. 9, *2*). A stratigraphic pit 0.5 × 3.0 m was sunk in the internal courtyard of the building near the well (square G-4). Aerial photographs were compared with visual observations in the field. After the completion of our work for the season, additional clearing of the mouth of the well was carried out by members of the Donuzlav Expedition.

1969. Beginning of the regular excavations over an area of 125 sq m. *Rooms 2-4* at the north-eastern, and *room 1* at the south-eastern, side of the building (squares Zh-0, D-1 - Z-1) were uncovered.

1970. Excavation area of 100 sq m. Investigation of the rooms at the north-eastern side completed. *Rooms 5-6* and the northern part of *room 7* (squares A-1 - G-1) investigated.[13]

1971. Excavation area of 450 sq m. (squares A-2-7, B-2-7, V-2-3, 6-7, G-2-3). Eleven rooms (*7-17*) were uncovered along the north-western and south-western sides of the building, as well as adjoining sections of the courtyard and outside the perimeter wall.

1972. Excavation area of 425 sq m. (squares V-5-7, G-6-7 - E-6-7, Zh-4-7, Z-4-7). The southern part of the building was excavated; 13 rooms (*19-30*) were uncovered; the investigation of the structures within three rooms (*16-18*) located along the south-western and north-eastern sides of the building as well as of the adjoining areas within the courtyard and outside the building was completed. The gate leading into the courtyard (squares G-6-7) was excavated. Also, excavation of the western corner of the courtyard (squares B-5-6, V-6) was completed.

1973. Excavation area of 425 sq m (squares V-5-7, G-6-7 - E-6-7, Zh-4-7, Z-4-7). The ground plan of the building was now completely laid bare by the excavations. Five rooms (*31-35*) were uncovered; the remaining part of the courtyard was cleared out (except for square D-5); and excavations at the north-eastern (A-0 - Z-0) and south-eastern (Z-0-7) sides of the building were undertaken. Clearing of the well began; however, it was not possible to complete it that season because of a serious excess of subsoil water.

1974-75. A layer in square D-5 (25 sq m) was excavated; clearing of the courtyard was completed (with final checks) down to the level of its ancient surface (about 400 sq m).

1977. The well was investigated down to its bottom with the aid of a motorised pump and a diving suit. Check-digging inside the rooms of the northern range was completed down to the bedrock.

DESCRIPTION OF THE BUILDING COMPLEX

PLAN

The building is of precisely square plan with the outer dimensions of 34.2-34.5 × 34.2-34.5 (Pls. 12, *A* and 13). The total built-up area is about 1190 sq m.

The four corners of the building are strictly orientated so as to point towards the four cardinal points (356°). The deviation of 4° to the east is quite insignificant and possibly indicates that the designer of the building either orientated it by the North Star or the midday sun or simply aligned the structure with a more ancient layout and built the axes parallel to the outer walls of the earlier fortress U7, which dates to the first building period.

The building belongs to the closed-plan type of structure, with its accommodation and offices built around the periphery. Its central part is occupied by a large courtyard measuring of 23.5 × 23-26 m. In the middle of the courtyard there was a well cut in the rock. The only entrance – the gate leading into the courtyard – was located almost in the middle of the south-western side of the building. Ranged around the courtyard in single or double rows were 35 rooms serving various purposes. The doorways of the rooms gave onto the yard.

Some of the rooms (*3-6*, *8-11*) built in two single depths rows along the north-eastern and north-western sides were quite separate from one another, each having its own entrance from the courtyard. The other rooms built in single- or double-depth rows along the south-western and south-eastern sides, formed self-contained blocks of 2 or 3 intercommunicating rooms having one single entrance from the courtyard (Pls. 12, *A*, 14-16).

The layout described above as revealed by the excavations, was such as it had become through various piecemeal repairs and alterations up to the time of the destruction of the building. A reconstruction of the original plan and its subsequent development will be presented below, after a detailed description and consideration of the structural remains and architecture.

STRATIGRAPHY

The thickness of the cultural layer varied within the range 0.3-1.2 m (Pl. 12, *B*). The thinnest layer was in the central part of the courtyard and the thickest one within the rooms located round the perimeter.

In general, the cultural layer was homogeneous throughout the whole area. It consisted mostly of a dense, amorphous, raw clay and loam mass, which had formed due to the decay and natural decomposition of the mud-brick walls.

The topsoil was covered with turf. It contained objects dating from the late Hellenistic period (some fragments of 'Megarian' bowl found in the courtyard area), the Medieval period (small fragments of amphorae), and the 19th and 20th centuries (including cartridge-cases from the war of 1941-45 and refuse accumulated during the recent decades).

Round the perimeter of the courtyard, in the lower part of the layer and beneath the floors of the rooms annexed to the earlier ones, thin facias (intercalations) were revealed; these owed their existence both to certain building activities and to the gradual accumulation of a cultural layer of detritus/decayed building material near the base of the outer wall of an annexe.

The cultural layer (I) lies on the thin layer of buried soil (II) that is still preserved in some spots and that originally formed on the limestone bedrock (III).

Summary of the general stratigraphy of the site:

I. *CULTURAL LAYER*

Horizon IA. The turf layer, gradually merging into the underlying horizons. Thickness 0.10-0.15 m. This is actually the turf-covered upper part of the loamy horizons IB and IC transformed into a soil of southern chestnut-coloured chernozem type, with a poor humus content. The few finds from this horizon are thoroughly mixed up and cannot be separated chronologically. They are represented by various types of pottery, including tiny fragments of red-slipped ware, black-glazed vessels of the 4th and 3rd centuries B.C., and of Megarian bowl of the 2nd century B.C.; there are also small fragments of medieval amphorae and jugs with zonal grooves (7th-11th centuries?) and of vessels dating to the three most recent centuries. Other, contemporary materials included rifle and submachine gun cartridge-cases left from the First and Second World Wars and bottle splinters dating from the end of the 19th century to the time when the excavations began. The finds dating to different periods were distributed uniformly in the layer and were not separable stratigraphically. This indicates that

the natural soil-forming process has continued without further interruption ever since the formation of the major part of the cultural layer (horizons IB-IC).

Horizon IB. A layer of humus-containing, dense and dust-like grey soil, rich in archaeological materials and containing a large amount of crumbled stone. Thickness 0.20-0.30 m. This layer was found only within the area of the internal courtyard. The underside boundary of the layer was in contact with the ancient earth floor of the courtyard and was clearly marked by debris of pottery and other finds as well as by paving-stones. The layer was formed at the time the building fell into ruin.

Horizon IC. This layer consisted of dense yellowish grey loam with a high content of fine white lime particles. It contained all the remains of the stone structures of the building and surrounded the stone socles of the walls. All the rooms and the contiguous areas were filled with this layer. Its lower limit was demarcated by the floors of the rooms and, in the outside areas of the building, by the surface of the courtyard or the buried soil (layer II). Horizon IC reached its maximum thickness (0.80-1.10 m) above the middle of the floors of the rooms along the perimeter of the building. Outside the building and in the courtyard it tapered out smoothly. Altogether this layer amounted to an average of 15 metres in width along the perimeter of the building.

Inside the rooms the horizon IC was generally composed of two sub-horizons (IC_1 and IC_2). The upper one (IC_1) consisted of an almost pure loamy mass with a very small content of finds. The latter were represented mostly by small (sometimes rounded) pottery fragments, mainly of the flat Sinopean or 'Laconic'-type roof-tiles or body sherds of amphorae and red-clay plain ware. In the lower sub-horizon IC_2 – at the level of the floors of the rooms and on the earth surface of the courtyard or on its paving-stones – the concentration of finds markedly increased. Here were found large accumulations of pottery; metal, bone, and stone objects; coins *etc.*: this was the material dating to the time of the destruction of the building. However, in some rooms (*2*, *3*, *12*, *13*, *etc.*) the layer had a more complicated structure, consisting in fact of several intercalations alternating with micro-layers that bore the traces of burnt wooden ceilings. All these facias are described in detail below.

In terms of its composition and density the layer is identical to the mud-bricks found *in situ,* which suggests that this amorphous mass was formed by the decomposition and wash-out of collapsed mud-brick walls and other clay-containing elements (*e.g.* roofs, wall-plaster, *etc.*). The origin and conditions of this horizon's formation account for its lens-shaped cross-section.

II. *THE BURIED SOIL*

The buried soil lay beneath horizons IB (partly) and IC. Horizon IC included all remains of the building elements. On the surface of the buried soil were set the stone socles of all the rooms along the periphery of the building, the adobe floors in the rooms, and most of the stone-paved areas in the courtyard. This layer is presented all over the building apart from the middle of the courtyard where the bedrock (layer III) is immediately visible. Its thickness varies up to 0.35 m. In the upper part of the buried soil, isolated small fragments of pottery and metal (including coins) were recorded in a few places. These finds belong to the 4th century B.C. (*cf.* the detailed description below).

III. *THE BEDROCKS*

The buried soil (layer II) was formed above the dense spongy Pontic shellrock the surface of which was covered by so-called 'decomposed rock' (formed through decomposition of the rock surface). In the middle of the courtyard – around the well – horizons IB and IC lay directly on top of layer III. Here, there is a vigorous water-bearing horizon at a depth of 2.35-2.50 metres below the surface of the rock, probably at the point of contact between the limestones of the Pontic and Maeotic layers, which have different densities. (The well supplied the house with water and is still active).

In addition to the horizons of the cultural layer described above facias occurred at a few isolated points. Their description is nevertheless important for our knowledge of the history of the building.

Facias IC$_a$. In some places beneath the floors, *i.e.* below horizon IC, of *rooms 15*, *16*, *18*, *19* and *23* (in the inmost row opening onto the courtyard) thin intercalations (0.08-0.10 m thick) were uncovered. They were of a dense, dark, loamy texture with inclusions of fine fragments of stone, pottery, animal bones, and the shells of sea and land molluscs. In some places they were represented by a blend of gravel and crumbled lime mixed with loam. In all cases, the bases of stone wall socles of the second-row rooms stood on the surface of these intercalations, and the buried soil constituted the underlying horizon. Finds were rare and fragmentary. They included small wall fragments of amphorae and red clay vessels, and several fragments of kantharoi with both ribbed and plain bowls and spur handles coated with brownish glaze. The general date of these objects cannot be earlier than the early 3rd century B.C. Thus facias IC$_a$ were formed during the period between the construction of the house and its ultimate destruction.

Facias IC$_b$. These were found only beneath the length of the north-eastern *rooms 16*, *18*, *19*, *21*. Their thickness near the wall socles was 0.08-0.15 m; they were thinner to the north-east – towards the centre of the courtyard. The upper surface of the facias was easy to define because it constituted the surface of the courtyard on which the broken pottery was lying at the time when the building fell into ruin. The lower limit was hardly discernible; it was roughly defined by the bases of the walls of the innermost row of rooms and by the surface of the buried soil.

These facias consisted of dark grey, dense soil containing very fine fragments of pottery, small stones, small unidentifiable animal bones, and shells of molluscs. In addition to the pottery fragments dating in general to the 4th and 3rd centuries B.C., occasional objects dating to earlier periods were found: fragments of amphorae from Herakleia Pontike with stamps of the first and second groups according to Grakov's classification (Grakov 1926), a handle fragment from a Sinopean amphora with part of a stamp of the first group, according to Grakov 1929 (the device being an eagle upon a dolphin). The earlier material was probably secondary and got into the facias accidentally from neighbouring areas of the settlement (*e.g.* area U7), where a stratigraphic horizon contemporaneous with that material was recorded.

Summarising all that is described above, we may propose the following stratigraphic column.

Period A. A space without buildings, lying at the periphery of an earlier settlement. The bedrock (layer III) was covered by soil (layer II) in which material of the 4th century B.C. accumulated as refuse.

Event B. Construction of house U6 on the surface of layer II; this evidently took place not later than *c.* 320/310 B.C. (see Conclusion).

Period B1. Formation of facias IC_a as a result of alterations and the building of annexes: last decade of the 4th and beginning of the 3rd centuries B.C.

Period B2. Formation of facias IC_b: discarded material. The formation of these facias probably took place about the beginning of the 3rd century, but later than B1 – the period between the construction of the rooms in the inmost row and the destruction of the building.

Event C. Formation of horizons IB and IC due both to the total and catastrophic demolition of the building and to fire. On the basis of the finds, this event is dated to the first third or quarter of the 3rd century B.C. (most probably not later than 270 B.C.).

Period D. Formation of the present-day natural soil layer (of the southern chestnut 'chernozem' type) covered by the usual vegetation of steppe feather-grass and wild cereals. The development of this ecosystem has continued uninterrupted from the destruction of U6 down to our own time. Judging by the finds from horizon IA and the indications of stones having been dug out from the ancient masonry structures, this lonely spot was sporadically visited by man throughout the period between the 2nd century B.C. and the present.[14]

DETAILED DESCRIPTION

A. Rooms Located Around the Perimeter of the Courtyard

The room numbers and descriptions correspond to the sequence of their uncovering during the excavations. The following information is presented: the location – either in the first or outer range (*i.e.* the rooms all around the perimeter of the courtyard), or in the second or inner range (*i.e.* the rooms attached to the courtyard side of the outer range; connection (if any) to adjacent rooms; the inner dimensions of the rooms and their areas; the position and size of the doorways; the construction of thresholds and floors; details of structures found both upon the floor surface and in the floor layer, and the positions of these structures; the stratigraphy of the fills and description of the substrates; finds in the filling, on the floor, and beneath it; specific features; preliminary conclusions.

Room 1 (Pl. 17). Situated in the first row, this is the second room to the south-east of the eastern corner; length 4.10 m, width 3.0-3.1 m, area 12.5 sq m. It formed a single block together with *rooms 32-34* and was connected with *room 33* by a doorway about 1 m wide in the south-western wall. Another doorway 1.10 m wide in the western corner led to corridor *room 34*, which was built later and through which there was access into the courtyard.

The floor was of clay 10-12 cm thick. A low bench of clay was built against the north-eastern wall (length 2.20 m, width 1.10 m, height 0.30 m) (Pl. 17, *1-2*). It was plastered with a layer of dense light-coloured clay stucco 5-10 cm thick and had traces of limewash preserved on the lateral surface; its western corner ended in a horn-like projection of dense clay mixed with chopped straw. A second, poorly preserved, bench 0.55 m wide and 0.30 m high was built against the south-eastern wall of the room. In the middle of the room there was a round hearth (diameter 0.8 m) with a border of rounded limestone blocks (Pl. 17, *3*). Examination of the ashes revealed no vegetal remains.

No objects were discovered on the floor itself, but in the clay and loam fills (sub-horizon IC_1) were found twenty small body fragments of amphorae (mostly Chersonesean), two fragments of Sinopean flat tiles and one from the wall of a Sinopean pithos, a fragment of a Sinopean mortar, the shackle of a silver finger-ring 2.0 cm in diameter, and two fragmentary whetstones. Traces of fire were detected in the layer.

Beneath the floor a layer of buried topsoil (II) up to 30 cm thick was uncovered. In this layer small charcoal fragments of unidentifiable origin were found.

Room 2 (Pls. 17, *1* and 18, *1-2*). Situated in the eastern corner of the building in the first row, this room made up a single block with the subsequently added *room 35* in the second row; length 4.70 m, width 3.10-3.15 m, area about 14.7 sq m. A doorway connected it with *room 35*, though originally – before the construction of the latter room – it opened directly onto the courtyard. The width of the doorway with a carefully built stone threshold is 1.10 m. The stone doorpost socket was set on the south side, thus the door was a single one, not more than 0.8 m wide and opened outwards.

In the southern corner there was a rectangular hearth 42 × 72 cm sunk into the floor to a depth of 27 cm. Isolated grains of naked wheat (*Triticum sp. Triticum aestivo-compactum*) were found among the ashes from the hearth and scattered over the adjacent area.

The floor was of clay 10-12 cm thick. On its surface were found three body fragments of a Chersonesean amphora and a jug, a wall fragment of a black-glazed kantharos, five mussel-shells (*Mytilus*), and one scallop-shell (*Pecten*). In the clay-and-loam fills above the floor (sub-horizon IC_1) there were 119 small fragments of Chersonesean amphorae, jugs, and bowls; 6 fragments of Sinopean and 3 fragments of Herakleian amphorae; 10 body fragments of plain ware and 3 of black-glazed ware from unidentified centres; and 5 body fragments of handmade pots. There were also numerous fragments of charcoal from the burnt ceiling and the samples taken were hypothetically identified by G.N. Lisicyna as oak (*Quercus* sp.).

Beneath the floor there was a layer of buried topsoil (II) up to 25 cm thick. It was full of fine charcoal from unidentifiable species of trees and/or shrubs.

Room 3 (Pls. 18-19). A self-contained room in the first row on the north-eastern side of the building; length 4.75 m, width 3.10-3.12 m, area about 14.7 sq m. The entrance was in the middle of the south-western wall and opened directly onto the courtyard. In front of the entrance was a path paved with limestone slabs leading from the courtyard (Pl. 18, *1*).

The doorway was 1.10 m wide. Just outside it – to the right (or E-NE) as one enters – three bronze nails, each with a right-angled bend (**K 21-23**), were found lying on the floor; remains of burnt wood were preserved on one of the nails. In the threshold special cuts were found into which the wooden door-case was fixed. The form of the threshold, the position of the lower door-socket, and the nails indicate that the door (about 65 cm wide) opened outwards onto the courtyard and the door-frame was evidently fixed to the wall with long bronze nails.[15]

On the vertical surface of the socle of the south-western wall inside the room there were remains of clay stucco up to 5 cm thick with traces of limewash (Pl. 18, *4*); the total of the preserved plaster was about 0.5 sq m. The clay floor was 5-8 cm thick. In the northern corner were found the remains of the base of a rectangular mud-brick enclosure about 1 × 0.7 m; but apart from this there were no other structures on the surface of the floor.

The fill layer (horizon IC) preserved traces of a very fierce fire (Pls. 18, *2*, 19, *1*). Two stratigraphic horizons were identified, and within them several thin intercalations were also distinguished though rather less reliably. The upper sub-horizon (IC_1) indicative of intense combustion contained cracked and broken amphorae, both stamped and unstamped, that

were mostly of Chersonesean production and were scattered over the entire area of the room. The amphorae were strongly affected by exposure to high temperatures: more than half the fragments were fused and misshapen, and the surfaces of about half were actually fused to the point of vitrification, *i.e.* the temperature had exceeded 1200° C. Apparently the fire raged particularly fiercely in the northern part of the room, for here virtually all the amphora fragments were fused. On a number of larger fragments traces of black runnels of some burnt substance were noted, suggesting that a combustible organic liquid (oil?) had been stored in some of the amphorae.[16] In the southern corner, fragments of a small Sinopean pithos were uncovered (**Ac 3**); a number of fragments of the same pithos were found outside the room in the topsoil horizon IA and some of the fragments had sunk into sub-horizon IC_2. Among the fragments of one of the amphorae charred grains of naked wheat (*Triticum sp.*) were found (see Appendix IV). A bowl (**C 81**) filled with sheep's vertebrae had been standing beside the north-eastern wall (Pl. 19, *2-3*), but during the fire most of the sherds from the bowl, and the vertebrae too, settled into sub-horizon IC_2, right down to the level of the clay-plastered floor. Probably a large painted Chersonesean krater (**Ac 2**) stood in the same spot since half the fragments of such a vessel were found in the lower sub-horizon (IC_2) but above the floor surface.

At certain spots the upper (IC_1) and lower (IC_2) sub-horizons were divided from each other by an intercalation formed by the burnt remains of the wooden ceiling of the lower storey. Numerous lumps of clay stucco, on average 0.5-1 cm and occasionally up to 2-2.5 cm thick, were also encountered at this level: some of these showed traces of whitewash on one side and imprints of wood on the other. In various separate places were found nine pairs of iron nails with the charred remains of the wooden beams that they had originally fixed in place a piece of board, and numerous pieces of charcoal. Analysis of fifteen samples of charred wood carried out independently by G.N. Lisicyna (Institute of Archaeology AS USSR, Moscow) and E.S. Čavčavadze (Botanic Institute AS USSR, Leningrad) showed that nine of them belonged to oak (*Quercus* sp.), one to beech (*Fagus* sp.), and two to juniper (*Juniperus* sp.). In the case of twenty other small samples it was impossible to identify the original type of wood.

In the lower sub-horizon (IC_2), immediately above the floor, was a large accumulation of fragments of different ware (mostly amphorae) that had fallen from above during the fire, as well as the shattered remains of amphorae and other vessels that had been kept on (or somewhere above) the floor. Some of these vessels, and other objects too, were probably stored on shelves in the lower and (or) upper storey. It was possible to identify the individual positions of about ten fragmented amphorae which had been standing on the floor along the north-eastern wall. At least two of the amphorae (of Chersonesean production) had contained wheat (*cf.* Appendix IV). During the clearing of the north-eastern wall a bronze three-bladed arrowhead with solid tang was found stuck into the wall, having evidently been fired from outside (**K 82**).

The composition of the collection of (complete or relatively complete) ceramic vessels found in the fill and on the floor of *room 3* is presented in Table 1.

Most of the 29 amphorae were evidently stored on the upper storey (rather than on the ground floor); four fifths of them were manufactured in Chersonesos, and, judging by their profiled fragments, belonged to type IБ in S.Y. Monachov's classification.[17] The handles of seven amphorae bore the stamp of astynomos *Dioskouridas* (**Ae 35-39**, **Ae 45-46**);[18] on five handles there were monograms (**Ae 84-88**) which should most probably be interpreted as Ευα( ).[19] This group of amphorae were undoubtedly stored on the upper storey and probably made up a single consignment of ware. In addition, three other Chersonesean am-

Table 1. Composition of the collection of ceramic vessels (as complete shapes or equivalents of complete shapes) found within room 3.

	Centre/type of production					
Vessel type	**Chersonesos**	**Sinope**	**Amphorae with mushroom-shaped rims**	**Unknown centres ware**	**Local (handmade)**	**Total**
Pithos		1				1
Amphorae	29 (incl. 15 stamped)	2	3	2		36
Painted krater	1					1
Jugs	3					3
Bowls	1					1
Fish-plate				1 (in grey ware)		1
Handmade ware					2 (1 decorated)	2
Total	**34**	**3**	**3**	**3**	**2**	**45**

phorae bore the stamps of the astynomoi *Kraton* (**Ae 58**), *Sopolis* (**Ae 73**), and *Apollas* son of *Choreios* (**Ae 2**). The first two names, according to V.I. Kac, belong to astynomoi of group 1A and the third to an astynomos of group 2.[20] The three amphorae with these stamps must all have stood on the floor of the lower storey. Here also were found the fragmentary remains of five unstamped amphorae from unidentified centres including three of the same type with mushroom-shaped rims (**Ab 80**),[21] one of a previously unknown Mediterranean type, and one with a rare 'beaker-shaped' (Russ. '*ryumkoobraznaya*') foot, its shape most closely resembling that of amphorae from Mende (or some other North-Aegean centre?).[22] As nothing more than the foot and body fragments of the latter piece have been preserved, probably only its lower part had been retained for some special, secondary use within the room where it was found. Fragments of Sinopean amphorae were found only in the upper horizon of the fill; these vessels had evidently been kept on the upper storey together with the consignment of 12 Chersonesean amphorae.

Eleven of the fragments of amphora necks and shoulders bore graffiti and dipinti.[23] The graffiti on the Chersonesean amphorae were the following: 3 examples (**H 5**, **H 8-9**) of A and AΠ in ligature (one on the neck of the amphora with the stamp of *Sopolis*); 1 example of the monogram AΠH (**H 7**); 2 examples (**H 20-21**) of the monogram HPA and HPAK (*eta* and *rho* in ligature) (the first of these accompanied by the stamp of the astynomos *Dioskouridas*); and 1 of the mark CI (**H 41**). Of the dipinti in red paint there was one example each of ΘA (**H 68**)and EYΦ (**H 64**), and one that was unclear. On the neck of a Sino-

pean amphora was scratched the graffito ΘΑ (**H 23**) and on the neck of the Mediterranean amphora from an unknown centre (mentioned above) there was the dipinto A in red with an apostrophe to the right (**H 74**).

Along with the amphorae originally kept on the upper storey there was evidently a unique painted krater of Chersonesean manufacture (**Ac 2**) as well as a bowl, probably also Chersonesean, in which 134 knucklebones were once kept (sheep's and cows' vertebrae) (Pl. 19,*3*). The sides of some of these astragali were ground, and some had a hole drilled through them; one bore the graffito Λ (**H 27**). Close by, were found some fragments of a large hand-made pot of the Kizil-Koba culture (**D 104**)[24] with combed ornament.

In addition to the amphorae and other pottery described above, various tools and implements were also kept in the lower storey of *room 3*. All were found lying on the surface of the floor, and among the finds were the following: 3 iron sickles (**K 141-143**); the remains of the handle and part of the iron blade of a garden or vine-dresser's knife; the hollow iron point of some kind of picket; half of a pair of iron scissors (?); a five-pronged fork-like iron tool with a long shaft (?) (**K 178**);[25] an implement shaped like a long iron rod (a picket for planting?) (**K 189**); and small fragments of certain other iron implements. Also found lying on the floor were two bone spools for thread made from bulls' vertebrae ground smooth (one of them bearing the graffito Π (**H 29**)), together with a few round stone stoppers (?) and some square objects, possibly weights.

The surface of the buried soil that overlay the bedrock was plastered over to form the floor of the room. The soil layer itself was 37-45 cm thick and contained very fine pieces of charcoal.

All the facts before us suggest that both the lower and upper storeys of this room were used as storerooms.

Room 4 (Pl. 20, *1*) A self-contained room situated in the outer range on the north-eastern side of the building; length 5.2 m, width 3.10-3.15 m, area about 16.0-16.4 sq m. The original entrance was located almost in the middle of the south-western wall and gave onto the courtyard. The doorway was 0.60 m wide; later it was blocked up with stones and the entrance was transferred to the western corner of the room. The width of the new doorway was again 0.60 m. The floor 8-10 cm thick contained of two intercalations: the lower one of clay stucco, the upper of earth with a high content of humus and phosphates.[26] In the northern corner was a rectangular 'enclosure' built of upright limestone slabs 15 cm thick along the north-eastern wall and divided in two by a transverse wall. Overall dimensions: length 2.9 m, width 1.0 m, height 0.45-0.50 m. Originally, the enclosure comprised only a single compartment (1.85 × 1.00 m), and was bordered by a rectangular pavement (1.05 × 0.85 m) of limestone pebbles from the shore. After the construction of the second compartment the pavement was covered over with an earthen floor.

To the right of the original doorway near the south-western wall, three stone steps of the first flight of the staircase leading to the upper floor were preserved. In the steps, traces of the fixings for the second, wooden, flight of the staircase and the door closing off the staircase were also preserved. Leaning against the wall close to the first stone step was a broken-off piece of a flat Sinopean tile bearing the stamp of the astynomos *Diophantos* and the device of an 'eagle on a dolphin' (group I in Grakov's classification) (**Ab 2**). This tile fragment was evidently part of the original structure of the staircase.

With the exception of a number of small pottery fragments no finds were made either in the clay and loam fill or on the floor. The list of the fragments is presented in Table 2. Beneath the floor was a layer of buried soil 0.40-0.45 m thick overlying the bedrock.

The room was probably used as a byre for small cattle. This is suggested not only by the presence of the low stone enclosure in the corner (a feeding-pen?) and the humus-containing

Table 2. Distribution of the pottery fragments found in room 4 according to types and production centres.

	The centre/type of production					
Vessel type	**Chersonesos**	**Sinope**	**Herakleia**	**Unknown centres**	**Local (handmade) ware**	**Total**
Flat tiles		5 (from a single specimen)				5
Amphorae	57	2	2	2		63
Commonware:						
Jugs	5			1		6
Bowls	2					2
Black-glazed pottery				1		1
Handmade ware					13	13
Total	**64**	**7**	**2**	**4**	**13**	**90**

earthen floor with its high concentration of phosphates but also by the absence of finds in the room. Possibly the staircase with its door that fastened on the outside led to the store-room above *room 3*. However, this hypothesis can hardly be proved now.

Room 5 (Pl. 20, *1*). A self-contained room situated in the outer range of the north-eastern side; length 7.50, width 3.0-3.1 m, area 22.5-23.0 sq m. The entrance, with a door that fastened from the outside was situated in the middle of the south-western wall and gave onto the courtyard. The width of the doorway was 0.65 m. The earthen floor was 10 cm thick.

To the right of the doorway at a distance of 0.65-0.70 m from the south-western wall and parallel to it, was a two-course stone socle 2.8 m long, 0.53-0.55 m wide, and 0.35-0.57 m high. It was topped by a pylon 0.64 × 0.35 m and 0.75 m high. The top surface of the stone socle was levelled off to provide a base for a wall of mud-bricks. In the space between this internal wall and the south-western wall a number of charred pieces of oak beams and boards (*Quercus sp.*) were uncovered. Their position indicates that there was probably once a narrow wooden staircase here leading up to the first floor.

Near the north-eastern wall, 2.20 m from the northern corner, the debris of a large hearth was discovered; its dimensions were 1.10 × 1.20 m. At the base the perimeter was faced with stones and fragments of flat Sinopean tiles mortared with clay.

In the clay and loam fill and on the floor the only artefacts found were small body fragments of amphorae and jugs, mostly of Chersonesean manufacture. Beneath the floor was a layer of buried soil 0.30-0.40 m thick lying on the uneven surface of the bedrock.

Room 6. A self-contained room located in the outer range on the north-eastern side of the

building; length 5.20, width 3.15 m, area 16.38 sq m. The entrance from the courtyard was near the southern corner; the doorway was 1.05 m wide. The clay floor was 10-18 cm thick and in its western part had two micro-horizons. Near the remains of the north-western partition wall of mud-brick, and beneath its base on the clay-plastered floor, was an area of burnt surface with an accumulation of ashes nearby – the remains of a hearth belonging to the first building period (?). Traces of fire were clearly visible.

In the clay and loam fill and on the floor the only objects found were some small body fragments of amphorae and jugs mostly of Chersonesean manufacture, and a fragment of a black-glazed kantharos. Beneath the floor was a layer of buried soil 18 cm thick lying on the flat surface of the bedrock.

The base of the north-western wall of the room stood on the surface of the lower horizon of the clay floor. In part this wall covered the spot occupied by the supposed former hearth, suggesting that at some stage the northern corner was the subject of replanning and alterations.

Room 7 (Pl. 20, *2*). This room occupied the northern corner of the first row on the north-western side of the building and made up a single block with *room 15*; length 11.05 m, width 3.0 m, area 34.5 sq m. It could be entered from the courtyard via *room 15*, which was built later. The main entrance was located in the middle of the south-eastern wall, and the actual doorway was 1.00-1.05 m wide. The floor was of clay 5-10 cm thick.

To the left of the doorway as one entered and close beside the south-eastern wall were found the remains of a large rectangular oven (80-83 × 95-98 cm) made of mud-bricks each about 20-21 × 40-41/42 × 8.5-9 cm. The clay hearth, raised 15 cm above the floor level, was thoroughly fired to the depth of 0.4 m, and the surfaces of fragments of flat bricks were also very well fired. These facts probably indicate that the oven had a manufacturing rather than a domestic function.

In the southern corner of the room there was an accumulation of different materials. Right in the corner itself was a pile of grog derived from finely crushed amphora sherds (mostly Chersonesean) and other pottery fragments (Pl. 20, *3*). The volume of this pile amounted to 1500-2000 cub cm; upon and around it were the fragments of four handmade pots (**D 12**, **D 34**, **D 91**, **D 99**) decorated with fingernail ornaments round the rim and containing an admixture of grog in the ceramic paste. Judging by the position of the fragments the direction in which they had fallen and the way in which they were dispersed – probably all originally stood on a shelf fixed on the south-western wall above the place where the pile was found. Lying near the pile of grog there were two rather small slabs of dense dark-red sandstone; the lower bodies of one Chersonesean and one Sinopean amphora (the foot of the latter had been broken off sometime in antiquity); fragments of amphora walls; and a discoid ceramic net-weight of Chersonesean manufacture (**M 20**). It is possible that the accumulation of pottery on the floor in the southern part of the room, which included 64 rather large body fragments of different amphorae and jugs mostly of Chersonesean manufacture, was the raw material of the grog heaped in the corner and intended for handmade pots. This is suggested both by the fragments, belonging to a number of different vessels and by the indications that they had already been broken before the destruction of the building.

In the clay and loam fill, an intercalation of burnt material was distinguished, which suggested the existence of an upper floor. In this intercalation, 35 cm above the floor level, the remains of a stone structure were uncovered; this had probably fallen down from the first floor above. The remains comprised three carefully dressed rectangular limestone blocks 55 × 40 × 11-12 cm and a number of specially cut slabs; they were located 5.5-7.0 m from the south-eastern wall, which faced the courtyard. The position of the flagstones suggested that originally they stood upright, so possibly they were the remains of a rectangular household

'enclosure' (or bin). The fill layer contained numerous tiny fragments of various potteries.

In the fill and on the floor were found several different types of shell: twelve examples of the vineyard snail (*Helix*); and seven examples of marine molluscs, namely: 4 mussels (*Mytilus*); 1 oyster (*Ostrea*); 1 scallop (*Pecten*); and 1 cockle (*Cardium*).

Beneath the floor there was a layer of buried soil 20-22 cm thick lying on the flat surface of the bedrock. In this layer tiny pieces of charcoal were encountered.

The stone socle of the south-eastern wall stretching towards the inner courtyard preserved traces of one or two alterations. A doorway 1.10 m wide blocked up with small stones was uncovered at a distance of 2.70 m from the southern corner of the room. Traces of alterations were also discernible in the northern part of the room where the original transverse wall had been dismantled. These alterations suggest that *room 7* acquired its final appearance only in the final period of the building's occupation. The room was extended by taking in parts of the previously adjoining rooms on the lower storey in the northern corner lying immediately to the south-west of the original *room 7*. As mentioned above, the artefacts discovered here suggest that before the destruction of the building this room was probably given over to some production process(es). It is fairly likely that handmade ware was manufactured here.

Room 8 (Pls. 14 and 20, *2*). A self-contained room situated in the outer range on the north-western side; length 3.65 m, width 3.15 m, area about 11.5 sq m. The entrance from the courtyard was in the eastern corner, the width of the doorway being 1.10 m; no threshold. The clay-plastered floor was 10 cm thick.

In the centre of the room the site of a square hearth-place 0.55 × 0.55 m was discernible. Near the western corner of the hearth there was a small pear-shaped pit cut in the rock. This was 0.6 m deep, the diameter of the mouth being 0.34 m and the maximum diameter near the bottom 0.5 m; over time it had gradually filled up with a natural accumulation of soil. In the southern corner a rectangular depression in the floor measuring 0.53 × *c.* 0.75-0.8 m had been sunk down as far as the underlying rock, to a depth of 15 cm.

In the clay-and-loam fill tiny fragments of amphorae and jugs, mostly of Chersonesean manufacture, predominated. In addition, three small fragments of black-glazed kantharoi (**B 33**, **B 35**, **B 54**) and one of a fish-plate (**B 235**) were found. Twelve isolated fragments of a Chersonesean amphora were scattered about the floor.

Beneath the floor was a layer of buried soil 10-25 cm thick lying on the uneven surface of the bedrock. In this layer tiny pieces of charcoal formed of wood and bush plants were encountered.

The presence of the central hearth suggests that this may have been used as a living-room.

Room 9 (Pls. 14 and 20, *2*). A self-contained room situated in the first row on the north-western side of the building; length 3.75 m, width 3.15 m, area 11.8 sq m. The entrance from the courtyard was in the eastern corner. The doorway was 1.03 m wide with a threshold made of two flagstones. The clay floor was 10 cm thick.

In the centre there was a hearth in the form of a rectangular platform 0.50 × 0.60 m raised 8 cm above the floor. On each side the hearth was bordered by semi-cylindrical clay bricks 30 cm long, 9 cm wide and about 3-5 cm high.

In the clay-and-loam fill it was mostly small wall fragments of Herakleian and Chersonesean amphorae and other vessels that were encountered. One fragment from the neck of a Herakleian amphora bore the remains of an engraved stamp (**Ae 126**; two letters were preserved: – –]EO). Parts of a broken Chersonesean amphora (**Ad 39**, **Ad 42**), three fragmented

handmade pots (**D 31**, **D 73**, **D 105**), and a whetstone were found lying on the floor. A tiny fragment of the wall of an Attic red-figured kylix bearing a representation of a bearded satyr (**B 1**) was plastered into the clay fabric of the floor, along with other small body fragments of clay vessels.

Beneath the floor there was a layer of buried soil 15-20 cm thick lying on the uneven surface of the bedrock. Tiny pieces of charcoal were encountered in this layer, along with small fragments of walls and rims of Herakleian amphorae.

The presence of a hearth in the centre of the room suggests that it was a living-room.

Room 10 (Pls. 14 and 20, *2*). A self-contained room situated in the outer range on the north-western side of the building; length 3.80 m, width 3.15 m, area 11.97 sq m. The entrance from the courtyard was in the eastern corner. The doorway was 1.12 m wide and had a high, double-step stone threshold. The clay floor was 10-12 cm thick.

In the centre were traces of a hearth-place 50-55 cm in cross-section. In the western corner there was a rectangular household 'enclosure' in the form of a bin. Its long side was built of limestone slabs set upright, while the short side was made of clay. The inner dimensions of the bin were 1.40 × 0.86-0.90 m; the height was 42 cm, and the volume about 0.5 cub m.

In the clay-and-loam fill were found wall fragments (mostly small) of Herakleian, Sinopean, and Chersonesean amphorae and other ware. Fragments of a stone (limestone) louterion were scattered over the floor. Near the entrance was a three-bladed bronze arrowhead with its point towards the entrance (**K 85**).

Beneath the floor there was a layer of buried soil 15-18 cm thick lying on the uneven surface of the bedrock. A fragment of a small discoid stone weight was found in the upper part of this layer, along with some small wall fragments of Herakleian amphorae.

The presence of a hearth suggests this room may have been a living-room; less probably, it was intended for some other domestic purpose.

Room 11 (Pls. 14 and 20, *2*). A self-contained room situated in the outer range on the north-western side of the building; length 3.60-3.65 m, width 3.15 m, area 11.4 sq m. The entrance from the courtyard was in the eastern corner, and in front of it lay a small area of stone pavement. The doorway was 1.05 m wide with a threshold constructed from two flagstones. The clay floor was 10-12 cm thick.

In the centre, a hearth-place in the form of irregular rectangle about 50 × 60 cm was identified. The traces that remain indicate either the use of a portable hearth (*i.e.* a brazier) or a fire kindled directly on the floor.

In the clay-and-loam fill, small wall fragments of Herakleian, Sinopean, and Chersonesean amphorae and other pottery predominated. Here also, fragments of the bottom and edge of a stone louterion (the same vessel that was uncovered in the neighbouring *room 10*) were found above the floor level. Near the entrance, a piece of the cutting edge of an iron sickle was found lying on the floor surface (**K 6**).

The room was possibly used as living-quarters.

Room 12 (Pls. 21-22). An originally self-contained room occupying the western corner of the building in the outer range and subsequently made into a two-room block with *room 14*, which was constructed later; length 4.30 m, width 3.15 m, area 13.55 sq m. The entrance was in the eastern corner. The doorway was 1.10 m wide with a well-made threshold consisting of a single stone block. Immediately inside the doorway one flagstone step led down into the ground-floor room. The structure suggests that the door must have opened inwards. Before the construction of *room 14* the doorway of *room 12* gave directly onto the western

corner of the courtyard, with a narrow stone-paved path leading to it (see the description of *room 14* below).

Room 12 is distinguished from all the other rooms by three major features: the stratigraphy of the fill, the composition of the finds, and the type of building construction. Its mud-brick walls were built on high stone socles 1.00-1.10 m high and 0.55-0.65 m thick; these socles were carefully constructed of well-cut and closely fitting blocks laid in single- or double-layered bed masonry (Russ. '*postelistaya*' masonry) on a clayey mortar. The top surfaces of the socles were carefully levelled to provide a sound base for the construction of the mud-brick walls.

The floor of the room was of earth, and in contrast to the other rooms showed no traces of renovation or any later levelling or stuccoing with clay. Indeed the floor was lowered relative to the levels of the courtyard and other rooms in the building, so that the densely rammed earth of its surface lay 0.45 m below the threshold.

On the surface of the floor and embedded in it the following installations were identified:

1) Standing along side the north-western wall, 0.25-0.35 m from the latter and 1.1 m from the northern corner of the room, there was a large stone vessel of oval plan (90 × 46 cm and 26 cm deep) cut from Sarmatian limestone (**L 29**) (Pls. 21, *3-4*, 22, *1*). A limestone weight for a press lever was lying nearby (**L 30**). 2) A small pit about 40 cm in diameter and about 10 cm deep was dug in the floor in the northern corner. It was filled with ashes and the burnt and finely crushed bones of birds (unidentifiable). 3) At the mid-point of the north-eastern wall, near its base, was another semicircular, pit 30-40 cm in diameter and about 10 cm deep. At the bottom there was a pile of thirty marine mollusc shells (*Cardium* and *Pecten*), five of the cockle shells (*Cardium*) were drilled through at the apex, and the pile was 'roofed' by a large shell from a Black Sea mussel (*Mytilus galloprovincialis*). 4) At the very centre of the south-eastern wall, and 47 cm from it, stood a small square block of Sarmatian limestone 32.5 × 18-20 × 12 cm (Pl. 22, *1-2*). The top surface of the block and its three visible sides were smoothly cut; the rear was by contrast rather roughly cut. The position of the block and the character of the objects found around it suggest that it was probably an altar similar to that installed in the neighbouring *room 14* (see below and also **G 3**). Slightly dug into the floor in an upright position in the very centre of the room there was a Herakleian point-bottomed amphora (**Ad 78**); its rim and handles had been broken off sometime in antiquity and the rest of it was subsequently smashed by the central hearth falling down from the floor above (see further below).

In the course of layer-by-layer removal of the fill inside the room four horizons of the cultural layer were identified. Horizon IA represented a topsoil clay-and-loam layer with a high content of ash and small pieces of charcoal. In this layer were found eleven large, and numerous small, fragments of Sinopean tiles (both flat ones and kalipteroi), along with wall fragments of amphorae from various centres. On one of the fragments – a small splinter of the neck of a Herakleian amphora – the remains of an engraved stamp, **Ae 123**,[27] were detected. Here also, parts of a broken Chersonesean amphora with an unreadable stamp on the neck were uncovered (**Ae 82**, **Ad 38**); the remaining fragments of this amphora were found in the lower sub-horizons IC_1 and IC_{1bis}. Other items found in horizon IA were 38 fragments of the upper body of a large two-handled red-ware pot or flat-bottomed amphora (**C 3**), possibly of Chersonesean manufacture, and a fragment of a flat flask.

At the level of contact between horizons IA and IC_1 numerous small fragments of surface-burnt clay stucco from the walls, or, more probably, the ceiling were uncovered all over the room. In some places these fragments had formed accumulations, inside which were found very badly oxidised iron nails or their fragments. At this level too, fragments of Sinopean tiles were also found.

The lower-lying clay-and-loam horizon IC preserved traces of a very fierce fire. The upper sub-horizon IC_1, which was rich in ash, also contained the widely dispersed fragments of four point-bottomed amphorae that had been broken, shattered, or cracked by the fire: two of them were Chersonesean (**Ad 6**, **Ad 26**) and two were from unidentified Mediterranean centres (**Ad 87**, **Ad 90**). Parts of the same vessels were found at a lower level in the adjoining sub-horizon IC_{1bis}, though a number of their fragments had actually sunk into sub-horizon IC_2 and even down to the level of the floor. In certain places sub-horizon IC_{1bis} was separated from horizon IC_1 by accumulations of clay stucco debris from the walls or ceiling. Some fragments of the plaster preserved traces of limewash. Within the described horizon, and just above its contact with the lower one, the debris of a large circular fireplace and its clay-plastered hearth, which had fallen from the floor above, was uncovered in the centre of the room (Pl. 21, *1-2*). The fireplace was bordered by large sea-rounded stones, and, judging by the segments preserved *in situ*, its diameter can be defined as approximately 1.0-1.5 m. Lying inside the debris of the fireplace and at its edges were the broken remains of a large crushed two-handled pot (**C 122**), a handmade decorated pot (**D 2**), and several jugs of Chersonesean manufacture (**C 9**, **C 14**), along with amphora fragments and wall fragments of other vessels. A number of further fragments from these vessels were also found in the lower sub-horizon IC_2. In addition to the pottery, some fragments of small silver attachment plates, possibly from a wooden casket (**K 186-187**), five complete and fragmentary bronze buckles (**K 88-91**), a few whetstones, and a fragment of the blade of an iron knife were found in and around the breakdown of the hearth, at different levels in the horizon.

The lower sub-horizon IC_2, which lay immediately above the floor, was composed of a loamy and ashy mass showing traces of a fierce fire. At the contact level between sub-horizons IC_{1bis} and IC_2, thin intercalations of burnt clay plaster were also detected; however, the plaster showed no traces of whitewashing.

Within sub-horizon IC_2, beneath the fireplace described above and partly among the fragments of its hearth, as well as above the floor surface and on the floor itself, there were a great number of broken and fragmented objects, including some of a very specific character. The following paragraphs present a description of the materials dispersed throughout the area.

Lying in the eastern corner, on and beside the threshold, were some iron parts from a lock (**K 179-180**).[28] On the floor nearby were scattered the fragments of a handmade pot and a miniature flat-bottomed Sinopean vessel with a vertical handle (**C 26**).[29] Lying together with these objects there was a lamp made from the 'salt-cellar' of a fish-plate with the graffito ΠΡΩ on its bottom (**B 232**, **E 11**, **H 31**).

Alongside the north-eastern wall, at the very bottom of sub-horizon IC_2, *i.e.* just above the floor surface, was the fragmented upper half of a Chersonesean amphora; it bore the graffito ΔΟ on its shoulder (**Ad 33**, **H 36**) and was lying with its neck towards the entrance; some oily liquid must have flowed out of it and caught fire.[30] Among the amphora fragments there was a shattered one-handled flat-bottomed jug of Chersonesean manufacture (**C 9**). Judging by the context, the jug and the amphora must have fallen from one of the floors above. They had perhaps originally been among the items found in sub-horizon IC_{1bis}.

In the northern corner, in a small area (about 0.3 m wide and 1 m long) between a large stone vessel standing on the floor and the north-western wall, and partly inside the vessel itself, were found the following: 1) fragments of a deep cup-skyphos with the graffito ΙΕΡΑ ΣΑΒΑΖΙΟΥ (**B 98**, **H 2**); 2) a salt-cellar broken into two pieces with the graffito ΘΕΥ on the bottom (**B 129**, **H 25**); 3-4) fragments of four handmade pots (**D 23-24**, **D 74**, **D 79**). Also found at this spot were: 5-6) two cylindrical pendants of coloured glass with a double representation of bearded face (**G 18**, **G 19**, **N 14-15**) and an amphora-shaped glass pendant (**N 9**).

Fragments of a miniature handmade ceramic altar (**D 130**, **G 11**), some fragmentary ter-

Table 3. Distribution of tiles and pottery according to types and horizons in the layer (as complete units or equivalents of complete shapes).

Category of finds	Horizons: IA and IC_1	Horizons: IC_{1bis}	Horizons: IC_2 and the surface of the floor	Catalogue Numbers
Tiles (Sinopean)	11	17 (small)		**Aa 1-9, Aa 12-14**
Amphorae	5	2	1	**Ad 6, Ad 24, Ad 26, Ad 33, Ad 38, Ad 78, Ad 87, Ad 90**
Commonware		6	6	**C 3, C 9, C 11, C 14, C 26, C 44, C 93, C 122, C 128, C 134, C 145, C 174**
Black-glazed pottery			10	**B 10, B 18, B 28, B 66, B 89, B 98, B 129, B 145, B 146, B 188**
Ditto with graffiti			3	**B 98, B 129, B 146, H 4, H 25**
Handmade pottery		1	3	**D 2, D 74, D 79, D 130**
Total of the pottery (excluding tiles)	***5***	**9**	**23**	**37**

racotta figurines and protomes (**F 1-6**),[31] a terracotta representation of an apple (**F 7**), a ceramic phiale of an 'Achaemenid' type (**B 145**, **G 16**), and a few fragments of plain, wheel-made closed ware (one lekythos and two jugs), were collected in front of and beside the suggested stone altar in the central part of the room. Fragments of a black-glazed one-handler with the graffito A on its bottom (**B 146**, **H 4**) were scattered in the very centre of the room. The distribution pattern of the fragments clearly suggests that the one-handler fell down (or was dropped) from a height in the northern corner of the room. The same may be supposed of the fragments of another small, handmade pot, some of which were uncovered in the northern corner. The other finds enumerated here were probably connected with the stone altar, *i.e.* with the central and south-eastern parts of the room.

In addition to the finds described above, mention must also be made of an iron machaira (**K 174**) found beside the stone vessel; the blade was very ragged and even doubled over on itself – such damage as might have occurred only if the sword had been used to cut something very hard.[32]

A badly calcined marble plate was found on the floor in the western corner; and scattered over the floor surface nearby were the burnt or calcined and iridescent remains of a thin-walled cup of 'Achaemenid' type made of transparent glass (**N 16**), shattered into the

Table 4. Distribution of finds connected with cultic practice according to types and horizons of the layer.

Category of finds	Horizons		
	IA and IC_1	IC_{1bis} (beneath the debris of fireplace and at the contact with IC_2	IC_2 and the surface of the floor
Stone altar (?)			1 (on the floor)
Portable ceramic altars			2 (on the floor)
Terracotta figurines and protomes; representation of apple	2		5 (in the horizon and on the floor)
Black-glazed cup-scyphos with a dedication to Sabazios			1 (in the horizon and on the floor)
Phialai (ceramics, glass)			2 (on the floor)
Glass pendants with faces			2 (in the horizon)
Shells of *Cardium* and *Pecten*			30 (in a special pit in the floor)

finest fragments. A small portable ceramic altar-*eschara* (**G 7**) of Chersonesean manufacture was lying on the floor near the south-western wall (Pl. 22, *3*), and a Chersonesean copper coin (**I 1**) was found nearby.

In the southern corner, sub-horizon IC_2 contained further fragments of the pottery found in larger quantities in the upper sub-horizon IC_{1bis}.

Thus four horizons (or faciae), containing varying types and quantities of items, were actually identified in the fill of *room 12*. As regards the ceramic materials they may be provisionally divided into four categories: 1) roof tiles – both flat ones and kalipteroi; 2) ceramic containers (both point-bottomed and flat-bottomed amphorae and large earthen pots); 3) household and culinary wheel-made and handmade ware; 4) black-glazed ware. The stratigraphic distribution of these finds is presented in Table 3.

The above table illustrates the following points. The tile fragments were concentrated mostly in the uppermost part of the fill (layers IA and IC_1). The majority of the point-bottomed amphorae were found in sub-horizons IC_1 and IC_{1bis}. It was mostly ware destined for household purposes that was connected with sub-horizon IC_{1bis}, in which the remains of a circular hearth were also uncovered in the centre of the room. The lower sub-horizon IC_2 and the surface of the floor provided all the finds of black-glazed ware (including all the graffiti found here) and some other types of pottery. However, the most distinctive feature of this sub-horizon (IC_2) and the floor surface immediately below it was that they yielded objects that were undoubtedly related to cultic practice. The distribution of these objects is shown summarily in Table 4 above.[33]

A comparison of the stratigraphic and typological distribution of the finds presented in Tables 3 and 4 have enabled us to formulate the following hypotheses:

1. *Room 12* evidently had three (maybe even four) storeys or 'tiers'. In other words, there was probably a rectangular tower at the western corner.
2. The recorded fragments of Sinopean tiles (both flat ones and kalipteroi) suggest that the roof of the putative tower was probably tiled. This proposition, however, is by no means certain, and the tiles may have been used for other constructional purposes.
3. Judging by all the signs, the ground floor (or 'lowest tier') must have accommodated a sanctuary evidently dedicated to Demeter and Sabazios. A detailed discussion, proposed explanation, and reconstruction are presented below.
4. The second storey; or 'tier', with a large circular fireplace in the middle of the room, was probably intended for some household purpose. However, it cannot be ruled out that this room was in some way connected with the one below it *i.e.* the sanctuary.
5. On the third (and, possibly, the fourth) storey or 'tier', amphorae were stored. However, the storeroom(s) here not only differed from the designated amphorae stores in *rooms 3* and *13* in the extremely varied composition and relatively small quantity of their contents, but also presented a distinct contrast to the debris of fallen amphorae in the north-western part of the courtyard.[34]

Room 14 (Pls. 25-26). A 'corridor' room situated in the western corner of the courtyard in the inner range, between *rooms 11-13* and *16*.

Inside the room three stratigraphic horizons were identified, connected with three separate building phases and the corresponding alterations of plan.

1. Stratigraphic horizon IA and *room 14a*: the topsoil, ash-containing layer (*i.e.* the uppermost soil layer); thickness 0.25-0.30 m.

At the contact between horizon IA and the underlying sub-horizon IC_1 were found stone socles of the walls of *rooms 11*, *12,* and *13* (belonging to the first row), and also the socles of the northern and eastern walls of *room 14a*. This room constituted the last phase on the spot in question and was of trapezoid plan with sides measuring 2.28 × 1.25 × 2.05 m (from the western corner clockwise) and an area of 4 sq m. The creation of *room 14a* was the result of constructing a connecting wall across the gap between the earlier northern wall of the previously existing *room 14* and the wall of *room 13* (Pl. 26). The remains of this connecting wall are represented by a socle 0.35-0.37 m thick, carelessly constructed in the form of a single row of flat stones that had quite evidently been appropriated for reuse from breakdowns of the nearby walls. Throughout the entire length the foundation of this latest wall was laid on the surface of the underlying sub-horizon IC_1 (the layer containing traces of the fire and the debris of part of the mud-brick walls). It was not possible to determine the position of the entrance to *room 14a*. The floor was of earth and a number of wall fragments of amphorae and handmade ware were found lying on its surface. Along the northern wall stretched a household 'enclosure' 75-80 cm wide; it was separated from the rest of the room by a low partition built of flat, unworked stones set upright. The earthen floor of the 'enclosure' was 5-8 cm lower than the floor level of the main part of the room. The fill consisted of ashes, and in the southern corner stood the lower body of a Chersonesean amphora (**Ad 28**).

2. Stratigraphic sub-horizon IC_1 and *room 14*: a loam-and-clay layer with traces of fire filled *room 14* down to the surface of the floor.

The room was of almost rhomboid plan, 2.35-2.85 × 2.67-3.20 m, area 7.87 sq m. Its irregular plan resulted from the orientation both of the north-western wall of *room 16* (in the second row) and of the subsequently added northern wall, which separated the room from

the courtyard (Pl. 12). In the eastern corner was a very narrow entrance (about 50 cm), and in the western corner a doorway leading to *room 12* (see above).

The clay-plastered floor was up to 10 cm thick. Running diagonally across the room, between the entrance from the courtyard and the entrance to *room 12*, there was a path paved with flagstones, in the original construction of which fragments of amphorae and Sinopean flat tiles were used for filling the intersticies (Pl. 26). On one of the tile fragments the stamp of astynomos *Histiaios,* with its 'eagle on a dolphin' device[35] (**Ab 5**) was partly preserved.

Near the south-western wall, and at a distance of 85 cm from the entrance to *room 12* was installed a stone altar (**G 3**) (Pl. 25). The scattered fragments of a ritual vessel with a red dip-into in the form of a retrograde monogram, HP (**H 1**, **G 14**), were uncovered *in situ* upon the altar and around it; and lying face downwards on the floor beside the altar was a flat limestone relief bearing a representation of Herakles (**G 1**). In the southern corner, both on the floor surface and in the thickness of the layer, there were fragments of the upper body of a Solokha-I type amphora with a mushroom-shaped rim (**Ad 81**) (Pl. 25, *1*); fragments of its lower body were found in the upper layer of the amphorae store in *room 13* (see below).[36] The position of this neck of the amphora suggests that its remains actually fell down here from the storeroom above *room 13* during the fire. For descriptions of other finds from the layer on the floor (probably not originally related to *room 14*) see **K 120**, **M 5**.

3. Beneath the floor and the stone pavement there was a thin (no greater than 10 cm) intercalation of fine limestone particles containing minute splinters of the walls of amphorae and jugs (facia IC_a) and covering the buried-soil layer 15-20 cm thick that lay on the uneven surface of the bedrock below. The soil layer itself contained fine pieces of charcoal and small fragments of the walls and rims of Herakleian amphorae.

Thus the following sequence of phases in this particular part of the building may be conjectured.

Phase 1. A limestone altar dedicated to Herakles (**G 3**) was installed on the bare earth in the western corner of the courtyard beside the entrance to *room 12* and in front of the sanctuary of Demeter and Sabazios. It is quite probable that at the same time a relief representing Herakles was fixed on the wall above the altar. Some time later a paved path was laid to the entrance to *room 12*. This path, about 1 m wide and about 2.2 m long, was oriented on a diagonal running from the centre of the courtyard towards the entrance of *room 12* at an angle of 45°. The relative positions of the path, the base of the altar, and the threshold of the entrance to *room 12,* as well as their respective stratigraphies, make it a fairly probable supposition that the altar was installed either at the same time as the rooms of the first (outer) row were constructed or shortly after the building had been completed.

Phase 2. After *room 16* (in the second row) had been added at the south-western side of the courtyard and the wall forming that rooms north-west side had been constructed, the corner with the altar remained for some time enclosed on three sides but open towards the north-east – *i.e.* onto the courtyard. Later, after the construction of a further wall 4-5 m to the north of the altar, the corner became completely separate from the courtyard and thus formed *room 14*. This sequence of construction is suggested by the following facts. The orientation of the south-eastern wall of *room 14,* which separated the latter from *room 16,* corresponds with the direction of the paved path and is connected with it stratigraphically; moreover the stone socle is very carefully laid in the two-layered bed technique ('*postelistaya'* masonry). By contrast, the foundation of the northern wall is higher than the flagstones of the path, and the

socle is built in a rather different manner: *i.e.* more carelessly, from undressed stones of different sizes and using slightly perfunctorily worked orthostates for the base.

In this way, then, the formation of the sanctuary of Herakles as a separate room was evidently completed.

Phase 3. After the destruction of the house, a small *room* (?) *14a* was built on the levelled surface of the collapsed debris of mud-brick walls that had filled the previously existing *room 14* (horizon IC). This latest room was formed by a connecting wall carelessly constructed across the gap between the remains of *room 14*'s earlier south-west and north walls. Both the purpose and the period of existence of this room are unclear. However, the fact that it was located directly above the buried altar may be of importance.

Room 15 (Pl. 27, *1*). A 'corridor' room giving access to *room 7* (see above). It was situated in the northern corner of the courtyard, in the inner range, filling the angle formed by the walls of *rooms 6* and *7*; length 3.60 m, width 2.0-2.3 m, area about 7.7 sq m. The entrance from the courtyard was in the western corner of the room. The doorway was 1.15 m wide and had no threshold. The carelessly constructed walls were built of reused stones, among which a block with a mortise for the installation of an upright gravestone. The floor 5-8 cm thick was made of finely crushed limestone mixed with clay and very small fragments of pottery, and densely rammed. This floor covered a small (about 1 × 1 m), partially destroyed, pavement of limestone slabs which had earlier been laid in the courtyard in front of the entrance to *room 7*. The fill of *room 15* consisted of clay and loam. Lying in a pile and scattered over the floor were the shells of the Black Sea scallop (*Pecten*) (Pl. 36, *3*) along with fragments of Chersonesean amphorae, jugs, and other pottery.

Room 13 (Pls. 23-24). Situated on the south-western side of the building in the outer range, this room formed a single block with *rooms 16, 17 and 18*. The doorway was presumably about 1 m wide. The floor was of clay 5.5-8 cm thick. Stretching along the north-eastern wall from the eastern corner were the remains of a rectangular household 'enclosure' (or bin) 1.37 m long, 55-60 cm wide and about 60 cm high. Of this enclosure, only the remains of the cross wall, in the form of a single mud-brick 45 × 57 × 9 cm standing on edge, was preserved *in situ*; the longer of its walls had been destroyed and was traceable only by the breakdown of mud-bricks.

Three horizons of the cultural layer were identified in the fill within the room.

Stratigraphic horizon IA. A turf-covered, ashy soil layer with a high content of small fragments of amphorae (123 examples) mostly of Chersonesean manufacture. Only four wall fragments and one rim fragment belonged to a Korinthian amphora (**Ad 86**). In the same horizon a fragment of the rim and 27 pieces of the body of a Sinopean pithos (**Ac 1**) were also found.[37]

Stratigraphic sub-horizon IC_1. This reached its maximum thickness of 80-90 cm near the south-eastern wall. Westward it thinned out and almost disappeared at a distance of 1.5-2.5 m from the wall covering the underlying sub-horizon IC_{1bis}. It was quite clear that sub-horizon IC_1 had formed as a result of the contents of the first floor falling down from above during a fierce fire. Structurally the horizon presented debris entirely composed of broken and surface-burnt amphorae and other pots whose fragments were lying both on and under the mud-bricks (or debris) from the collapsed south-eastern wall that separated *room 13* from the adjacent *room 17* (Pl. 23 and 24, *1*). Some of the amphora pieces had fallen onto the floor,

Table 5. Pottery from room 13, stratigraphic sub-horizon IC_1 (complete shapes and equivalents of complete shapes).

Types of vessel	Places of production: Chersonesean	Sinopean	Other centres	Total	Catalogue Numbers
Pithos		1		1(?)	**Ac 1**
Storage-bins	2			2	**Ac 5**, **Ac 6**
Amphorae	14	2	2	18	**Ad 1**, **Ad 3**, **Ad 7-8**, **Ad 11-16**, **Ad 22**, **Ad 25**, **Ad 32**, **Ad 40**, **Ad 44**, **Ad 79**, **Ad 84**, **Ad 86**
Including:					
Stamped specimens	3	1		4	**Ae 33**, **Ae 72** (14), **Ae 105** (3)
Specimens with graffiti and dipinti	5		2	7	**H 33-34**, **H 42**, **H 61**, **H 63**, **H 70**, **H 73**
Closed shapes (flask, jug)	2			2	**C 7**, **C 266**
Total	**18**	**3**	**2**	**22-23**	

and many sherds of amphorae, jugs, and other vessels were deformed by a temperature that was sufficiently high to cause vitrification of their surfaces. Similarly some of the mud-bricks were also superficially vitrified. Taken together these facts add up to certain testimony that the temperature of combustion reached, or even considerably exceeded, 1200°C.[38]

The qualitative and quantitative description of the materials found in sub-horizon IC_1 is summarily presented in Table 5 above.

The composition of the pottery found in the debris of ceramic containers that constituted sub-horizon IC_1 seems to be a definite indication that certain stores were kept in the amphorae, the storage-bins, and, possibly, the pithos on the first floor of the building. Judging by the position of the amphorae in the debris, they originally stood (possibly in two rows) along the south-eastern wall, and then fell, necks foremost, together with the wall and the ceiling. On the inner and outer surfaces of most of the amphora fragments, runnels of fatty and oily cinders were preserved, while inside some of these runnels had formed clots. A chemical and technological analysis carried out by I.V. Bogdanova-Berezovskaja in the Laboratory of Archaeological Technology, LOIA (IIMK) showed that the runnels and clots from almost all the samples taken were the result of the burning of some organic liquid – probably vegetable oil.[39] This fact may perhaps explain the very high temperature of combustion (*cf.* the description of *room 3* above). Secondly, it suggests, more reliably than direct observations made during the clearing of the layer itself, that the graffiti and dipinti of letter

E found on the necks and shoulders of the amphorae may indeed have denoted the contents of the vessels, *i.e.* ἔλαιον – oil.[40] Recently, however in his consideration of the graffiti and dipinti on amphorae from house U6, V.F. Stolba has suggested that these (and other) letter marks were not in fact a means of identifying stored goods but, rather abbreviations of the name of the owner of the vessels.[41] This supposition is well-reasoned, but even if it is justified, the fact that it was mostly oil that was kept in the amphorae from the storeroom in question is indisputable. Moreover, the oil was kept in amphorae of various different origins: mainly in Chersonesean ones, then in an amphora from Sinope and in one from an unknown East-Mediterranean centre (conventionally referred to as amphorae of the 'Thasian Circle' or 'pseudo-Thasian'). In addition to this, as our analysis demonstrated, oil had been kept in all except one of the amphorae bearing the mark E. And finally the fact that the same analysis showed that in the stores in the house oil had been kept mainly in Chersonesean wine amphorae, particularly those stamped with the name of the astynomos *Bathyllos*,[42] testifies indirectly (or even directly) to Chersonesean home-trade wine amphorae (at least those of Chersonesean manufacture) being reused for storing products other than wine. In other words, the amphorae must have been circulating as reusable containers for a long time, especially among individual urban and rural houses.[43] Three of the fourteen Chersonesean amphorae from sub-horizon IC_1 bore the stamps of the astynomoi *Bathyllos*, *Sokrites* and *Kraton*[44] (**Ae 33**, **Ae 72**). In his recent typological and chronological classification Kac assigned these three magistrates to group 1A; as to absolute chronology, he supposed that they were in office within the period 325-315 B.C.[45]

Stratigraphic sub-horizon IC_{1bis}. This, ashy layer 20-30 cm thick with indications of a fierce fire lay directly above the original floor surface. Fragments of amphorae belonging to sub-horizon IC_1 had sunk into this layer and through it onto the floor itself. However, the majority of the finds that were lying on the floor and within the thickness of horizon must have been connected exclusively with the lower storey of the building.

In the northern corner the skeleton of a man aged 30-40 and about 1.70 m tall was found stretched on the floor alongside the north-eastern wall (Pls. 23-24).[46] The skeleton was partly covered with fragments of amphorae bearing runnels of some burnt liquid on their surface. Many of the bones, especially those in the lower part of the skeleton, were burnt. The pelvic region was the most badly damaged and burnt of all. Quite obviously this individual died a tragic death in the fire. The burning store of amphorae and storage-bins on the upper storey evidently fell down on top of him, and he must have died beneath the weight of the collapsed ceiling among streams of boiling and burning oil. According to the conclusion of anthropologist T.S. Konduktorova there were no other signs of a violent death.

In the eastern corner of the room there was an amphora (**Ad 79**) seemingly of Kolophonian manufacture, standing upright inside the 'household enclosure' (or bin); and lying beside this amphora were two pairs of the iron nails commonly used in fixing beams – each was bent at a right angle; above these nails and within the layer there was also a short nail with a broad head (**K 117**).

In the centre of the room the piled-up remains of a burnt wooden structure comprising fragments of boards and strips and blocks of wood were found on the floor.[47] Next to them at least 20-30 pyramidal loom-weights of unfired clay were lying in a single row; they formed an agglomerated mass from which it was possible to extract and preserve only four complete examples. In the same accumulation were found a long iron rod of rectangular section flattened at its upper end in the form of a very narrow trowel with its tip bent into a hook (**K 189**); a cast bronze ring (**K 65**); a second nail with a broad head (**K 118**); and an iron 'buckle' (**K 170**). This accumulation of objects found lying all together with the burnt wooden

structure probably constructed the remains of a vertical loom which had been standing in the middle of the room.[48]

A second accumulation of items was found on the floor in the southern corner, and these too may have been connected with certain manufacturing activities by those who used this room. In the very corner, a sleeved chisel with a narrow blade was lying on the floor; next to it was an iron shovel (**K 149**), and nearby a whetstone; there was also an iron bow-drill (**K 167**),[49] with a stone pestle next to it. A little over a metre to the north-east of these tools were found an iron axe with a lug (**K 168**), a small iron knife with a hump-like back (**K 154**), and some part of an unidentified tool. The planigraphic position of the finds on the floor indicates quite clearly that originally either all of them had been stored on a corner shelf or some of them at least had been hung on the wall. One way or another, all or almost all these iron tools were most probably carpenter's or joiner's implements.

In addition to the two above-noted accumulations of objects intended for manufacturing purposes, another group of artefacts not connected with manufacture was also conspicuous. All the objects in this group were found close to each other, both on the floor surface and beneath (and partly within) the breakdown of the upper storey. Their relative positions within the layer and on the floor suggest that originally they probably all stood next to each other on a single shelf. They included a small painted ceramic portable altar-thymiaterion (**F 12**), a terracotta model of egg (**M 22**; 42 × 31 cm), a miniature flask for medicines (**B 203a**; height 6.5 cm), and a larger flask of Chersonesean manufacture (**C 94**). Possibly, three Chersonesean lekythoi with narrow throats should also be assigned to the same group (**C 88-89**, **C 92**), but this remains to be proved. A number of the fragments of these lekythoi lay in the area occupied by the other objects (**F 12**, **E 11** *etc.*), while others were scattered over a considerable area within the horizon and on the floor surface. Some functional relationship between the various vessels in this group is very probable: it is possible, for instance, that not only the typical miniature medicine flask but also the other narrow-throated vessels were intended for storing liquid medicaments. The presence of the terracotta egg (*apotropaios*?) and the portable altar is quite likely an indirect indication of the 'medicinal' character of the group. If this supposition is justified, then these vessels may in some way have been connected with the cult of Asklepios and Hygieia, the existence of which is established for Chersonesos and its territory.[50] Also, in this case, the cult of Asklepios and Hygieia might, tentatively, be added to those of Herakles, Demeter and Sabazios which have been proved by materials from the excavations.

In various places on the floor of the room, and inside the horizon covering the floor, there were broken and shattered Chersonesean painted jugs, bowls, black-glazed vessels and their fragments, a small dish, and lamps, as well as handmade kitchen pots and their fragments. One handmade pot, according to an identification by Z.V. Januševič, was originally filled with millet gruel (see Appendix IV). The total composition of all the ceramic shapes found in this layer is presented in Table 6.

Judging by the rather numerous and varied set of objects, the ground floor of *room 13* was used both for living and for manufacturing activities.

Beneath the floor was a layer of buried soil 15-20 cm thick lying on the uneven surface of the bedrock.

Room 16 (Pl. 27, *2*). Situated in the south-western sector of the building in the inner range, this room formed a single block with *rooms 13*, *17*, *and 18*; it was of trapezoid plan: length 3.25 m, width 2.25 m, area 7.3 sq m. Originally it was a corridor room with an entrance from the courtyard located in the northern corner; the doorway here would have been 0.8 m wide, though this was later blocked up with rubble. In the south-west wall a second doorway 1.10

Table 6. Ceramic materials from room 13, stratigraphic sub-horizon IC_2 and the surface of the floor (as complete forms and equivalents of complete forms).

	Place of production				
Types of vessel	**Chersonesos**	**Other centres**	**Local**	**Total**	**Catalogue Numbers**
Amphorae		1 (Kolophon?)		1	**Ad 79**
Commonware:					
Painted jugs	3			3	**C 8, C 12, C 114**
Lekythoi, flasks	5			5	**B 203a, C 88-89, C 92, C 94**
Bowls, louteria	2			2	**C 82**
Plates		1 (?)		1	**C 30**
Black-glazed vessels:					
Kantharoi		3		3	**B 9, B 31, B 43**
Bowls		1		1	**B 142**
Jug		1		1	**B 187**
Lamp		1 (Attic?)		1	**E 12**
Handmade kitchen ware (pots)			6	6	**D 7, D 20, D 34, D 85**
Miscellaneous objects:					
Incense burner (thymiaterion)	1			1	**G 12**
Model of egg		1(?)		1	**M 22**
Total	**11**	**9**	**6**	**26**	

m wide led into *room 17*. The floor was 3-5 cm thick and consisted of densely rammed fine gravel mixed with clay and very small fragments of pottery.

Three horizons of the cultural layer were identified:

Horizon IA – a turf-covered soil layer devoid of finds.

Horizon IC – a dense clay-and-loam mass covering the floor. Within this mass and on the floor surface very small splinters of plain, black-glazed or handmade pottery were encountered, as well as fragments of flat Sinopean tiles which join onto one of the broken keramides (or roof-tiles) from *room 12* and half of a Chersonesean keramis.[51] The lower body of a Chersonesean amphora was found standing in the eastern corner – the foot of this vessel had been broken off sometime in antiquity and the fracture-surface subsequently evened and smoothed (indicating reuse for some other household purpose). Also lying on the floor were the lower body of a Sinopean amphora and fragments of the neck of a Herakleian amphora bearing the traces of an unreadable stamp (**Ae 130**).

Horizon IC_a – a layer of dense loam and rubbish underlying the floor and the bases of the stone socles of the walls, and containing fine splinters of stone, sea-worn pebbles, and small

(unidentifiable) fragments of animal bones along with fragments of shells of marine molluscs and vineyard snails. This facia had formed on the surface of the courtyard before the construction of *rooms 16* and *18*. It was bedded upon a layer of the buried soil that itself lay on the surface of the bedrock.

The room was evidently intended for some household purpose. No signs of the existence of an upper floor were discovered.

Room 18 (Pl. 27, *2-3*). Situated in the south-western sector of the building in the second row and adjoining the gate, this room was attached to *room 17* and built at the same time as *room 16*. It formed a single block with *rooms 13*, *16*, *and 18,* and was of trapezoid plan: length 2.70-2.93 m, width 2.25 m, area 6.33 sq m. Initially it was a self-contained room; the entrance from the courtyard was originally located in the middle of the north-eastern wall, and in front of it was a stone pavement 1.20 × 1 m (upon which was found a crushed handmade pot). The doorway, which was 1.0 m wide, was later carefully blocked up with rubble in such a way that a niche 12-13 cm deep was formed inside the room. Probably at the same time, a narrow exit (48-50 cm) opening into the gateway was cut in the south-eastern wall, and this also had a small rectangle of paving 0.9 × 1 m laid in front of it (within the gateway area). It is possible that at this time too the earlier north-eastern wall of *room 17* (which was also the south-western wall of *room 18*) was reconstructed. The renewed wall was built in the same technique and type of masonry as was used for the wall socles of *rooms 16* and *18*. A doorway about 1 m wide made in the western corner of *room 18* gave access to *room 17*. The former thus became a corridor or passage-way room adjoining the gate (and so we named it preliminarily 'the door-keeper's room').

The floor of *room 18* resembles that of *room 16* in its structure. The stratigraphy and the character of the fill were also similar: with the exception of a few small fragments of pottery and a bronze arrowhead (**K 86**) lying in the niche, there were no finds in the fill or the floor. No signs of an upper floor were found.

Room 17 (Pl. 27, *2*). Situated on the south-western side of the building in the outer range and adjoining the gate, this room made up a single block with *rooms 13*, *16*, and *18,* to which communicating doorways gave access (see above); length 4.75-4.80 m, width 2.90 m, area about 14 sq m. Originally, before attachment of *rooms 16* and *18*, this room formed a block with *room 13* only. The entrance from the courtyard was in the northern corner, the doorway there being 1.10 m wide. The floor was made of clay 5-7 cm thick. In the southern corner there was a round fireplace 75-80 cm in diameter built of flat stones and fragments of flat Sinopean tiles on clay mortar. In the homogeneous clay-and-loam fill were found small fragments of tiles, amphorae, and other vessels (total 79). Standing on the floor by the fireplace and close to the south-eastern wall, there was a large crushed handmade pot decorated with fingernail impressions; a whetstone and some mussel-shells were found in the same spot. Fragments of three other handmade pots (**D 100-102**) were found close to the entrance to *room 13*.

Beneath the floor there was a layer of buried soil 15 cm thick lying on the uneven surface of the bedrock. The layer contained small pieces of charcoal and the shells of vineyard snails (*Helix*).

Judging by the clay-and-loam fill it may be supposed that this room had an upper storey.

Room 19 (Pl. 28, *1*). A corridor or passage-way room in the inner range. It fronted onto the courtyard and the south-eastern side of the gateway, sharing its south-western wall with *room 20,* with which it originally made up a single block. Later, both *rooms 19* and *20* were made to communicate with *rooms 21* and *22*. *Room 19* was of trapezoid plan, length 3.10-3.30 m,

width 2.25-2.28 m, area about 7.7 sq m. The entrance from the courtyard was in the northern corner, where the width of the doorway was 1.05 m. The stone threshold 85 × 45 × 18 cm was very carefully cut from a single block, with one edge chiselled out to accommodate the door-post and the door, a socket for fixing the door-post, and a hole for the door pivot. The door itself would have been 68 cm wide and evidently opened into the room. An area 1.1 m wide in front of the entrance in the courtyard was carefully paved with flat stones. A second doorway 1.05 m wide in the middle of the south-western wall led into *room 20*. Its threshold (27-32 cm wide and 18-20 cm high) was composed of two stone slabs with straight-cut edges and a special socket for fixing the door-post. In the western part of the doorway on the side of *room 20* there was a lower bearing of stone; the door thus opened into *room 20*. The width of the door would have been about 65 cm. The floor presented a densely rammed fine limestone gravel mixed with clay. In the western corner there was a round fireplace about 0.4 m in diameter with a hearth put together from pieces of flat Sinopean roof-tiles.

The dense clay-and-loam fill of the room was similar in terms of its stratigraphy and structure to the fills of *rooms 16* and *18* (and the same is true of the underlying layers). In the fill (horizon IC) were found the following: about 80 small fragments of plain red-ware closed and open vessels of Chersonesean and Sinopean manufacture; 7 amphora fragments of Chersonesos and of the Solokha-I type; the same number of fragments of cooking pans; 5 small fragments of Sinopean keramides; a fragment of a lamp (**E 4**); and one fragment of a terracotta figurine. No objects were found on the floor surface.

The room was probably intended for household purposes. No signs of the existence of an upper floor were discovered.

Room 20 (Pl. 28). Situated on the south-western side of the building in the outer range, this room was originally a self-contained one (length 3.80 m, width 3.10 m, area 11.78 sq m): the former entrance from the courtyard was towards the northern corner, as described above (see *room 19*). After the construction of *room 19* the two rooms together formed an independent block; later this block was enlarged to four rooms by taking in the adjoining *rooms 21* and *22*. The floor about 5 cm thick was clay-plastered, and its level was 5-6 cm below that of the floor in *room 19*. In the centre of the room a fiercely scorched round hearth (?) about 50 cm in diameter was distinguished while close to the north-eastern wall were the remains of a fireplace in the form of a square, clay-plastered area with sides measuring 50 cm raised 7 cm above the floor. The clay-plastered sides had pieces of Sinopean keramides mortared into them, and on one of these pieces an unreadable astynomos stamp was preserved (**Ab 8**).

In the homogeneous clay-and-loam fill small fragments of tiles, amphorae, and other pottery were encountered (total 127 examples). A large crushed handmade pot (**D 3**) decorated with finger impressions was found standing on the floor in the western corner. But, apart from a crushed miniature handmade salt-cellar (**D 126**) and next to it a pyramidal pendant of blue glass (**N 7**) lying in the eastern corner, no other objects were found in the room.

In the clay-and-loam fill (horizon IC) pieces of clay stucco with imprints of wood were encountered; these probably belonged to the ceiling. The volume of the layer suggests that there was originally an upper floor above this room.

Room 21 (Pl. 29, *1-2*). This room was situated on the south-western side of the building in the inner range, between *rooms 19* and *23*, and the stone socles for its mud-brick walls were built at the same time, of the same materials, and in the same manner as those of *room 19* (length 2.80 m; width 2.25 m; area 6.3 sq m). The room lay on the north-east side of *room 22*, with which it originally constituted a single block and to which it gave access in the manner of a walk-through passage-way. The entrance from the courtyard was originally located in the

northern corner, and the doorway, which had a stone threshold, was 1 m wide; in the courtyard in front of this doorway there was a stone pavement measuring 1.5 × 1.45 m. Later, the doorway was blocked up with small pieces of rubble held together with a clayey mortar. The room then formed a single block with *rooms 19, 20, 21,* and *22*. There was a second doorway, 1.05 m wide, leading into *room 22*. The threshold was made of two carefully cut blocks of the so-called 'Sarmatian' limestone with two sockets cut into for a wooden door-post with a pivot (the lower bearing for the hinge-pin of the wooden door). Preserved *in situ* inside one of the sockets there was a copper nail for fixing the wooden frame of the door-post to the wall. The door itself (about 65 cm wide) opened into *room 22*. The floor of *room 21* was paved with large stone slabs except at the south-eastern side, where an adobe strip about 4 cm wide and 2.25 m long was left unpaved alongside the wall, at the same level as the paving. The purpose of this strip is not quite clear.[52]

In terms of its stratigraphy and structure, the dense clay-and-loam fill of the room is similar to that of *rooms 16* and *18*. (And the same is true of the underlying layers.) In the fill (horizon IC), were found 92 small fragments of Sinopean tiles, the walls of Chersonesean and other, unidentified, amphorae, and fragments of plain, red-ware closed and open vessels and hand made pots, as well as the shells of marine molluscs (*Ostrea, Mytilus, Pecten*) and vineyard snails (*Helix*). Here, also numerous fragments of the claws and shells of both stone crabs (*Eriphia spinifrons* L.) and green crabs (*Carcinus maenas* L.) were collected. Lying on the floor in the centre of the room were an overturned limestone tub (70 × 26-37 cm; depth 9 cm) and a low rectangular support for it (27 × 27 × 14 cm), also made of limestone. Near the entrance to *room 22* a copper fishhook was found on the floor.

The room probably served some household purpose, and the considerable accumulation of remains of marine fauna suggests that it was used for cooking and/or preserving the same. No trace of a second storey was discernible.

Room 22 (Pls. 29, *2-3* and 30, *1*). This room was on the south-western side of the building, in the first row, between *rooms 20* and *24*; length 3.80 m, width 3.10 m, area 11.78 sq m. The adobe floor was about 5 cm thick, its level being 5-6 cm lower than that of the floor in *room 19*. Originally the room was self-contained, and the entrance from the courtyard was in the northern corner (see description of *room 21* above). After *room 21* had been annexed to *room 22*, the two rooms together constituted a separate block which could be entered from the courtyard. Later, the courtyard entrance to *room 21* was blocked up, and, probably at the same time, a doorway 0.85 m wide was cut in the western corner of *room 22* through its north-western wall into *room 20*. For this purpose, the upper course of the stone foundation was removed while the section below, measuring 85 × 44 × 20 cm, was left in place as a stone threshold. Thus *room 22* finally became part of a separate block of four rooms (*rooms 19-22*).

The floor (3-5 cm thick) was of densely puddled clay mixed with finely crushed limestone and lay on a very thin (less than 20 cm) layer of buried soil. In the eastern corner of the room there was a square fireplace (50-55 cm wide) with a puddled-clay hearth and a low kerb constructed of sea-worn pebbles, fragments of flat Sinopean tiles, and the walls of a Sinopean pithos.

Within the dense clay-and-loam fill and at different spots on the surface of the floor, were found 98 small fragments of amphorae and other vessels, fragments of severely corroded hammered iron nails, a small bronze nail (**K 34**), a ring (**K 61**), and two pendants (**K 53** and **K 56**). A spindle-whorl made from the foot of a black-glazed kantharos with the graffito ΘΕΟΚ (**B 67**, **H 24**, **M 6**) was found lying in the southern corner.

In the western corner of the room were found two Chersonesean copper coins of the type depicting the Parthenos shooting the hind on the obverse and a bull above a club on the re-

verse (**I 7-8**). Both were uncovered at a depth of 6 cm below the floor surface – that is to say, in the upper part of the ancient topsoil layer that covered the bedrock, but below the level of the masonry of the wall socles. One of the coins was lying 78 cm from the north-western wall and 84 cm from the south-western wall of the room, while the other was respectively 1.10 and 0.44 m from these same walls. The stratigraphic context (taking into account the dense structure of the floor which would hardly have allowed the coins to sink through it naturally) leads to the conclusion that the coins could only have got into the buried soil *either* before the beginning of construction of the house *or* during the course of its construction, but certainly before the laying of the dense clay-and-gravel floor in this room. Hence, we may suppose with a fair degree of probability that the release of this new type of Chersonesean coin had either begun immediately before construction of house U6 or was synchronous with the beginning of the construction.[53]

The volume of the fills and traces of burnt ceiling materials found in sub-horizon IC_1 suggest a second storey above this room.

Room 23 (Pls. 30-31, *1*). A corridor room located in the southern corner of the courtyard, in the second row between *rooms 21* and *25*, and adjacent to *rooms 22* and *24* (situated in the first row on its south-west side). Its ground plan is an irregular pentagon: length 3.70 m, width (clockwise) 2.27, 2.45, 1.75 m, area 7.44 sq m. This room was built in between *rooms 21* and *26*, probably after the construction of *rooms 19* and *21,* and possibly after that of *room 26* too (see below).

Initially, the room was built to give access to *room 24* (see below). The entrance from the courtyard was in the northern corner. The width of the doorway, together with the stone threshold (made of a single block), was 1.05 m; at a later stage, it was blocked up with stones. The entrance to *room 24*, in the southern corner, was possibly blocked up at the same time, and a narrow passage (65 cm wide) was made through to *room 25* instead. The floor, made of puddled clay mixed with finely crushed limestone, was plastered over a layer of refuse (facias IC_a).

The clay-and-loam fill and the walls preserved traces of a very fierce fire. In the fill and on the floor, were found 68 small fragments of Chersonesean amphorae and 27 fragments of other amphorae, along with fragments of nails (**K 129**, **K 139**), and the remains of a bronze bodkin or awl (**K 51**). In the northern corner there were 19 molluscs-shells (*Ostrea, Mytilus, Helix)* lying in a small heap on the floor. A smashed and severely scorched terracotta (**F 8**) was lying in the western corner, and beneath it, in the thickness of the floor, was a small pit 16 cm deep and 42 cm in diameter; this was filled with ash mixed with small shells from marine molluscs (*Venus, Cardium, Tapes, Nassa reticulata*) and crushed and scorched bird bones (unidentifiable). Scattered elsewhere on the floor surface, were a fragment of the upper part of a rectangular millstone, some fragments of a Chersonesean bowl, and the walls of an amphora.

The purpose of the room is unclear. There were no traces indicative of the existence of a second storey.

Room 24 (Pl. 31, *2*). This room was in the southern corner of the courtyard, in the first row between *rooms 22*, *23*, *25*, and *28*; length 3.75 m, width 3.0-3.05 m, area 7.44 sq m. Initially, the room was self-contained, and the entrance from the courtyard was in the northern corner. The doorway was 1.10 m wide with a threshold composed of several stone slabs. The lower door bearing, cut in stone, was preserved *in situ*. The door itself, about 70 cm wide, must have opened into the room.

After the corridor *room 23* had been annexed to the courtyard side of this room, both rooms together formed an individual block with a single exit to the courtyard. Later, prob-

ably after the construction of *rooms 25* and *26* (see below), the doorway that had originally connected *rooms 24* and *23*, was blocked up (as was the courtyard entrance to *room 23*). The entrance to *room 24* was then transferred to its eastern corner, thus connecting it with *room 25*. The width of this new doorway was about 1 m. The upper part of the wall socle was removed, but the lower section, lying on the surface of the soil, was left in situ as a stone threshold.

The floor was made of puddled clay (or adobe) applied over a layer of finely crushed limestone; thickness 5-8 cm. Beneath the floor was a thin layer of buried soil (0.15-0.20 m thick) covering the surface of the bedrock; this layer contained very small pieces of charcoal and the crushed shells of vineyard snails (*Helix*). At the level where the lower limit of the adobe floor met the surface of the ancient topsoil layer, there was found in the centre of the room, a Chersonesean copper coin issued under the magistrate *Eudromos*, with a griffon on the obverse and a kneeling Parthenos on the reverse (**I 5**). The context of course indicates that the coin must have got there *before* the laying of the adobe floor.[54]

Dispersed uniformly in the clay-and-loam fill (horizon IC) and on the surface of the floor, there were 122 small fragments of amphorae and other wheel-made and handmade (**D 54**) pottery, as well as the fragments of some severely corroded iron nails (**K 116**, **K 140**). Lying on the floor surface near the north-eastern wall were a Chersonesean jug whose rim had been broken off in antiquity (**C 13**) and the fragments of a large iron knife (**K 150**) and scattered elsewhere on the floor were the shells of various molluscs: oyster (*Ostrea*), scallop (*Pecten*), *Venus*, and vineyard snail (*Helix*).

The volume of the clay-and-loam fill and traces of burnt ceiling materials found in sub-horizon IC_1 indicate the existence of a second storey here.

Room 25 (Pl. 32, *1*). This was a walk-through or passage-way room situated in the southern corner of the courtyard, in the inner range; length 2.85 m, width 2.10 m, area about 6 sq m. The entrance from the courtyard was in the northern corner, and the doorway was 70 cm wide with a threshold made of stone slabs. The floor, which lay immediately on top of a thin intercalation of refuse, was densely paved with small limestone setts and cemented with a clay mortar; thickness 4-5 cm.

This room was formed in the angle created by the addition of *rooms 23* and *26* alongside the rooms in the outer range. It combined *rooms 23*, *24*, *26*, *28* and *29* into a single block with a single entrance from the courtyard, and four doorways led out into the neighbouring rooms; the two doorways in the southern corner gave access to *rooms 24* and *28*, the one in the western corner to *room 23*, and that in the eastern corner to *room 26*.[55]

In the clay-and-loam fill and on the floor, were found the fragments of some severely corroded iron nails (**K 124**, **K 125**), as well as 89 small fragments of various pottery (mostly Chersonesean amphorae and jugs, cooking pots (**C 151**), and handmade pots and bowls (**D 118**)). A portable stone small altar in the form of a bird (**G 5**) lay on the floor in the southern corner, near the entrance to *room 25* and scattered about elsewhere on the floor, were the shells of oysters (*Ostrea*), mussels (*Mytilus*), *Nassa*, and vineyard snails (*Helix*).

The character and volume of the fill precludes any supposition that a second storey existed above this room.

Room 26 (Pl. 32, *2*). This room was located in the southern corner of the courtyard, in the inner range, and opened out of *room 25*. Its ground plan was of an irregular trapezoid form: length (of courtyardside) 1.75-2.10 m, width 2.50-2.75 m, area about 5.03 sq m. The entrance from *room 25* was in the southern corner. The width of the doorway was 1.10 m; there was no threshold, and, probably, there was never a door either. The adobe floor, 5 cm thick, was plastered over a thin refuse layer (about 5-7 cm thick).

The room was formed by extending the north-west-wall of the previously existing *room 27* towards the south-west, and then making a right-angled turn to the south-east. Judging by the careless construction of the wall socles and the irregular ground plan, the room served some secondary purpose within the block formed by the six *rooms 23-26* and *28-29*.

The loamy fill contained a large amount of ash and fine charcoal, which had probably fallen from the burnt ceiling. On the floor were uncovered eight small fragments of Sinopean keramides and 61 fragments of various pots including wall fragments of a Sinopean pithos, along with Chersonesean, Sinopean, and Rhodian amphorae, a Chersonesean amphoriskos, jugs, and bowls (**C 51**),[56] a black-glazed bowl (**B 105**), and a couple of fragmentary handmade vessels (**D 51** and **D 63**). Scattered about on the floor there were also shells of oysters (*Ostrea*) and mussels (*Mytilus*), bones of brill (*Rhombus maeoticus* Pall.), fragments of some scorched and badly corroded hammered iron nails, and a round leaden spindle-whorl. Near the middle of the north-western wall, a very severely scorched terracotta – a winged Eros (**F 9**) – was uncovered.

The character and volume of the fill indicate with a fair degree of probability that this room was single-storeyed. Its definite purpose was impossible to identify, though it seems clear that it had some merely auxiliary function.

Room 27 (Pl. 32, *2*). A corridor room, situated on the southern side of the courtyard, in the second row; length 3.40-3.57 m; width 2.40 m; area 8.36 sq m. The room was added to *room 30* (in the outer range) to form a single block. The entrance from the courtyard was in the western corner, the width of the doorway being 86 cm. The double-stepped threshold was made of limestone slabs; however no traces of any wooden door framing have been discovered. The adobe floor, 5 cm thick, was plastered over a thin intercalation of refuse (about 5 cm thick).

In the lower part of the very dense, loamy fill, containing much ash and fine charcoal, and on the floor surface, were found 49 small fragments of Sinopean tiles, along with the walls of pithoi, some Chersonesean amphorae and jugs, a fragment of a grey-slipped fish-plate, and a fragmentary handmade bowl.[57] Lying jumbled together in the middle of the room, were a small silver pendant (**K 185**), a whetstone, and a mussel shell (*Mytilus*).

The character and volume of the fill plainly indicate that the room was single-storeyed. Probably it served some household purpose.

Room 28 (Pls. 32, *2* and 34, *1*). This room was situated in the southernmost corner of the building in the outer range, and formed part of a single block made up of the adjacent *rooms 23-26* and *29*; length 4.65 m, width 3.10 m, area 14.42 sq m. Originally, the room was self-contained. The entrance from the courtyard was in the northern corner, the width of the doorway being 1.10 m. The threshold was very carefully fashioned from a single limestone block with rectangular mortises for the door-jambs and a spherical socket (the lower bearing) for the hinge-pin of the door cut into it.[58] The door itself, which would have been about 7 cm wide, evidently opened into the room. Later, the room was entered from the southern corner of the courtyard via the corridor *room 25*.

The floor was of adobe, 8-10 cm thick, plastered over the surface of the buried soil (about 15 cm thick) that covered the limestone bedrock. In the western corner, there was a small pit in the floor, 6 cm in diameter and 3 cm deep; it was filled with pure ash, containing calcined and crushed bird bones. Lying three metres from the southern corner and 60 cm from the south-eastern wall, the broken lower base of a press carved of dense limestone in the form of a rectangular 'trough' with low walls; a limestone block, also rectangular, was lying nearby – possibly, the weight for the lever of the press. Judging by the position of these fragments,

the base of the press was originally set about 1.50 m above the level of the floor. Near the south-eastern wall, and 2.05 m from the southern corner, there was a square fireplace measuring 52 × 52 cm. A sandstone slab plastered with clay on top served as the hearth. The plaster covering the wall of the fireplace contained fragments of Sinopean keramides.

In the clay-and-loam fill of the room, it was possible to discern two stratigraphic horizons divided in places by lenses of thin, calcined, ashy intercalation, containing woody remains and spots of accumulated clay plaster, probably from the ceiling.[59] In the fill and on the floor surface, a fragmentary flat Sinopean tile, some wall fragments of a pithos (also Sinopean),[60] and a whetstone were uncovered. Besides these, fragments of at least three to five Chersonesean and one Sinopean amphorae were found in the fill and on the floor of the room, as well as just outside the building – in square Z-7. On the handles of two of the Chersonesean amphorae there were stamps of the astynomos *Bathyllos* (**Ae 22**) and a stamp with the monogram EYA (**Ae 97**).[61] The Sinopean amphora bore the stamp of the astynomos *Mnesikles* (**Ae 110**). The archaeological context (*i.e.* stratigraphy and planigraphy) suggested unequivocally that, before the building collapsed, these amphorae were stored on a second storey, above *room 28*.[62]

It is difficult to determine the purpose of this room, but probably it was used for some manufacturing process.

Room 29 (Pl. 32, *2*). This room was situated in the southern part of the building, on the south-eastern side of the courtyard, in the outer range; length 3.50 m, width 3.10 m, area 10.85 sq m. It was part of the single block comprised of the adjacent *rooms 23-26*. *Room 29* adjoined *room 28* and was connected with the latter by a doorway in the party-wall, though initially it had been self-contained. Its original entrance, from the courtyard, was in the western corner, the doorway there being 1.10 m wide. Later, this was blocked up, and evidently at the same time, the south-western wall separating this room from the adjacent room (*28*) was partially rebuilt. The western end of this wall was replaced by a wall built of mud-bricks on a low stone foundation, in the middle of which a new entrance from *room 28*, about 1.0-1.1 m wide, was opened up. The floor was very densely paved with finely crushed limestone (gravel) in a clayey mortar. This floor was 3 cm thick and covered an earlier adobe floor (2-3 cm thick) plastered over the thin layer of buried soil on top of the bedrock.

In the centre of the room was an adobe fireplace 44-45 cm square, while in the eastern corner there was a household 'enclosure' (or bin) measuring about 0.7-0.8 × 1.5 m by about 0.35 -0.40 m high. Its shorter side was separated by an unstamped flat Sinopean tile, set perpendicular to the south-eastern wall; some small stones and the remains of mud-bricks made it possible to trace the long side of this 'enclosure'. In the western corner of the room, a pit about 60 cm in diameter and 21 cm deep was dug in the floor; this was filled with ashes devoid of any admixtures, though lying on the top were the fragments of a small portable clay altar (or censer) of **G 12-13** type, of Chersonesean production.

Besides a few small fragments of amphora walls and a piece of the wall of a pithos, no other artefacts came to light within the clay-and-loam fill of the room. All the other artefacts found were lying on the floor surface. A Chersonesean amphora (**Ad 20**) – a vessel that had been reused in antiquity after its rim had been broken – stood *in situ* in the northern corner. Lying to the west of the fireplace, there were the bottom part of a Chersonesean amphora, some fragments of the upper body of a Sinopean amphora, a broken grey-slipped fish-plate (**B 224**) and two black-glazed kantharoi (**B 8**, **B 24**) (Pl. 32, *3*). Inside one of which was a bronze nail (**K 39**). Scattered about elsewhere on the floor were the fragments of one iron and two bronze plates (**K 93**, **K 94**, **K 182**), some fragments of a severely corroded iron knife (**K 159**), an iron chisel (**K 165**), a whetstone, and the shells of mussels (*Mytilus*) and (*Nassa reticulata*).

The volume of the clay-and-loam fill in the room and the intercalations of ashes suggest the possible existence of a second storey. Quite probably, *room 29* served as living-quarters.

Room 30. This room was situated in the outer range on the south-eastern side of the courtyard. It formed a single block with *room 27*, which was constructed later; length 3.50 m, width 3.05 m, area 10.68 sq m. Originally, the room was self-contained, with an entrance straight from the courtyard in the western corner. The doorway there was 1.10 m wide, but later, possibly after the addition of *room 27*, it was apparently blocked-up with mud-bricks, and a new entrance, estimated to have been about one metre wide, was cut in the northern corner.[63]

The adobe floor, 8-10 cm thick, was plastered over the surface of the ancient topsoil. Near the south-western wall, and 60 cm from the western corner of the room, there was a small rectangular fireplace measuring 35 × 45 cm; this was constructed out of pieces of flat Sinopean tiles, on one of which was imprinted the stamp of the astynomos *Diophantes* (**Ab 4**). Close beside the fireplace, the lower part of a Chersonesean amphora was found dug into the floor (**Ad 30**).[64]

In the clay-and-loam fill and on the floor surface, were found 55 small fragments of various pots, a whetstone, two bronze arrowheads (**K 84**, **K 87**), and a mussel shell (*Mytilus*).

The volume and character of the fill suggest the existence of a second storey above *room 30*.

Room 31. Situated on the south-eastern side of the courtyard, in the first row, between *rooms 30* and *32*, this room formed a single block with the corridor *room 36* attached later on the courtyard side; length 4.55-4.57 m, width 3.10 m, area about 14 sq m. The communicating doorway to *room 36* was in the west corner. Traces of reconstruction (reconstructions?) were discernible, and it seems that originally, the room was self-contained and shorter in length (about 3.7-3.8 m), with entry direct from the courtyard. Later, the party-wall with *room 32*, was completely dismantled and moved north-eastwards, thus enlarging the area of *room 31* and correspondingly reducing that of *room 32* (see below). The new wall was built entirely of mud-bricks without any stone socle, and so stood directly on the surface of the floor.

The adobe floor, up to 8-12 cm thick, showed no traces of any kind of structures having been built upon it. Within the clay-and-loam fill and on the surface of the floor a total of 58 small ceramic fragments were collected. During the clearing of the wall opposite the entrance, an arrowhead (**K 83**) was found stuck into it. Scattered about on the floor were the badly scorched pieces of the upper stone of a rectangular push-pull action mill that had been cracked and broken by fire.

Intercalations of ashes and pieces of plaster found in the clay-and-loam fill (sub-horizon IC_1) suggest the possible existence of an upper floor.

The purpose of the room was impossible to determine.

Room 32 (Pl. 34, *2*). Situated on the south-eastern side of the courtyard, in the outer range, this room formed a single block with *rooms 1*, *33*, *34*; length 2.50 m, width 3.03-3.10 m, area 7.58 sq m. The entrance from *room 33* was in the north-eastern wall, 92 cm from the northern corner; the (poorly preserved) doorway was about 90-95 cm wide and had no threshold. The adobe floor was up to 12 cm thick.

The room had been remodelled at some stage. In its original form it had been self-contained, with a length of about 3.6-3.7 m and an area of roughly 11 sq m. The former entrance from the courtyard was in the western corner, the width of the doorway being about 1.05-1.10 m. Later, this entrance was blocked up with mud-bricks, and just to the south-west of it

a new cross wall was built between *rooms 31* and *32*. As a result, the area of *room 31* was increased and that of *room 32* correspondingly reduced. In addition, the latter room ceased to be self-contained, access having been created to *room 33*, and via that to *rooms 1* and *34* in the eastern corner of the building, as noted above.

In *room 32*, there were two household 'enclosures' built of stone and mud-bricks. The first (enclosure A), measuring 1.0 × 1.30 m was in the eastern corner. Its walls were made of upright limestone slabs 6 cm thick and 45-50-62 cm high, and its volume probably amounted to about 0.85 cub m. The second enclosure (enclosure B), measuring 1.12 × 1.12 m, was in the southern corner; the wall aligned with the longer axis of the room had a foundation of limestone blocks 18-20 cm high and 30 cm thick (there must have been a mud-brick wall above), while the transverse wall was made of a limestone slab 40 cm high and 10 cm thick. The volume of this enclosure was presumably about 0.5 cub m.

Lying on the floor surface between enclosures A and B was the lower part of a reused Chersonesean amphora (**Ad 34**) (its upper half had been broken-off in antiquity). The lower part of another Chersonesean amphora, identical to the first one, was found inside enclosure B (**Ad 35**), and the smashed lower part of a Sinopean amphora lay on the floor in the centre of the room; undoubtedly, this piece too had been reused, for though the foot had been broken off in antiquity, the fracture surface had been carefully smoothed down. In addition to the amphorae (or rather, their lower parts), there were also the fragments of three handmade pots (ornamented round the edges of the rims (**D 19**, **D 67**, **D 72**)) and the bottom of a handmade pot that had possibly been used as a lid (**D 90**).[65] Nearby, there was also a whetstone.

At different levels, in the clay-and-loam fill, there were small fragments of Sinopean tiles and amphora walls, while on the floor surface and slightly above it, three very severely scorched fragments of the upper stone of a rectangular push-pull action mill were uncovered. Calcined intercalations and fine particles of plaster discerned in the fill suggest the possible existence of an upper floor.

The floor was plastered over a very thin loamy layer that covered the bedrock surface. In the period between its remodelling and its ultimate destruction, this room, by all appearances, served as some kind of storeroom constituting an integral part of the four-room block (*rooms 1*, *32-34*) situated in the eastern corner of the building. However, neither the stratigraphic and planigraphic information, nor the finds provide any evidence as to the *original* purpose of *room 32*.

Room 33 (Pls. 35-36). This corridor room situated in the outer range, on the south-eastern side of the courtyard, formed a single block with rooms *1*, *32*, and *34*; length 3.30 m, width 3.05-3.10 m, area about 10.2 sq m. The entrance from *room 32* was in the south-western wall (see above), while the entrance to *room 1* was in the north-eastern wall (see *room 1* above). The adobe floor was up to 12 cm thick.

Initially, the room was self-contained, and (like all the rooms situated on the north-western and south-eastern sides of the building) it opened directly onto the courtyard. The doorway, in the western corner, was 1.05 m wide, with a threshold made from a single limestone block; in front of it, in the courtyard, there was a flagstone pavement measuring 1.25 × 1.10 m (see the description of the courtyard below). Later, this doorway was blocked up with stones and some sort of puddled clay mass (of which the original form remains unclear, though possibly it was mud-brick walling). A stone weight from a wine-press was used for blocking the lower part of the doorway (Pl. 35, *2-3*): this weight was a rectangular block of dense 'Sarmatian' limestone measuring 60 × 20-24 × 40 cm with mortises cut into it (12-15

cm wide and 4.5 cm deep) for fixing it to the wooden frame of the press. It was evidently after the blocking-up of the courtyard doorway that the new doorway, connecting *room 33* with *room 1*, was cut in the north-eastern wall.[66] This was about 1 m wide; it had no threshold and hence, possibly, no door.

Near the north-western wall, and 1.85 m from the northern corner of the room, there was a round fireplace about 40 cm in diameter (Pl. 36, *1*). Its hearth was composed of fragments of flat Sinopean tiles, and fragments of the walls of Chersonesean and Herakleian amphorae were employed elsewhere in its construction. In the eastern corner of the room, the remains of a rectangular household 'enclosure' (or bin) measuring 1.10 × 0.70 m were uncovered; its walls consisted of large limestone slabs set on edge, and in the foundation of its end-face wall the lower part of what appears to be a gravestone (or some other type of stele), complete with a tenon for fixing it in a pedestal, had been reused.[67] Near the 'enclosure' a lead weight (**K 4**)[68] and two square stone weights (?) were found lying on the floor. In addition, scattered about on the floor surface, there were a number of small fragments of black-glazed vessels, a whetstone, and a glass figured pendant in the form of a bird (**N 12**).

The clay-and-loam fill contained only some very small fragments of amphora walls and charcoal from burnt ceiling beams (?). The latter fact and the volume of the fill suggest that there was an upper floor above this room.

Beneath the floor there was a humus-containing layer about 30 cm thick lying on the surface of the bedrock. This had undoubtedly been dug over in antiquity (during reconstructions?) and contained small fragments of amphorae, mostly Chersonesean – but also from some other, unidentifiable Mediterranean (?) centres.

During the later stage of its existence, the room seems to have served some domestic purpose.

Room 34 (Pl. 18, *1*). Situated in the eastern corner of the courtyard, in the inner range, this corridor room formed a single block with *rooms 1*, *32*, *33*; length 2.60-2.70 m, width 2.40 m, area about 6.4 sq m. The entrance from the courtyard was in the western corner of the room. The doorway was 1.05 m wide, and the threshold was made from a single stone slab with a mortise cut into it for the bearing of the hinge-pin of the door. Another doorway, 1.10 m wide, leading into *room 1*, was cut in the south-eastern wall towards the eastern corner.

High stone socles (of 1.05-1.10 m) were preserved, on top of which the remains of mud-brick masonry were discernible. The adobe floor, up to 5 cm thick, was plastered over a thin layer of refuse (facia IC_a). No traces of a hearth were found.

The clay-and-loam fill was homogeneous and completely devoid of finds. Lying on the floor surface near the south-western wall were a small smashed jug of flaky, greyish clay and a few wall fragments of Chersonesean amphorae. In the southern corner, there was a scattering of beads made from scallop-shells (*Pecten*) with holes drilled in their apices for stringing (Pl. 36, *2*).

To all appearances, the room was used for ancillary purposes. The volume and character of the fill clearly indicate that it was one-storeyed.

Room 35 (Pl. 18, *1*). This corridor room, situated at the eastern corner of the courtyard, in the second row, formed a single block with *room 2*; dimensions 2.35 × 2.75 m; area about 6.46 sq m. The room was created by the construction of a wall across the gap between the south-western wall of *room 3* and the northern corner of *room 34*. The entrance from the courtyard was in the western corner of the room, the doorway being 1.10 m wide with a threshold made from a single stone slab. In the eastern corner, another doorway, 1.10 m wide, gave access to *room 2* (see above).

The floor, which was laid over a thin (3-5 cm) layer of refuse containing very small fragments of pottery, presented a densely rammed surface of limestone gravel held together with a clayey mortar. No traces of a hearth were uncovered; and, apart from a few fragments of walls of Chersonesean amphorae and the foot of a black-glazed kantharos (**B 68**), no artefacts were found on the floor surface.

Judging by the volume of the clay-and-loam fill, this was a single-storeyed, ancillary room.

Room 36. This was a corridor room situated in the inner range on the south-eastern side of the courtyard. It was constructed in the angle formed by the north-eastern wall of *room 27* and the north-western wall of *room 31*, with the latter of which it composed a two-room block. The architectural remains were very poorly preserved because the walls had been either of mud-bricks or of the so-called '*turluk*' construction.[69] The presumed length of the room was 3.5 m, as reconstructed by the north-eastern edge of the adobe floor; the width at the south-western end was 2 m, and that at the north-eastern end probably about 2.4-2.5 m; thus the area may have been 8.4-8.75 sq m. The entrance from the courtyard was in the western corner of the room, the doorway there being 1.10 m wide with a threshold made from a single limestone slab set on edge; directly opposite, another doorway gave access to *room 31*.

In the clay-and-loam fill and on the floor surface, only some small unrelated fragments (mostly walls of amphorae or jugs, and mainly of Chersonesean production) were found. The adobe floor, about 3 cm thick, was plastered over a thin layer of refuse (facia IC_a).

Judging by its appearance, the room was an ancillary one.

B. Gate. Courtyard. Well

Gate (Pl. 37). The only entrance into building U6 from outside was located almost in the middle of its south-western side and led to the central courtyard. Judging by the topography of the site, the gateway evidently gave onto the street that ran from north-west to south-east and separated the building from areas U8-U9 where there are thought to be some other building remains (as yet unexcavated).

The gate was located between *rooms 17* and *20*. The centre-line of the gateway lies 2.7 m to the south-west of the central axis of the ground plan of the building, which coincides with wall between *rooms 3* and *4* (thus the centre of the gateway lies 15.6 m south-east of the western corner of the building).

Originally, the width of the gateway between *rooms 17* and *20* was 3.92-4.12 m. On the inner side of the gate where it opened out into the courtyard, the foundations of two massive pylons have been preserved. In plan they measured 1.05 and 1.08 m × 0.55 m, while in height they rose 50-52 cm above the level of the adjacent ground surface at the time of the destruction of the building.[70] These foundations (actually stone socles for mud-brick masonry) were composed of large, excellently cut, limestone blocks measuring 1.08 × 55 × 20-26 cm. The opening between the pylons was 2.05 – 2.08 m wide. No traces were found of any structures that might indicate the existence of gates here at the initial building stage.

It was not possible to establish with any certainty if similar pylons existed on the south-western side of the entrance (*i.e.* in the street outside), because a number of blocks of the stone socle of the exterior wall of the building have been completely removed here, probably in very recent times. Nevertheless, the position of the south-western edge of the levelling fill in the inner space of the gateway (see below), the distribution of materials over its entire surface, and signs of stones having been quarried from the foundations of the walls suggest with a fair degree of probability that here, too, there were pylons, similar to those on

the north-eastern side of the gateway, dating from the time when the major part of the building was erected.

The stratigraphy of the space between *rooms 17* and *20* was as follows. Beneath a thin turf layer (horizon IA) there was a dense, dusty, and ashy layer, up to 55-65 cm thick. In terms of its structure it was similar to horizon IB found throughout most of the courtyard. Horizon IA was almost entirely devoid of finds. It lay on the densely rammed surface of the entry-way, which was littered all over with broken and smashed pottery. Beneath this, and down to the surface of the bedrock, there was a very dense artificial levelling fill, consisting of finely crushed limestone mixed with earth and clay, and containing small fragments of pottery (mostly amphora walls), sea gravel, fragmentary shells of marine and land molluscs, and pieces of the claws and shells of crabs. Clearing of this layer by horizontal sections, about 1 cm thick, revealed that throughout the entire period that the gateway was in use, the surface of the entry-way was regularly covered with 'refuse' brought from other parts of the building.[71]

By the addition of the ancillary *rooms 18* and *19* in the inner range to the courtyard side of *rooms 17* and *20*, the length of the gateway passage was increased a further 3.25-3.35 m north-eastwards, its width in this section amounting to 2.10 m. Probably at the same time, a threshold made of five limestone slabs, 12-15 cm thick and 45-55 cm wide, was laid between the north-eastern pylons. It was not possible to establish for certain if any actual gates existed here.

Directly beyond the threshold described above, a narrow entrance to *room 18* (see above) was cut in the wall on the north-west or left side of the gateway. This entrance was 0.50 m wide, and in front of it was laid a small (0.8 × 0.9 m) pavement of undressed limestone flags, the existence of which indicates that the section of the gateway between *rooms 18* and *19* was unroofed.

In the fill of most of the gateway area, covering the ancient surface of the entrance passage, accumulations of large and small pieces of rubble, undoubtedly from the collapsed second storeys of the rooms on either side, were found lying alongside the walls. Beneath this rubble, and over the entire ancient surface of the gateway, an accumulation of broken, smashed, and trampled vessels was uncovered in the thickness of a thin ashy intercalation (3-10 cm thick). The pottery found here included a large bowl (mortar) of Chersonesean production (**C 188**), fragments of at least four Chersonesean, two Herakleian and one Amastrian amphorae, and numerous fragments of vessels of other types.

All told, over a thousand ceramic fragments were found in the course of clearing the layers inside the gateway. These fragments are distributed as shown in Table 7.

The fragments of amphorae and other ware found inside the gateway are most probably related to the accumulation of artefacts uncovered in the southern corner of the courtyard (accumulation 5: see the description of the courtyard below). This is particularly indicated by fragments of two stamped Amastrian amphorae (**Ad 77**, **Ae 115-116**, **H 12**), different parts of which were found both inside the gateway and in square G-6 in the courtyard.

Courtyard (Pls. 38-39). The inner courtyard, round the periphery of which all the rooms were situated, was fairly large. By the time of the destruction of the building, the length of the courtyard, from the gate along the central axis of its ground plan, amounted to 22.5 m, and its width varied in different parts from about 23 to 26 m.

The ancient surface of the courtyard was of earth. During its clearing, the following structures were uncovered: stone pavements, traces of posts (or uprights), and a well.

Table 7. Distribution of the pottery fragments found inside the gateway according to types and production centres.

Material	Production centres						
	Cherso-nesos	Sinope	Herakleia Pontike	Amastris	Uniden-tified centres	Local pottery	Total
Tiles, total		8					8
stamped specimens		1					1
Amphorae, total	437	100	26	15	84		662
stamped specimens	1		1	1			3
Commonware:							
Closed shapes	170	5			37		212
Open shapes	32						32
Cooking ware					5		5
Grey-ware vessels					9		9
Black-glazed vessels					21		21
Handmade pottery						138	138
Total	**639**	**113**	**26**	**15**	**156**	**138**	**1087**

Stone pavements (Pl. 12). The paved areas may be divided into two subgroups: (*a*) pavements in the form of narrow paths or rectangular areas in front of the entrances to rooms in the first row; (*b*) pavements of various types in front of the entrances to rooms in the inner range. All the pavements were made of undressed flags of limestone of different types. A number of paved areas of subgroup (*a*) were later covered by the floors of rooms added or constructed in the inner range. In the particulars given below, the pavements are described according to their subgroups – in counterclockwise sequence, beginning from the eastern corner of the courtyard.

Pavements of subgroup (a) in front of entrances to rooms in the first (or outer) range

1. Remains of a partially removed pavement of limestone flags in front of the entrance to *room 2*. The precise dimensions were impossible to determine, though, judging by the flags preserved *in situ*, this was probably a narrow paved path running diagonally towards the centre of the courtyard. The remains of the paving were covered by the floor of *room 35* (square Zh-2).
2. A finely preserved path of flagstones in front of *room 3* (square E-2); Width about 1 m., length up to 4 m. This path also ran towards the centre of the courtyard. For filling the interstices between slabs, fragments of Sinopean tiles were used; one of these bore a stamp (**Ab 7**).
3. A short flagged path in front of *room 6* (square V-2); width 9 cm, length about 1.5 m. This path also ran towards the centre of the courtyard.

4. Remains of a paved area (?) or path (?) in front of the, subsequently blocked-up, original entrance to *room 7* in the northern corner of the courtyard. Square B-2. Two flat flagstones beneath the floor of *room 15* have been preserved.
5. Remains of a partially removed pavement in front of the entrance to *room 7* from the later *room 15* (Square B-2). The precise dimensions were impossible to determine (but approximately 1 × 1 m). This section of paving was subsequently covered over by the floor of *room 15*.
6. Remains of a partially removed pavement (?) in front of the blocked-up entrance to the south-western part of *room 7* (Square B-2); width about 1 m, length impossible to determine.
7. A very carefully laid path paved with large flagstones, in front of the entrance to *room 12* (the sanctuary of Demeter and Sabazios) in the western corner of the courtyard (squares B-6 – B-7); width 1.0-1.10 m, length about 3 m. This path ran towards the centre of the courtyard (the well) being oriented at an angle of precisely 45° to the adjacent sides of the courtyard. The interstices between the flagstones were filled with small fragments of amphora walls (from Herakleia, Sinope, and other, unidentified, centres), small wall fragments of pithoi, and fragments of flat Sinopean tiles, one of which bore the remains of a stamp with the name of the astynomos *Histiaios* (see **Ab 5**). This pavement subsequently became part of the floor of *room 14* (the sanctuary of Herakles) added later, but even so it was well maintained at all times, and, unlike the rest of the floor of *room 14*, it was not plastered over with adobe.
8. Beneath the floor of *room 25* (in the second row) a few limestone slabs were uncovered lying on the ancient topsoil and laid in a single straight line (square Zh-6-7). Their position suggests that in front of *room 28* there once existed a paved path that was similar to those leading from the other corner rooms (*2*, *7*, and *12*). This, however, is impossible to prove.
9. In front of the blocked-up entrance to *room 33* there was a well-preserved area (1.3 × 1. 15 m) paved with stones (square Zh-3).
10. Beneath the floor of *room 34*, in front of the entrance to *room 1*, two limestone slabs were laid on the surface of the ancient buried soil. Their position suggests that here, too, we are dealing with the remains of a stone pavement that was later removed (square Zh-2).

Paved areas of subgroup (b) in front of rooms in the second (internal) row

1. Pavement in front of the entrance to *room 15* in the northern corner of the courtyard, consisting of a number of carelessly laid flagstones (square B-2).
2. Pavement in front of the blocked-up entrance to *room 18* on the south-western side of the courtyard (square V-6), in the form of a small rectangular area (1.2 × 1 m) paved with small flagstones. A smashed handmade pot was found lying on its surface.
3. Pavement in front of the entrance to the southern corner of *room 18* (from the gateway passage) (square G-7). This was a rectangular paved area similar to pavement 2 (*b*) above; dimensions 0.9 × 1 m.
4. A similar paved area in front of the entrance to *room 19* on the south-west-side of the courtyard (square D-6); dimensions 1.5 × 1.1 m.
5. Another similar paved area in front of the blocked-up entrance to *room 21* on the south-west-side of the courtyard (square D-6); dimensions 1.5 × 1.45 m. This lay adjacent to pavement 4 (*b*) above.

6-8. Three pavements in the southern corner of the courtyard, probably dating from different periods but finally making up a single paved area in front of the entrances to *rooms 23*, *25*, and *27* (squares E-5 and E-6) – though even then it remained possible for the borders

that separated the three sections to be roughly determined. Probably the earliest (?) section was a path, about 1.0-1.2 m wide and 4.5 m long, which led diagonally from the doorway of *room 25* towards the centre of the courtyard at angle of about 45°.[72] Contiguous to this lay a path paved with large flagstones in front of the entrance to *room 23* (an entrance that was later blocked-up with rubble); the width of this path was about 1 m, the length about 2 m, and it too was angled towards the centre of the courtyard. To the north-east of the first path, in front of the entrance to *room 27*, lay the third pavement – an area of irregular outline paved with flagstones of different sizes; dimensions 2.5 × 3 m.

The interstices between the flagstones of the pavement (6-8) were filled with a refuse-containing soil including small fragments of various pots (mostly amphorae) and Sinopean tiles; among the latter there was a fragment with the stamp of the astynomos *Diophantos* (**Ab 1**).[73] In addition to the foregoing, a Chersonesean copper coin (**I 3**) was found in a chink in front of the entrance to *room 27*.

9. A path, paved with flagstones carelessly laid straight onto the ancient-topsoil surface, and issuing perpendicularly from the entrance to *room 36* (square E-5); dimensions about 1 m wide and 2.2 m long.

B. Traces of setting for uprights. Positioned along the north-eastern side of the courtyard, between *rooms 15* and *35* (squares G-2, D-2, and E-2), were found three post-holes, 15-20 cm in diameter, and sunk down as far as the surface of the bedrock. On the surface of the courtyard they were surrounded with small stones, a feature that actually enabled us to find them. The post-holes were arranged in a single straight line at a distance of 2.20-2.25 m from the front walls of *rooms 3-5*. The intervals between the centres of the post-holes were in the range 4.30-4.40 m. Another similar post-hole, its top also surrounded with stones, was discovered on the boundary between squares E-4 and Zh-4, at a distance of 2.8 m from *room 32* on the south-eastern side of the courtyard. No other pits outlined with stones round the top were reliably identified, though some indirect signs suggestive of two more were recorded in squares V-2 and G-2, opposite the entrance to *room 5*, on either side of the centre-line of the doorway. These continued the same straight line as that traced by the first three post-holes described above, but the interval between their centres was about 2.00-2.20 m – and the same distance intervened between the more south-easterly of the pair and the closest of the post-holes surrounded with stones, in square G-2.

The appearance of these post-holes suggests that they served for setting up certain wooden post or uprights, probably for supporting the roofs of sheds or galleries extending along the north-eastern and south-western sides of the courtyard. Judging by the diameters both of the post-holes and of their stone surrounds, the posts they supported must have been about 8-10 cm thick at the base.

C. Ash-pit. The western corner of the courtyard in square B-6, *i.e.* the angle between the walls of *rooms 11* and *14*, was occupied by a rather small, extremely diffuse ash layer – a typical refuse dump. Its maximum thickness (in the very corner) amounted to 70 cm, and it was mainly composed of ash and small bits of charcoal mixed with a great quantity of other very miscellaneous materials. Predominant among the latter were fragments of various vessels and other objects broken and thrown out in antiquity (see the Concordance, square B-6). In the thickness of the ash layer, there were numerous shells (both whole and fragmentary) of marine molluscs – mostly mussels (*Mytilus galloprovincialis* Lam.), scallops (*Pecten ponticus* B. Det.), oysters (*Ostrea taurica* Kryn), and clams (*Venus (Chamelea) gallina*) – as well as pieces of the claws and shells of crustaceans: *e.g.* stone crab (*Eriphia spinifrons* [Herbst.]) and floating crab

(*Portunus holsatus* Fabr.). The ichthyofauna was represented by finds of bone-plaques of sturgeon (*Acipenser* sp.), and 'sea-fox' skate (*Raja clavata* Pal.), bones and bone-plaques of brill (*Rhombus maeoticus* Pal.), and scales of grey mullet (*Mugil* sp.); the calcined vertebrae of dolphin (*Delphinus delphis ponticus* Brab.) were also encountered, and shells of the vineyard snail (*Helix*) were fairly common. Bones of birds and animals were severely crushed and mostly calcined; they were thus unidentifiable, except for a small number of bones of sheep and goats and large ruminants (presumably cows).

The refuse, it seems, was periodically removed outside the confines of the building, and the ash-pit as here described, was formed during the very last stage of the occupation of the house, *i.e.* not long before its destruction. This is indicated in particular by some fragments of handles of Chersonesean amphorae – two with remains of the stamp of the astynomos *Apollonios* (**Ae 4-5**), and one with the name of the astynomos *Kraton* (**Ae 59**) – the same magistrates that have been recorded in the amphora assemblage from within the building.[74]

D. Household enclosure. This enclosure was built in the angle formed by walls of *rooms 33* and *34*, in square Zh-3 in the eastern part of the courtyard. Its ground plan was a sector of a circle with an inner radius of 1.05 m, it was partitioned off from the yard by a small wall, 40 cm thick, built of rubble held together with a clayey mortar (only the foundation was preserved). Inside, the enclosure was floored with densely rammed, finely crushed limestone mixed with clay. The inner space was filled with grey, ashy soil; no artefacts were found there.

This was the only 'enclosure' of circular shape within the confines of the building, and the only one situated outside, rather than inside of the rooms;[75] however, it *was* probably roofed, as indicated by the presence nearby (outside *room 32*) of a small post-hole for erecting an upright (see above).

The well (Pl. 40). The well is located in the very centre of the courtyard, straddling the boundary between squares G-4 and D-4, and is cut into a bedrock to the depth of 3.05-3.10 m from its surface. The well-mouth is of rectangular plan measuring 1.70 m × width 0.85-0.90 m, though the shaft widens slightly towards the bottom, where the corresponding dimensions are 1.80-1.95 × 1.20 m. The water level in the well is on average 2.40 m below the surface of the bedrock. In different years it varies within a range of at least 20 cm.[76]

At the depth of 0.8-1.8 m, the shaft cuts through a layer of soft and loose limestone riddled with holes, and round the entire circumference of the wall of the well there are deep natural cavities running 0.8-1.2 m downwards through the thickness of the layer. It is, in fact, directly below these cavities that the modern, very rich water-bearing horizon lies in a denser limestone/shell-rock.[77]

At present, the water in the well is brackish because of the formation of the salt Lake Panskoye and the rising of the latter's water level. Depending on annual and seasonal variations, the salt water of the lake, the level of which coincides almost exactly with that in the well,[78] pervades the water-bearing horizon and carries salt into the water of the well. In antiquity, when the lake did not exist (see Appendix I for details) this water must have been absolutely fresh.

On each of the longer sides of the well-mouth, mortises of a complicated form and 16-18 cm deep were cut into the rock of the courtyard surface. These were probably intended for anchoring the base of some device for lifting water and the same was evidently the purpose of two pairs of oval depressions cut into the longer sides of the well to a depth of 55 cm from the surface. Their centres were set 25 and 80 cm from the northern (and correspondingly) the western corner of the well, and they must have served for fixing two wooden beams, about 15 × 10 cm in cross-section, across the well-mouth.

The well was empty of soil down to a depth of about one metre. Below this level, there was a layer of sedimentary soil, washed down from the edges of the well-mouth (horizons IA and IB); this contained pottery fragments and showed signs of modern digging as well as a partial clearing.[79]

Below the depth of 1.9 m, the well was completely blocked with stones of various sizes. In the humus-containing earth filling between the stones, fragments of pottery of the same types as those found during excavation of the building were constantly encountered. At a depth of about 2.50 m – *i.e.* 10-15 cm below the water level – bovine (cow) bones were found lying in normal anatomical order beneath the stones or higgledy-piggledy amongst them. Directly beneath these, at a depth of about 20-30 cm below the water level, there were two human skeletons: a woman of 18-20 years and a child of 8-10 years old.[80] As far as could be judged in the process of lifting the parts from under the water, the woman's skeleton was on its back and lying diagonally across the well, the skull being in the southern corner; the bones of the left arm extended alongside the body, but it was not possible to determine the position of the bones of the right arm; the leg bones were scattered about in disorder. The child's skeleton, poorly preserved, was lying alongside the south-western wall of the well, probably on its side with the bones of the legs scattered about over a widish area. Among and above these human bones there were also individual bones of both domestic animals (horse, cow, sheep, and goat) and wild ones (large jerboa), as well as bones of wild birds. As concluded by A.K. Kasparov (Appendix V), these were probably the remains of food. Pieces of wooden blocks or beech timbers also were found here.

The bottom of the well was covered with a layer of a pure, dark silt, 10-20 cm thick, with a rather small content of pottery fragments, mostly amphorae. In addition to the pottery, shreds of stems and leaf-stalks of cultivated vines (*Vitis vinifera* L.) and pieces of wood specimens with traces of working and charring were uncovered in the silt. Among the wood, downy oak (*Quercus pubescens*) and tree-juniper (*Juniperus excelsa*) have been identified.[81] It is possible, that these fragments could have been the remains of some wooden structure associated with the well, which got into this layer later.

The investigation of the inside of the well allows us to envisage, though with a certain degree of caution, the following process the formation of its fill. The lower silt layer formed, evidently in a natural way, during the period when the well was in normal daily use. Then, during the sacking of the building or shortly after it, the woman and child, perhaps freshly murdered, were thrown into the well and pressed down under the body of a cow that fell (or was thrown) on top of them. Occasionally thereafter, animal food remains were disposed of here, and finally, the well was blocked with stones.[82] The most natural supposition would be that these were the actions of the invaders who had seized and destroyed the building.

Distribution of artefacts over the surface of the courtyard. The whole of the vast space occupied by the courtyard, an area of over 500 sq m, presented a scene of terrible devastation. The entire surface was literally strewn with the scattered fragments of broken, smashed, and trampled ceramic vessels of various types, along with querns and stone louteria broken to pieces, the remains of metal objects, and fragments of terracottas, *etc.* – *i.e.* all those things which had been kept in the various rooms of the building and been used by its inmates in their everyday activities.

Because of the enormous number of materials recorded in the course of clearing the courtyard, it is impossible to present a full enumeration and description of them here. However this is not actually necessary, since the general planigraphic distribution of the major part of the objects collected from all the twenty-seven squares of the courtyard is given in the Concordance, and detailed descriptions of artefacts according to their groups are included in

catalogues appended to the corresponding sections in Part II below. Therefore it will suffice to present here only a *summary* review of the distribution and types of the materials found in the courtyard area.

The distribution of finds was irregular throughout the area of the courtyard. Although there was no square entirely devoid of fragments of amphorae and various other vessels, or indeed other types of objects, certain large accumulations or 'fields' covered all over with broken and smashed pottery stood out. In origin, these accumulations were undoubtedly related with this or that group of rooms surrounding the courtyard. In was possible to distinguish six such large accumulations.

Accumulation 1. This accumulation, found in the northern corner of the courtyard, occupied the southern quarter of square B-2, the eastern quarter of square B-3, and part of the western sector of square V-3. The area over which the materials were scattered amounted to about 25 sq m. The highest concentration of broken and smashed pottery, mostly amphorae, was observed in square B-2. Among sherds of amphorae were fragments of five stamped Chersonesean amphorae, of which three bore the name of the astynomos *Dioskouridas* (**Ae 34**, **Ae 44**, **Ae 51**), one a monogram stamp EYA (**Ae 89**)[83] and one an unreadable stamp (**Ae 75**), there were also some fragments of a Sinopean amphora stamped with the name of the astynomos *Theodoridas* (**Ae 102**). All these amphorae had probably been kept in the same storeroom, and on the basis of an analogy with the storeroom situated over *room 3* (see above), it may be confidently assumed that in this case the amphorae had been kept on the upper storey above *room 7*, from where they were then thrown out. An indirect confirmation of this is the discovery of certain other remains that evidently belonged to the same assemblage – namely fragments of two Chersonesean amphorae with similar monogram stamp EYA on their handles (**Ae 95-96**) and a fragment of neck with a monogram stamp, all of which were found in the debris of the external walls of the building at both ends of *room 7*, in squares A-3 and B-0. Thus we may suppose that at least nine stamped amphorae had been kept in the storeroom above *room 7*. Moreover, the roll of names of Chersonesean astynomoi on their stamps being close to that in the case of the amphora storeroom above *room 3*, we may further suppose that the amphorae from *accumulation 1* and *room 3* probably came from one or two large consignments of goods brought to the house in ceramic containers of Chersonesean production.

Thoroughly mixed into the accumulation among the amphora fragments were sherds of various plain ware: jugs and bowls (*cf.* **C 5**, **C 36**, **C 73**, **C 76**, **C 172**, **C 254**), as well as a handmade decorated pot.

Accumulation 2 (Pl. 41). This accumulation was found in the north-eastern sector of the courtyard, directly in front of *room 5*. It occupied square G-2, the northern part of square G-3, the southern quarter of square V-2, part of the eastern quarter of square V-3, and extended about 1 m along the north-western boundary between squares G-2 and G-4. The area over which the materials were scattered amounted to more than 50 sq m.

The accumulation is notable for two points in particular: first, the pottery is very thoroughly crushed; and secondly, the fragments are regularly dispersed over the entire area, sherds from the same vessel being sometimes located at a considerable distance from each other, and many fragments being found in altogether different parts of the courtyard.

Moreover, *accumulation 2* differs from *accumulation 1* above in the types of the finds brought to light. Parts of the walls of amphorae (including stamped ones) trampled into small pieces were scattered about over the entire area, out of twenty-four handle fragments from stamped amphorae, twenty-one stamps were those of Chersonesean astynomoi – namely

Apollonios (5), *Bathyllos* (5), *Dioskouridas* (4), *Kraton* (1), *Xanthos* (3), *Sokritos* (1), and illegible (2). Other centres are represented by two stamps from Sinope with the names of the astynomoi *Hephaistios* and *Mnesikles*, and a Thasian stamp with the name of *Bion*. As is evident from the greater variety of names, this assemblage of amphorae is not so compact as those from *accumulation 1* or *room 3*. In contrast to the latter assemblages, there are no EYA monogram stamps here. It may therefor be supposed that the amphora set from *accumulation 2* formed gradually, over a fairly long period. Moreover, there is one other feature that is worthy of note: aside from three graffiti (**H 28**, **H 37**, **H 38**), fourteen fragments had dipinti of a uniform type in the form of the letters B and BIC (**H 45-46**, **H 48-54**, **H 56**, **H 58-59**, **H 65**, **H 71**); all these graffiti and dipinti were drawn on Chersonesean amphorae. Taking all the above features into account, we may suppose with a fair degree of probability that all the remains of amphorae from this accumulation belonged to a single large store of ceramic containers. The close parallels with the other storerooms (*rooms 3*, *12*, and *13*) suggest that this store too must have been kept on an upper floor, possibly above *room 5* or, more likely, above a room adjacent to it (*room 4* or *6*?).

Another peculiarity of *accumulation 2* is the exceptional composition of the black-glazed ware. For scattered about here there were parts of two or three very large black-glazed kantharoi (**B 4-6**) and numerous fragments of small kantharoi, including one fragment with a graffito (**B 75**, **H 10**). There were also fragments of at least ten or twelve bowls (**B 102-103**, **B 111-112**, **B 116-118**, **B 127**, **B 136**, **B 139**, **H 18**), and of a large amount of shallow plates (fragments of 20-25 items according to our calculations) (**B 147**, **B 150-155**, **B 163**); one of the latter had a graffito (**H 18**). Finally, there was a large plate with the graffito ΔAMOC on the bottom (**B 147**, **H 32**).

While this accumulation contained many fragments of variously shaped plain vessels for everyday use – pelikai, jugs, numerous bowls, and so on (not less than 25-30 items) – as well as a ceramic lamp, and objects of metal or stone (see Concordance, squares B-3, V-2, V-3), what emerges as a point of special note is the high concentration of 'ceremonial' black-glazed tableware, among which was an extremely distinctive 'service', composed of a number of standard small plates, a large plate, and kantharoi, both large and small. This ceremonial 'set of ware', so compact in terms of its composition, stands out distinctly from any other sets of ware, both from rooms and courtyard accumulations alike, and may justly be termed unique. By all appearances, and taking into account the graffito δαμόσ(ιον) scratched on the bottom of a large plate, we may suppose that the 'service' was intended for communal meals taken be the inmates of the house. Possibly the plain tableware served the same purpose, though it might have had some auxiliary application – for instance in the preparation and/or cooking of food.

If our supposition is justified, then the black-glazed 'service' must have been connected with the room above *room 5*. Indirect evidence of this room's importance is provided by its focal position opposite the gateway (almost in the middle of the north-eastern side of the courtyard, in the outer range, by its considerable dimensions (its area being second only to that of *room 7*), by the presence of an interior staircase leading to the upper floor, and finally, by its having the largest hearth in the building (*cf.* the descriptions of individual rooms above). The specific position of *room 5* on the ground plan of the building and all the features listed here suggest that a special 'dining-hall' for communal meals may have been situated above it. This hall might have been identical in plan to the ground-floor room below it, but it is also possible that it was considerably larger in area, perhaps extending above *room 4* and/or *6*.

The store of amphorae mentioned above must also have been functionally connected with the supposed purpose of the second-storey room. In my opinion, the series of identical dipinti on amphora fragments, and the numerical graffiti too, find in this case their most plau-

sible explanation. V.F. Stolba has quite convincingly attributed these dipinti to the 'client names' group, and assumes them to be trade marks.[84]

It is therefore quite possible that a single individual from among the inmates of the house was responsible for the procurement of stores and ordering of wine (Chersonesean, one might suppose) to provide communal meals for the whole household. We cannot, however, rule out the alternative explanation – namely that we are dealing with the marks of a merchant who supplied the consignments of goods that had been ordered.

Accumulation 3 (Pl. 42). This accumulation was found almost in the centre of the courtyard, north-west of the well and opposite *rooms 8* and *9*. It completely filled squares V-4 and G-4 and the north-eastern half of squares V-5 and G-5. The total area was about 70-75 sq m.

This accumulation was the greatest both in density and in quantity of broken objects. In the central area of the accumulation (squares V-4 and G-4), sherds mixed with other materials were found lying in a solid layer, up to 10-15 cm thick.

The most numerous group was composed of fragments of amphorae, including stamped ones. It was not possible to determine the *total* number of vessels, but undoubtedly these would have been several dozen; and a sufficiently accurate *subtotal* of stamped amphorae was arrived at on the basis of stamps found on the handles and necks of the vessels. The largest such group comprised stamps on Chersonesean amphorae; out of twenty-two examples, nineteen bore the names of astynomoi, as follows: *Apollonios* (10), *Bathyllos* (3), *Dioskouridas* (2), *Eukleidas* (1), *Xanthos* (3); three other stamps in this group had monograms: EYA twice on handles, and ΠA once on a neck fragment. Other centres were represented by three Sinopean stamps with the names of the astynomoi *Mikrias*, *Mnesikles*, and *Theupeithes*, as well as a monogram stamp (TIB?) from some unknown Mediterranean centre.[85]

Along with fragments of amphorae, the accumulation contained a great number (several thousands) of fragments of commonware of practically every type recorded inside the rooms and in other areas of the courtyard. They were represented by closed shapes (jugs, cups, beakers, flasks, unguentaria), by open shapes (mortars-louteria, bowls, and fish-plates), and by cooking ware (pans); there were also numerous fragments of handmade ware. In addition, fragments of terracottas and other ceramic objects, parts of querns, and metal objects were found here (for details see Concordance, squares V-4, V-5, G-4, and G-5 and the descriptions of artefacts presented in the corresponding sections and catalogues in Part II).

The identification of the original location of the dumped objects that formed this accumulation is more difficult than in the two previous cases. It remains unclear whether they originally composed a single complex, which had been kept in one particular room, or were just things brought out from various different rooms and thrown onto a dump here. My own opinion, influenced by the fairly homogeneous composition of the stamped examples, is that the amphorae come mostly from one individual store and that this store, like the other reliably identified ones (*cf.* above), was kept on the upper storey above a single room. In the case of the other materials, it is difficult to say anything definite. The accumulation was located to the north-west of the well. The layer of sherds was at its maximum concentration and thickness opposite *rooms 8* and *9*, its north-western edge lying some 3 m from the socle of the courtyard wall of these rooms. It is thus quite probable that at any rate the storeroom where the amphorae and some other vessels were kept was on the second storey above these rooms. It is also possible, though can hardly be proved, that most of the other objects were thrown out from rooms situated along the north-western side of the courtyard.

Accumulation 4. This was found in the western corner of the courtyard, beside the walls of *rooms 10* and *11* (squares B-5 and B-6). It covered the ash-pit (refuse dump; see above) and

consisted of fragments of amphorae and other vessels, probably thrown out from both the ground and upper floors of *rooms 10* and *11*. Among the recorded items are fragments of the walls, rims, handles, and bottoms of at least six Chersonesean and two Sinopean amphorae. Preserved on fragments of six handles of Chersonesean amphorae were the stamps of astynomoi, four with names – *Apollonios* (3), *Herakleios* (1), illegible (1) – and one with the monogram abbreviation EYA (**Ae 3**, **Ae 4**,[86] **Ae *5***, **Ae *55***, **Ae 76**, **Ae 90**). On one of the fragments of Chersonesean amphorae there was a dipinto (**H 44**).

It is unlikely that the fragments of amphorae from this accumulation composed a single assemblage (*i.e.* a separate store of ceramic containers). Probably, the same is true of the extremely numerous fragments of pottery of other types (for a detailed description see Concordance, squares B-5 and B-6, and also Part II).

Accumulation 5. This accumulation was located in the southern corner of the courtyard with two of its edges lying against the walls of rooms in the second row of the building: *rooms 19*, *21*, and *23* on the south-western side and *rooms 26* and *27* on the south-eastern. The area of the accumulation occupied the north-eastern halves of squares D-6 and E-6, the southern half of square D-6, and the major part of square E-5. The total area over which the materials were scattered amounted to 58-60 sq m. Thus, this accumulation was the third largest in terms of the quantity and density of artefacts.

As in the other accumulations already described, fragments of broken amphorae predominated. It was impossible to evaluate with any real accuracy the amount of unstamped vessels, but on the basis of complete-profile parts found, it may be supposed that there were at least two or three dozen of them. As in the other accumulations, first place was taken by fragments of amphorae from Chersonesos, thirteen stamps with the names of astynomoi were preserved on handle fragments as follows: *Bathyllos* (2), *Dioskouridas* (3), *Eukleidas* (1), *Kotytion* son of *Ariston* (1), *Xanthos* (2), virtually illegible examples (3), the monogram EYA (1). A particular feature of this set is that, as in the case of both *accumulation 1* and the store in *room 3*, the stamps of *Apollonios* were absent. Also, the composition of the assemblage of stamps on amphorae from other centres differs from the accumulations described above. In addition to a couple of poorly preserved but nevertheless identifiable Sinopean stamps, there were also found here the neck of a Herakleian (?) amphora with a relief stamp KEP (**Ae 121**), and parts of two amphorae from unknown centres: one of these had a mushroom-shaped rim and the stamp ΣΑΓΓΑΡΙ on its handle (**Ae 135**), and a handle fragment from the other bore the name ΑΝΤΙ/ΟΧΟΥ (**Ae 134**). Two other fragmentary stamped amphorae, from Amastris, found in square G-6 (**Ae 115-116**), possibly belonged to the same assemblage of containers.

Sorting carried out in the field, yielded hundreds of amphora fragments. From among these it was possible to identify the remains of individual amphora of the following types: at least ten or twelve Chersonesean ones (five of them stamped), three Sinopean (two with stamps), one Herakleian (?) with a relief stamp, one from Thasos (or some other North Aegean centre of the 'Thasian Circle'), three from an unknown centre (Samos?) with mushroom-shaped rims of the Solokha-I or (according to Zeest 1960) Ust'-Laba type, one or two from an unknown (probably Mediterranean) centre, one from Korinth (?), and one presumably Herakleian amphora with a relief stamp. In addition to the stamps, a graffito and two dipinti in form of B (**H 47**) and E (**H 13**, **H 62**) were recorded on three Chersonesean amphorae; there were also three dipinti on three Sinopean amphorae (**H 66**, **H 69**, **H 76**), and one on an amphora of the Solokha-I type (**H 60**).

The details of ceramic containers presented above clearly indicate that the broken amphorae from this accumulation differ considerably in their composition at variety (types of the vessels and production centres) from those in the accumulations previously described.

There is little doubt, that this assemblage of ceramic containers must have come from the two blocks of rooms located in the southern corner of the building: the six-room block composed of *rooms 23-26*, and *28*, *29* and the block made up of *rooms 27* and *30*. It is difficult to separate out materials from the individual blocks; however, judging by the density of distribution of artefacts across the grid squares in question, it seems to me that most of the amphorae must have come from the six-room block. This is also suggested indirectly by the discovery of fragments of stamped and unstamped amphorae outside the confines of the building, beyond the external wall of the corner *room 28* (square Z-7) – some came from Chersonesos (stamped with the name *Bathyllos* and the monogram EYA) and others from Sinope (with the name *Mnesikles*).

In terms of its composition all the other material generally correlates with the material from *accumulation 3* (for details see Concordance, squares D-5, D-6, E-5, E-6, and descriptions of the artefacts in Part II). Of particular interest are the two unusual portable stone altars in the form of birds (**G 5-6**). Both were uncovered among a heap of smashed vessels in front of the entrance to *room 25*. Close to the entrance to *room 27*, two Chersonesean copper coins (**I 2-3**) were found lying together on the surface of the pavement, and a silver spiral pendant was discovered nearby.

Accumulation 6. The area of this accumulation occupied square E-3 (completely), the southern sector of square D-3, the north-eastern half of square E-4, and the 'half-square' Zh-3 adjacent to the walls of the building. This area took up a relatively small part of the courtyard in front of *rooms 32*, *33*, and *34*. The quantity of fragments of amphorae and other ware in the accumulation was also relatively small (in comparison to the other accumulations).

According to field computations (made on the basis of complete-profile parts), the fragments of amphorae belonged to not more than 10-15 minutely crushed vessels. Three handles of Chersonesean amphorae bore the stamps of astynomoi, namely: *Alexandros* (1: **Ae 1**) and *Bathyllos* (2: **Ae 21**, **Ae 30**). On three fragmentary handles of Sinopean vessels the stamp of *Mnesikles* was preserved, and on another that of *Theupeithes* (**Ae 107-108**, **Ae 111**, **Ae 103**). Three handle fragments of some unknown, probably east Mediterranean, centre included monograms in their stamps (**Ae 138**, **Ae 140-141**). Clearly, therefore the typological composition of the remains of this assemblage of ceramic containers differed from the other five accumulations described above – in particular, this accumulation, which was evidently related to the four-room block in the eastern corner of the building (*rooms 1*, *32-34*), contained extremely few Chersonesean amphorae.

As regards the character of the pottery other than amphorae, this in general did not differ from that of the pottery found in the other accumulations, except for *accumulation 2* (for details see Concordance, squares E-3, E-4, Z-3, and the descriptions in Part II).

Close to the previously described household 'enclosure', the remains of a plough were found lying on the earthen surface of the courtyard: these consisted of an iron plough-tip, some large iron nails with broad heads, and some fragments of rods. In the course of clearing the remains, it was also possible to discern traces of the main wooden parts of this implement.[87]

DISCUSSION

PRELIMINARY NOTES

The excavation results described in the preceding section have provided a reasonably reliable basis for tracing out a relative chronology of the evolution of the ground plan and elevations of building U6 from the time of its construction till its catastrophic destruction; and at the same time have enabled us to establish with a fair degree of accuracy the actual dates of the construction and destruction of the house. Moreover, the information necessary for a reasonably precise reconstruction of the building's external appearance and internal structures in different periods, has also been obtained. Finally, the excavations have made it possible for us to reconstruct the system of linear measures used by the architect and builders of the house.

As will be shown below, the period during which the building was occupied was relatively short, yet in the course of that period the interior plan of U6 underwent constant change, albeit without any alterations of its outline and general exterior appearance. The way in which the ground plan became more complicated was solely due to adoption of new layouts for certain existing rooms and the addition of new rooms to the latter – developments that seem to reflect certain changes in the composition and hence the status of the inmates.

ANALYSIS OF THE POSITION OF THE HOUSE WITHIN THE SPATIAL AND CHRONOLOGICAL SETTING OF THE SETTLEMENT

Building U6 – the largest of the building complexes excavated here – was constructed at the eastern edge of the settlement, in an area that had previously remained unoccupied as shown by the plan and stratigraphy of the site. The ruins of the building lie on a thin layer of soil (horizon II) showing signs that shrubs (or trees and shrubs) had once grown there – though the area was devoid of any traces of economic exploitation or agricultural use. The soil layer had formed on the underlying bedrock surface, and the relatively few fragments of pottery found in this layer cannot be assigned to any precisely defined time-span; they are represented in the main by very small sherds of walls and rims of amphorae from Herakleia Pontike (the most numerous), walls of amphorae from Sinope and Thasos (or the Thasian Circle), and other, unidentified Mediterranean centres, and by small pieces of Sinopean and 'Laconic' type tiles. Of special note in the layer were fragments of Chersonesean amphorae of types I-A-1 and I-A-2 in Monachov's classification, datable to about 350-325 B.C.[1] Thus the ceramic assemblage from the soil layer is in general confined within the limits of the 4th century B.C.[2] A contra-indication would seem to be the three Chersonesean coins found in the uppermost horizon of the layer, beneath the adobe floors of *rooms 22* and *24* (**I 4**, **I 6**, **I 8**). According to the chronological schemes developed by different authors such coins are usually dated to the period covering the late 4th to the early 3rd century B.C. However, I am inclined to suppose that in this case (as in many others), the archaeological context and stratigraphic position of these coins are rather an opportunity for defining more accurately certain dates of issue and periods of the circulation, than an occasion for dating a layer on the basis of finds which themselves need a more accurate dating. Clearly, we should accept both the hypothesis proposed by V.F. Stolba,[3] who, on the basis of certain other indications, dated one of the issues of this type of coin to the end of the 4th century B.C., and A.M. Gilevič's independent suppositions based on the stratigraphy of the site.[4]

Thus, the artefacts from soil layer suggest that the building was constructed within the period *c.* 320-310 B.C. in a previously unoccupied area lying to the south-east of the central part of the settlement with its already existing structures.

The building called U6 was built so that the axes of its ground plan corresponded exactly with those of the previously destroyed four-towered fortress (*tetrapyrgia*) in the central area U7 and likewise with the axes of a block of houses subsequently built upon the ruins of that fortress.[5] The orientation of U6 also coincides with the structures belonging to the first building period of house U10 situated to its south (Pl. 7).[6]

At first sight, it may seem that the architects blended building U6 quite successfully and accurately into the general spatial structure of the settlement, which even before the construction of U6 had had a regular plan oriented almost exactly (with a deviation of only 4°) on the four cardinal points. However, excavations at the northern, eastern, and southern edges of the site (including the block of houses in area U2, the part of house U10 belonging to its second building phase, and house U13[7]), as well as further analysis of the aerial photographs, showed that the axes of the ground plans of the structures situated in these areas, and also in the unexcavated area U1, deviate by12-15° from the 'exact' orientation (Pl. 6). Is this fortuitous?

Judging by the artefacts recovered, construction of the houses at the northern and eastern edges of the settlement took place in the second half of the 4th century B.C., *i.e.* after the destruction of the four-towered fortress. The earliest items from the ceramic assemblage are dated to about 350-325 B.C.,[8] the block of standard houses in area U2 being constructed at the same time and undoubtedly according to a common plan.

It seems that the edges of the settlement were built up before the construction of U6. This is also confirmed by analysis of enlarged aerial photographs, taken before the excavation began. That the plan of the building appeared brighter and in higher contrast in comparison with nearby structures (Pl. 5) is to be explained not so much by its dimensions (for the towered fortress was larger and its walls twice as thick, being well preserved to the height of over a metre on its three sides), as by the fact that it was the latest structure to be put up on the site.[9]

Hence, in finally defining both the position of the building on the ground plan of the settlement and the chronology of its construction we may outline the following major stages:

1. Construction of four-towered defences (fortress): about the turn of the 5th century B.C. (central area U7).
2. Partial destruction of the fortress: about 350 B.C.; subsequent construction upon its former site of blocks of small houses (350-325 B.C.?).
3. Erection of the monumental building U6: about 320-310 B.C.

Although situated at the edge of the settlement, U6 nevertheless occupied a dominant position, towering over the surrounding structures. This was not, however, just an architectural domination. For not only its dimensions and peculiar ground plan, but also the carefulness of its masonry, the existence of special rooms for storing amphorae or destined for use as sanctuaries, and a richness surpassing that of the other, ordinary houses, both in the central area and at the periphery, suggest that the building had a special functional significance.

Occupation of U6 lasted no longer than 50 ± 10 years, as suggested by the aggregate of the archaeological evidence published and considered in Part II of this book. Judging by the major assemblage of the artefacts and the latest objects, the catastrophic destruction of the house occurred within the first third of the 3rd century B.C., most probably about 270 B.C.

The total devastation and fire were the result of an attack, as indicated by finds of weapons – arrowheads, javelin-heads, and a *machaira* – broken and smashed objects thrown into the courtyard, and by the remains of three dead humans. I assume this attack to be connected with one of the invasion by nomads, namely Sarmatians, who, according to Diodoros (II, 43; 46) advanced from the east (from beyond the river Don) into Scythia and completely laid waste the latter.[10] Diodoros' information is supported by archaeological evidence, since it was during this period that the Scythian steppe culture suddenly disappeared and traces of the destruction of Greek rural settlements can be traced not only throughout the Western Crimea (the Chersonesean state) but also in the rural territory of Olbia at the lower reaches of Bug, and in the European part of the Bosporan empire in the Crimea.

It seems that the invaders stayed for a – probably short – time in the ruins of U6. This is suggested indirectly by two significant factors. The first is the osteological evidence from the well, where the composition of the animal species used for food is not typical of the settled population residing within the territory of a Greek state, but is, on the other hand, characteristic of nomads (*cf.* Appendix V). The second factor is the discovery that the well had been filled with the corpses of humans and animals and stones (undoubtedly done intentionally to poison the water) (see p. 73 and note 82).

It is also quite possible that certain inmates of the house, having survived the attack, later returned to the ruins for a short time. This, very guarded, supposition follows from the identification of a small, undoubtedly temporary, room above the ruins of *room 14* (see above p. 50, *room 14a*). It would be interesting to know if this makeshift room, with its slightly sunken floor and a carelessly built cross-wall closing the gap between the remains of earlier walls, was positioned purely by chance exactly over the sanctuary of Herakles.

The ruins of the building were later intermittently visited by man – from the 2nd century B.C. till our own day. This is indicated by isolated finds of fragments of a 'Megarian bowl', small fragments of walls of medieval amphorae of the 7th-11th centuries A.D., and pot sherds, including faience ware, of the 18th to early 20th centuries. These were all uncovered in topsoil layer (horizon IA) in the courtyard, and in the upper fill of the well.[11] In the neighbouring area U2, a medieval nomadic burial with a horse has been uncovered. Probably, at the end of the 19th or the beginning of the 20th century, when salt-works were in operation on the Sasyk Lake, some of the stone blocks were quarried from the external walls of U6 for use as building materials elsewhere.

Building periods (development of the spatial structure and ground plan of building U6)

Stratigraphically, and on the evidence of the structure of the wall bases and spatial and planigraphic changes, two major building periods at U6 are very clearly distinguishable. The first one comprised the period from the original construction of the building up to the time when annexes began to be added to the bulk of the rooms and the latter were themselves remodelled internally. The second period included a progressive modification of the internal plan. The upper chronological limit of this period of course is the sacking, burning, and ultimate destruction of all the structures. On the basis of observations made in the course of the excavations, it was possible to identify fairly reliably a number of successive discrete phases of construction within this second period. Finally, I have defined very arbitrarily a third 'building' period; this, it seems may most probably be connected with a very short interim that directly followed the destruction of the building. However, I will describe it further below, in its proper place.

The first building period

Ground Plan. The original building was strictly square in plan with a central courtyard, around the four sides of which a series of self-contained rooms were ranged in a single row. Each of the rooms had a single entrance and, with one exception, was not connected with any other room. All the entrances to the rooms were from the courtyard. The only entrance into the building from outside was located almost in the middle of the south-western side of the building and gave access directly to the courtyard.

According to external measurements, the building in the first period measured 34.5-35 × 34.5-35 m,[12] with a total area of about 1250 sq m. The major space was occupied by the courtyard, which measured 26.25 × 25.8-26.0 m along its central axes and covered an area of 682.5 sq m (accounting for almost 55% of the entire building). The well was cut in the centre of the courtyard at probably the same time as the building was originally constructed.

The structures around the perimeter of the courtyard occupied an area of about 567 sq m (*i.e.* about 45% of the total area) and had a standard depth of 4.20-4.25 m, the internal width of the rooms being 3.10-3.15 m. Ranged along the north-western and south-eastern sides of the courtyard, to the left and right of the gateway, there were twelve standard rooms – six on each side (*rooms 7*, *7a-11*; *1*, *29-33*). The width of these rooms varied from 3.6 to 4.1 m, the average area being about 11-12 sq m. As a rule, the entrances were located in corners of the rooms: in the eastern corners in the left (or north-west) wing and in the western corners in the right (or south east) wing (note the inverse symmetry). An exception was *room 7* in the northern corner of the courtyard, which had its entrance in the middle of the wall. Three other rooms (*20*, *22*, and *24*), with the same average area, were ranged along the south-western side of the courtyard, to the right of the gateway; these were each connected with the courtyard by an entrance in their northern corners. Two rooms located dissymetrically in the western and southern corners of the building (*rooms 12* and *28* respectively), and having correspondingly symmetrical entrances, were both of the same average area (about 14 sq m). Differing from any of the rooms described thus far were those ranged along the north-eastern side of the courtyard, directly opposite the gateway. They may be divided into two sections – the eastern and the western, the boundary between them being the central axis that divides the building into two and runs from south-west to north-east through the centre of the courtyard. In the right-hand section (looking from the gateway towards the opposite side of the courtyard) there were three self-contained rooms (*2-4*): two with an area of 14.7 sq m and one of slightly more than 16 sq m. In the left-hand section, almost in its middle, and directly opposite the gateway, was an entrance leading into the large *room 5* (about 23 sq m). Inside this room, there were already, during the first building period, a staircase leading to an upper floor and a very large fireplace. The entrance to the room was in the centre of its courtyard wall. Adjoining this room in the northern corner of the courtyard was *room 6*; however, the exact plan of the first-building-period structures located in the northern corner has remained unclear, owing to the remodelling carried out during the second building period and to the poor preservation of the masonry of the walls. Two suppositions are possible: *either* there were once two adjacent rooms here (*6* and *6a*), of about 16.4 sq m (like *room 4*) and 10 sq m respectively; *or* there was one very large room with an area of about 26 sq m.[13] Finally, on the south-western side of the courtyard, to the left of the gateway, there was a single block of two adjoining rooms (*13* and *17*) with a common exit into the courtyard.

Thus the total number of rooms at ground-floor level in the first building period was 24 or 25. Since traces of the existence of a second storey have been found throughout almost the entire range of the first-period structures round the courtyard, it may be supposed that the second storey amounted to the same number of rooms. Hence the building had a total of about fifty rooms.

Table 8. The hierarchical structure of the functional layout.

Hierarchical level	**Rooms (numbers shown on ground-plan)**	**Total no. of rooms at each level**	**Type**	**Purpose**	**Average standard area**	**Location in courtyard**
Ia	1, 7, 7a-11, 20 22, 24, 29-33	15	One-roomed	Individual Living-unit	11.6 sq m	North-west and south-east sides
Ib	2, 3, 28	3	One-roomed	Individual Dwelling	12.2 sq m	Eastern and southern corners
II	13, 17	2	Two-roomed block	Individual Dwelling	*c.* 22.5 sq m	Near the gateway and the sanctuary
III	4-6, (+6a?)	3 (4?)	One-roomed	Public?		Northern corner and north-east side of the courtyard
IV	12	1	One-roomed	Public sanctuary	13.55 sq m	Western corner, the lower tier of the tower

The ground-plan composition of the building combines signs both of an 'equivalently parallel principle' – seen in the layout of its one-roomed dwelling-units – and of a 'hierarchical principle' – seen in two-roomed dwelling-units and rooms of a large area (see Table 8).

The twelve small standard rooms facing one another along the left and right sides of the courtyard, as well as those on the right of the gateway, were probably individual living-units from the very beginning. This function is particularly indicated by a number of fireplaces or their remains preserved in the centres of the rooms and which were not moved during the subsequent building period. Possibly, the standard rooms *2*, *3*, and *28* situated in the southern and eastern corners of the courtyard and having slightly larger floor-areas (14.4-14.7 sq m) owing to the exigencies of the ground plan were also individual living-units. On the left of the gateway, there was the only example of a two-roomed dwelling-unit of higher status; and adjacent to this block, in the western corner of the building, was the three- or four-storeyed *room 12*, which possibly from the very beginning served as a communal sanctuary for the entire building (as indicated by the excavations; see above, pp. 45-50). Near its entrance in the western corner of the courtyard was an altar with a relief representing Herakles on the wall above it. Finally, to a special category should be assigned the large rooms situated at the side of the courtyard opposite to the gateway. Of those, *room 4* was probably intended from the very outset as a cow-house. One or perhaps both of the others (*rooms 5* and *6*), seem to have served certain purposes common to all the inmates of the building.

In the hierarchical, and in my view well thought-out, spatial and functional layout of the building, four groups of rooms can be identified as of different status and as very appropriately arranged around the courtyard according to their particular level of importance. The four status-levels can be ranked I-IV, as summarized in Table 8 above.

Such a layout probably reflects the social structure of the inhabitants rather than their property status. Hypothetically, and very cautiously, we may suppose that the building was constructed for a certain compact and homogeneous collective which made communal use of the sanctuary and the altar of Herakles in the southern corner of the courtyard together with the larger rooms *4-6* in the north-eastern range. The two-roomed living-unit may have belonged to the head of the collective. Everything noted, taken in combination with the dominating topographical position of the building at the site, suggests that the communal occupation of the house most probably had behind it both military and economic functions: on the one hand it provided a centre for the economic exploitation of the surrounding land, and on the other hand, it offered a substantial base for control of the settlement and the adjoining area.

Taking into account the fact that even in the first building period there were probably two storeys, and that judging by the location of the load-bearing walls the plan of the upper storey duplicated that of the lower storey, then there are good grounds to suppose that the total number of rooms in the building must have been about fifty (as noted above). Correspondingly, it is possible to calculate a hypothetical number of inhabitants.[15]

Parallels of the ground-plan composition. A number of sites, very similar (but not absolutely identical) to ours, both in dimensions (35 × 35 m) and ground plan, are known on the coasts of the Black Sea. The first two similar buildings were investigated by S.F. Strželeckij in the close vicinity of Chersonesos on the Herakleian Peninsula as early as the beginning of 1950s.[16] Both these buildings were single-towered structures, each of approximately the same area amounting to about 1250 sq m (*i.e.* just the same as U6); and both consisted of a large central courtyard with a number of rooms ranged round it in a single row. To these sites, might perhaps be added two buildings without towers and combined in a single block, which have been investigated by A.B. Kolesnikov at the edge of Cape Eupatoria (the 'Mayak' settlement in the vicinity of Kerkinitis).[17] One other house – by all appearances a contemporeneous one – has been excavated by V.V. Ruban at the site of 'Didova Khata' on the northern edge of the *chora* of Olbia (in the Lower Bug region).[18] In dimensions and ground plan it duplicates building U6 of the first building period almost exactly, though there *are* some slight differences (*e.g.* predominance of two- and three-roomed blocks). However, it seems that until we have a more or less complete publication of the results of the above excavations – detailing the character of the building remains in particular – any comparison of our building with the 'villa' (according to Ruban) or 'collective rural house' (according to S.D. Kryžickij) would be premature.[19] Therefore, the buildings uncovered in the western Crimea on the supposed *chora* of the Chersonesean state remain thus far the safest examples for comparison. The very noticeable similarity of ground plans among the large structures excavated to date in the relevant area suggests that a certain canon of spatial and planimetric layout for such buildings had appeared in the *chora* of Chersonesos by the end of the 4th century B.C. (though evidently not earlier than about 325/320 B.C.). It seems that this canon owed its existence rather to the realities of the everyday life than to the architectural and aesthetic ideas of their designers.

Materials and constructions. Building U6 was constructed on a flat site sloping gently towards the south-west and surfaced with a thin soil layer that hardly covered the surface of the bedrock. It was therefore unneccessary to dig any trenches for foundations, and the socles of the walls were set directly on the soil surface, which was possibly just levelled here and there. The presence of small bits of charcoal found in the buried soil beneath the floors of various rooms suggests that before construction began the vegetation on the planned building site (bushes and small trees) had been burnt off.

Stone wall socles. For the socles supporting the mud-brick masonry of the walls, the builders used only the dense Miocene limestones of the Sarmatian layer (N_2s_{2-3}). There are no outcrops of this rock nearer than the top and northern slope of the Ğangul Rise, several kilometres to the south of the site (*cf.* Appendix I). The limestones of the Pontic and Maeotic layers (N_{2m}, N_{2p}) which are easy to cut and convenient for construction, and upon which the house was actually built, were not used for any masonry. Thus even though it would appear to have been easier to utilize the material immediately to hand, this course was not adopted. However, the precise choice of rock for construction was not, in my opinion, fortuitous; for it was the dense and extremely plastic limestones of the Sarmatian layer that were the main building material in Chersonesos, and it would seem that the builders of U6 hesitated to use unfamiliar stone, preferring to bring to the site and work with materials that they were well used to.

The socles, with their upper surfaces carefully levelled to provide a base for the mud-brick walls,[20] were constructed of large, well-worked blocks bonded with a clayey mortar, the block themselves being clearly cut on their front, upper, and lateral faces and left undressed at the back. The height and thickness of the socles were observed to be within the range 0.50-0.65 x 0.55 (± 0.01-0.02) m correspondingly. The only exception was the western corner of the building (the walls of *rooms 12* and *13*), where the height of the socles was doubled to 1.05-1.10 m. This was evidently due to the fact that here a taller part of the building, exceeding two tiers (storeys), was to be built (see p. 50, *room 12*).

The socle masonry is carefully executed. Masonry type: *postelistaya* (stones laid flat), one row deep, one course high with the front side carefully dressed.[21] The stone blocks were from 0.50 to 1.53 m long, 0.53-0.56 m wide, and 0.20-0.55 m high. The back side of the masonry was filled with smaller, roughly dressed stones. In addition to these small stones on the back side, the interstices were occasionally filled with pieces of flat Sinopean tiles, tiles of 'Laconic' type and fragments of amphora walls for levelling.[22]

The faces of the socles were towards the yard round its entire periphery. By contrast, the orientation of the face planes of the socles of the transverse walls separating individual rooms varied in different parts of the building. This peculiarity reflects the sequence of construction of the rooms. The socles preserved to full height, together with such traces remaining after subsequent reconstructions as can be identified, have enabled us to restore the sequence of construction with a fair degree of reliability. Our suppositions are based on the following facts.

The masonry of the wall socles, located on each side of the gateway, had its dressed face towards the inside of the gateway. Correspondingly, the socles of *rooms 13* and *17* lying adjacent to the gateway and themselves divided by a mud-brick wall were faced on their outer sides: *i.e.* towards the gateway, towards the courtyard, and towards *room 12*. In a similar way, the socles of *room 5*, on the opposite side of the courtyard, had their faces towards the yard and towards *rooms 4* and *6* on either side. Thus it is evident that, originally, two 'nuclei' were projected: (1) the gateway with the block of *rooms 13* and *17* adjacent to it, and (2) *room 5*; and starting from these 'nuclei', the construction of all the other rooms surrounding the courtyard was then proceeded with. By the way, this fact is probably a further indication of a special (higher) status being accorded to these particular rooms (*i.e. 5*, *13*, and *17*). The same is possibly true of *room 12* – the only case in which the socles had their faces towards the inside of the room.

The first building period was continued by the sequential addition of rooms to either side of the axial line running along the wall between *rooms 4* and *5* and on to the wall between the gateway and *room 20*. Generally speaking, rooms were added in a counter-clockwise direction. Thus *room 6* was added on side of *room 5*, in the northern corner of the courtyard,

and *then rooms 4*, *3*, and finally *2* were added in succession on the other side (towards the south-east). In this way the north-eastern part of the house was completed. On the other sides of the yard, construction was again conducted counter-clockwise. Beginning from the northern corner, standard *rooms 6-11* were successively added along the north-western side of the courtyard. Sequential construction of similar standard rooms was carried out beginning on the right of the gateway – first along the south-western side of the courtyard (*rooms 20, 22, 24*), and then along the south-eastern side (*rooms 28-33*, *1*).

The above sequence of constructing the walls of a house has never, to my knowledge, been reported from any other site, either in the rural or urban domestic building, during the early Hellenistic period. This applies not only to Chersonesos and its *chora*, but also to other Greek sites on the Black Sea coasts (*e.g.* Olbia and Kimmerian Bosporos). The present case opens up the possibility of adding some new touches both to our conceptions of the architectural and planning activities of Chersonesean builders, and to our understanding of the technology of construction of large buildings and the organization of production alike.

Mud-brick walls. In a number of places, the remains of mud-bricks have been uncovered *in situ* on the upper surface of socles. Mostly, these remains were sufficient to allow measurement of the bricks' thickness only. However, the collapsed mud-brick masonry of the partition wall between *rooms 13* and *17* was an exception. This wall was built entirely of mud-bricks laid on a very low stone base. Here, two standard shapes of brick were used: square (*pentadoron*[23]), with sides of 44-45 cm and 8-9 cm thick, and rectangular 'half-size' bricks measuring 44-45 × 20-22 × 8-9 cm.

As is well known, mud-brick construction was widely utilized in Greece – for dwellings, public buildings, and defensive works alike.[24] The Greek states in the northern Black Sea area were no exception. Construction of mud-brick walls upon stone socles was common practice in the mass of urban and rural domestic building in Olbia and Kimmerian Bosporos. In addition to the bricks described above, mud bricks measuring 40 × 40 × 9 cm and 40 × 20 × 9 cm have been uncovered in the necropolis of Panskoye I, where they were used for building sub-kurgan vaults;[25] and bricks of the same size were found in a building of the 3rd century B.C. at the Chersonesean settlement of 'Chaika',[26] and in urban houses of the Hellenistic period in Olbia.[27] In the construction of defences on the Taman Peninsula (the Asian part of Bosporos), two other sizes of square bricks were used (52 × 52 × 7 cm and 24 × 24 × 4.5 cm).[28] Although we still do not have sufficient data to form a statistically based conclusion, we may suppose, with due caution, that the same (or very closely similar) standards for the production of mud-bricks existed both in Olbia and in the territory of the Chersonesean state during the period under discussion.

Doors. Those doorways, that were not reconstructed later are standard both as to width and as to construction of their thresholds and door-cases. The width of the doorways varies in the range 1.0-1.1 m. In terms of construction the stone thresholds are of two varieties. The first comprises thresholds cut very carefully from a single block and furnished with slots for fixing a wooden door-case and a bearing for the vertical axis of the door – though sometimes a separate rectangular block was used for the lower bearing. The second variety of threshold comprises those made up of two or more carefully cut blocks neatly fitted together.

Judging by the dimensions of the mortises, the position of bearings, and the form of the wall ends, the vertical members of the door-cases consisted of rectangular wooden beams about 8-10 cm thick, which were fixed to the walls with bronze nails. The doors proper, pivoting on their vertical axes, must have been 65 to 80 cm and would open outwards.

Ceilings. Although the remains of certain wooden structures that must have been installed between the lower and upper storeys were uncovered, no measurable beams have been found. Only the imprints of wood on fragments of what was presumably clay plaster from the ceilings are preserved. Nevertheless, eighteen iron nails were found lying *in situ* by pairs at a distance of 1-1.25 m from each other among the fallen remains of the ceiling in *room 3*. Each individual nail was bent in the shape of a Greek capital gamma (Γ), and every pair of nails was lying with their heads turned in opposite directions, thus Γ⌋. This fact enabled us to reconstruct the probable method of joining together the ends of wooden beams. The thickness of the beams, judging by evaluations based on measurements of the length of each part of the Γ-shaped nails, probably amounted to about 10 cm. Such a thickness must have been able to bear a fairly large load (and it should be remembered that on the second storey, above this room, a large store of goods was kept in amphorae and a pithos).

Roof. Judging by the absence of tiles, the roof of the building was probably made of wood and earth, or of reeds and earth. It is difficult to establish if it was flat or pitched – both variants are possible.

The system of measures. To determine the units of measure by which the planners and builders of U6 were guided, dozens of measurements were carried out in the course of excavations. The results are summarized in Table 9 below, and are compared with the most conveniently usable (*i.e.* divisible) Greek linear measures.

The table shows that the linear measures used by the builders correspond to those identified by G. Nikolaenko on the basis of on-site measurements of land lots in the immediate vicinity of Chersonesos on the Herakleian Peninsula.[29] Obviously, we must agree with her conclusions that 'a single system of planning based on one and the same system of linear measures' was employed for the division of the entire territory of the western Crimea into land lots, and that 'this fact indicates that a single metrological system was valid throughout the entire territory of the Chersonesean state, and the corresponding activities were under control of the state'.[30] Now, it is clear that not only were the division of western Crimea's *chora* and the planning of urban plots in Chersonesos carried out in accordance with the established measures,[31] but probably so too was the construction of buildings (at least, of the larger ones) on the territory of the state.

Dactyl should certainly now be included in the system (from foot to stade) reconstructed by Nikolaenko; indeed it was possibly in dactyls that the size of standard mud-bricks was measured, as shown in Table 10. A certain lack of precision in this case is due to the small number of measurements available and to the fact that the bricks became misshapen as a result of exposure to high temperatures during the fire.

In her studies, Nikolaenko proposed that Chersonesean linear measures were based on two Egyptian measures of length: the so-called 'royal cubit' of 52.5 cm and the foot equal to 35.0 cm.[32] It is quite possible that these standard measures were borrowed in their time from Egypt and adopted in a number of Greek *poleis*, particularly those of Asia Minor and some island states in the Aegean. It has long been established that in various individual Greek states ('cities') in Asia Minor there were at least seven different standards of measure based on feet of differing length – from 29.6 to 35.0 cm.[33] Such a situation had also existed in Chersonesos before the establishment of that city's measures originating from the Egyptian prototypes. The discovery of the original system of measures – that is to say, the system closest in time to the foundation of Chersonesos – is one of my aims. While not claiming to have found a solution to this problem, I would nevertheless like to present a few considerations.

According to Dinsmoor's calculations, the modules of the two systems most widely used

Table 9. Linear measures.

Subject of measurement /Number of measurements	Range of measurements (m)	Average (m)	Equivalents in ancient Greek linear measures: 'fathom' [ὄργυια] (2.10 m)	'royal cubit' [πῆχυς] (52.5 cm)	Foot [πούς] (35.0 cm)	Dactyl [δάκτυλος] (*c.* 2.18 cm)
Overall length/width of the building / 14	34.2-35.8	35	16.6	66.6	100	–
Width of peripheral structures / 23	4.0-4.5	4.2	2	8	12	*c.* 200
Interior width of rooms / 23	3.05-3.15	3.15	1.5	6	9	*c.* 150
Length of standard rooms of the Ia type / 13	3.3-3.8	3.5	1.6	*c.* 6.5	*c.* 10	*c.* 160
Width of the gateway (max.)	3.92-4.12	4.10	*c.* 2 (1.95)	*c.* 9 (7.8)	*c.* 12 (11.7)	188
Width of the passage in the gateway	2.05-2.08	2.07	*c.* 1	*c.* 4 (3.94)	*c.* 6 (5.9)	*c.* 95 (94.95)
Width of socles / 40	0.53-0.56	0.525	0.25	1.0	1.5	24
Typical height of socles / 25	0.50-0.65	0.525	0.25	1.0	1.5	24
Maximum height of socles / 5	1.05-1.10	1.06	0.5	2.0	3.0	48
Width of doorways / 13	1.0-1.10	1.05	0.5	2.0	3.0	48

in the Greek Mediterranean had the following metric equivalents: the 'short' or Ionic foot was 29.395 cm, and the 'long' or Attic (Dorian) foot was 32.654 cm.[34] Thus, if Dinsmoor's calculations are correct, these very widespread systems obviously do not conform at all with the Chersonesean one.

However, it is possible that a certain agreement with the Chersonesean measures under discussion might be found by investigation of the so-called Oxford 'metrological' relief, the ultimate origin of which is considered to be Samos. It has been established that two standards of measurement are represented on this relief. The first (illustrated by the upper torso of a man with arms outstretched to either side) includes one 'fathom' in the so-called Ionic system of measures of Asia Minor, in which a foot is 34.8 cm, a cubit is 52.25 cm, and a fathom is 2.09 m. In the second standard (the 'impression' of a human sole), a foot is represented in the Attic (Doric) system. This has enabled those who have investigated the relief to reach the unanimous conclusion that the Egyptian 'royal cubit' was taken as the basis of the Samian fathom which also means it was the basis of the Ionic standard of Asia Minor.[35]

Table 10. Dimensions of mud bricks.

Number of measurements	Range of measurements (cm)	Average (cm)	Equivalents in ancient Greek linear Measures: Foot [πούς] (35.0 cm)	Equivalents in ancient Greek linear Measures: Dactyl [δάκτυλος] (*c.* 2.18 cm)
Length: 5	44.0 – 45.0	44.3	1.27 (*c.* $1^1/_3$)	*c.* 20 (20.3)
Width: 6	20.0 – 22.0	21.9	0.6 (> $^2/_3$)	10
Thickness: 20	8.0 – 9.5	9.0	0.26 (*c.* $^1/_4$)	*c.* 4 (4.1)

The values obtained by our measurements taken at building U6 are actually very close to the Samian standard. Nevertheless, there can be no certainty that this standard was the 'original' for the Chersonesean system, and possibly, we must look for the true origins of the Chersonesean measures among the cluster of Megarian colonies in Propontis and Pontos. Thus these measures probably had their roots in the systems that were used in Greek centres of Asia Minor and the Aegean islands. The most valuable information for studies of the metrology of the Chersonesean state would be supplied by accurate measurements of archaeological objects found in its metropolis, Herakleia Pontike, and in the latter's second colony – Kallatis. However, such data are lacking at present.

The second building period

During this concluding period, which seems to have lasted for several decades, the final ground plan of the building gradually emerged (Pl. 12). This layout was the result of adding new rooms to the courtyard side of rooms in the first range, the reconstruction of a number of the first-period rooms, and the joining of several rooms into single blocks. The gradualness of the process probably reflected certain qualitative changes in the demographic, social, and economic status of the inhabitants. In the formation of the final ground plan and the overall appearance of the house, it is possible to distinguish a number of building phases and to suggest a relative chronology. On the other hand, it is not possible to separate these phases in terms of an absolute chronology, and they may be summarily dated to about 300-270 B.C., though hardly later.

Phase 1. On the south-western side of the courtyard, to either side of the gateway, one of the walkthrough or passageway rooms (*16/18* (at first a single room), *19*, *21* and *23*) was annexed to each of the first-period *rooms 17*, *20*, *22*, and *24* respectively. Possibly at the same time, the passageway *room 34* was annexed to *room 1* in the eastern corner of the yard. Peculiar to the above-mentioned 'new' rooms are the very carefully made stone socles, the mud-brick walls, and also the floors consisting either of crumbled limestone in a clayey mortar or of stone pavements as in *room 21*. In this way were formed four two-roomed blocks and one three-roomed block. Most probably, though it is impossible to prove, it was at this same time that *rooms 28* and *29* in the southern corner of the building were combined to make a single two-roomed unit.

Phase 2. This stage saw probably the most significant changes in the ground plan. Thus in the western corner of the yard, the originally single passageway room was divided by a transverse wall into two rooms (*16* and *18*). In this way, the three-roomed block near the gateway became a four-roomed one, and at the same time the entrances to the rooms were reconstructed. The original entrance to the block, situated in the northern corner of *room 16*, was closed off and access was now via *room 18*. At this time too the wall between *rooms 17* and *18* was reconstructed and had a doorway made in it.

Perhaps this same period also saw the conversion of the two double-roomed blocks to the right of the gate into a single four-roomed block (*rooms 19-22*), which could be entered via *room 19*. It is quite possible, that it was at this time too that the large *room 7*, intended for some domestic purpose, was formed out of two or three first-period rooms in the northern corner of the courtyard. In the course of this reconstruction the interior walls were dismantled and one of the exits into the yard was blocked up. The new annexes added to the first range of rooms during this phase possibly included the small passageway *room 35* in front of *room 2* in the eastern corner of the courtyard, and *room 27* in front of *room 30* on the south-eastern side of the yard. As a result, a couple of isolated two-roomed blocks were created.

Phase 3. The last annexes, it seems, were the following: corridor *room 15* (which led to *room 7*) in the northern corner of the yard; *room 14* in the western corner of the yard; *room 26*, an infill room in the southern corner of the yard; and *room 36* annexed to *room 31* on the south-eastern side of the yard. Probably at the same time, the latter room was enlarged and *rooms 1* and *32-34* were made into a single four-roomed block. The original exits from these rooms to the courtyard were closed off, and this set of rooms could then be entered only via the corridor *room 34*. We may suppose that it was during this phase that the 'awnings' in front of the north-eastern range of rooms (and partially along the south-eastern side of the courtyard) were constructed.

Thus, owing to the enlargement of the living-accommodation, the ground plan of the building underwent fairly considerable changes before reaching its final form. Three large four-roomed living-units which undoubtedly represented the same number of independent households can be reliably identified. However, the set-up in the southern corner of the building has remained somewhat unclear. Here, there was access by way of a single entrance to a block of five rooms, but there is no certainty as to whether these rooms made up just one household, or two consisting of one two-roomed unit and one three-roomed one. In addition to the foregoing, three independent two-roomed blocks have also been identified; and finally there remained five or six self-contained single rooms, as in the first building period. Thus we may suppose that the total number of 'units' amounted to about twelve to fourteen. And as had been the case during the first period, the five or six single rooms were evidently for communal use. These were the sanctuaries in the western corner, the supposed room for communal meals on the north-eastern side of the courtyard (the lower storey being probably occupied by the kitchen), and other rooms intended for general domestic purposes. On the basis of all the above, we are led to suppose that notwithstanding the structural (and hence demographical) changes during this final phase, the everyday life and occupations of the building's inhabitants would have continued as before.

NOTES

1. Excavation of this area showed that originally, probably since the turn of the 5th-4th century B.C., there had been a square fort here, with round towers at its corners. Later, in the second half of the 4th century B.C., a densely built-up area of dwellings formed on its ruins. *Cf.* Ščeglov 1987, 242 ff.; Chtcheglov 1992, 238 ff.
2. Excavation of this building complex was begun in 1994 by the Aarhus University team of the Tarkhankut Expedition, headed by L. Hannestad. See: Stolba and Ščeglov 1994, 149; Hannestad 1995, 312-316; Stolba, Hannestad and Ščeglov 1995, 335-337; Ščeglov, Hannestad, Kašaev, *et al.* 1995, 290; Ščeglov 1997, 275 f.
3. *Cf.* Ščeglov, Hannestad, Kašaev, *et al.* 1995, 289.
4. *Cf.* Ščeglov 1977, 78-81; Ščeglov 1987, 242, fig. 5.
5. The Institute of Archaeology, Russian Academy of Science, photo 814.
6. *Cf.* Ščeglov 1970, fig. 7.
7. For the rough plan, *cf.* Ščeglov 1977, 80, fig. 1.
8. Strželeckij 1961, 205, fig. 65; Dufková and Pecírka 1970, 162 ff., fig. 15.
9. For that purpose an Archaeologico-Geophysical Detachment was established. The task of carrying out the surveys and the subsequent processing of the results were entrusted to V.V. Glazunov, then a student in the Department of Geophysics of the Leningrad Mining Institute. A.I. Aibabin and E.V. Cuckin, students from the Leningrad State University, also took part in the work. The results obtained in the course of these studies were included into his dissertation by Glazunov and subsequently published (Ščeglov 1977, 79 f.; Glazunov 1978, 68-72).
10. For a detailed description of the equipment, *cf.* Višnjakov 1967, 84, 122.
11. Ščeglov and Šilik 1965, 122; Šilik 1967. *Cf.* also Frantov and Pinkevič 1966, 68 f.
12. For details, *cf.* Glazunov 1978.
13. During that season we were not able to excavate *room 7* completely, since in 1970 the work of the Expedition was interrupted by quarantine measures against an epidemic of cholera in the Crimea.
14. The same observation applies to most of the sites in the north-western Crimea.
15. We found similar nails related to door construction (one still fixed in the lower part of the face plane of a doorway) during excavation of the settlement-site of Tarpanchi.
16. See below the description of *room 13* and note 39 below, giving details of the chemical analysis of similar runnels on amphora fragments.
17. Monachov 1989, pls. IV-XI. The amphorae from room 3 were handed over to the Chersonesean Museum for restoration and measurement, but unfortunately all of them were lost there.
18. Kac 1994, 51 ff. (Group 1B).
19. Kac 1994, 120, 2A-13. I agree with S.R. Tochtas'ev (1997, 370), who pointed out that Kac's reading of this monogram as Εὐ( ) ἀ(στυνόμου) is improbable. One further stamp, on a handle that had evidently fallen down along with other fragments from the upper floor, was found in the courtyard – in the breakdown of the south-western wall of the room in square E-2.
20. Kac 1994, 50, 58.
21. The layered and unstable fabric of the mushroom-rimmed amphorae was completely decayed owing to crystallisation of soil salts and it was impossible to preserve and restore the vessels in field conditions. One of the three 'matching-type' amphorae from *room 3* is hypothetically identified in the Catalogue (Part II **A** below) as Samian (**Ad 80**). In terms of its clay fabric this pot is visually identical to amphora **Ad 82** with stamp **Ae 135**. In this case, however, amphora **Ad 81** cannot have come from the same centre since it is of a very different clay (a dense pink one).
22. Find list 6/69, 6/30. They were not included in Monachov's publication (1999a).

23. For a description and discussion of the graffiti and dipinti, see Part II **H** (**H 5-9**, **H 20-21**, **H 23**, **H 41**, **H 64**, **H 68**, **H 74**).
24. *Cf.* Part II **D**.
25. E.Ya. Rogov calls it 'a fork' and along with D.M. Robinson interprets it as an implement for removing hot meat from a boiling pot. However, it is possible that the tool was used for some other household purpose.
26. I.V. Bogdanova-Berezovskaja discovered an unusually high content of phosphorus pentoxide (P_2O_5) in the samples analysed in the LOIA Chemical Laboratory.
27. The second fragment of the same stamp was found in the gateway, below the level of the surface synchronous to the building's destruction.
28. E.Ya. Rogov (see Part II **K**) believes that these were probably parts of a lock for some chest. However, their planigraphic position suggests that they more probably belonged to the door lock.
29. One fragment of this vessel was found in *room 7*.
30. Samples scraped off this vessel were identified in the laboratory of LOIA (IIMK) by I.V. Bogdanova-Berezovskaja. She concluded that it had contained an organic liquid, most probably vegetable oil.
31. Two of these were covered by the breakdown of the fireplace and mixed with fragments of its hearth.
32. It is unlikely that such traces were left by striking against armour. The character of the context which we observed during clearing of the layer induced us to suppose that somebody had used the *machaira* in an attempt tried to cut open the closed door of the room. It is also possible that the sword was used by the defenders.
33. For a detailed analysis, see *room 12*.
34. *Cf.* the detailed description of *rooms 3* and *13* and of the courtyard.
35. Group I in Grakov's classification (1929).
36. S.Yu. Monachov (1999a, 508, pl. 214, *4*) tentatively identified it as Samian, along with the amphora from *room 3* (**Ad 80**) and the amphora (**Ad 82**) bearing the stamp САΓΓАРІ from square D-5 in the courtyard. Although these items are really close in terms of paste composition there are, even so, certain significant differences (and in the rim profiles too).
37. Fragments of the walls of the same pithos were found in sub-horizon IC_1 in *room 14*, in the upper layer of the clay-and-loam fills of the adjoining *rooms 16* and *17*, and in the western part of the courtyard (squares B-6 and V-6). The pithos was probably kept on the first floor of *room 13*; however, this supposition is difficult to prove. Judging by the outer and inner diameters of the rim (34.5-35 cm) and (27.4 cm respectively), and by its rectangular profile, this was a typical Sinopean pithos of the 4th century B.C. It was impossible to reconstruct the complete profile of the vessel.
38. Numerous fragments of similar amphora fragments that had fused to the same extent because of over-firing (spoilage in manufacture) were found during V.V. Borisova's 1955-57 excavations of potters' workshops in Chersonesos (*cf. SAI* G1-20, 1966, pl. 13, *6*).

    After excavation of *room 13*, and in pursuance of the planned project of relative petrographic studies of stamped amphorae (*cf.* Appendix II), we carried out an experiment to sample clay from deposits in Chersonesos, modelling plates of the raw clay (without mineral tempers) up to 7 mm thick (*i.e.* comparable to the average thickness of Chersonesean amphorae and other large vessels) and firing them in a muffle kiln at different temperatures (S.Yu. Monachov conducted the firing). The experiment showed that the optimal firing, giving results that best corresponded (visually least) to examples of Chersonesean pottery from excavations, was achieved at a temperature in the range 800-1000°C.
39. Samples for analysis were scraped from the interior parts of the amphorae and fragments thereof directly after their removal from the layer and prior to preliminary washing; subsequent desalting (treatment with solutions of hydrochloric acid and leaching in water with mechanical clean-

ing off of residues) and restoration were conducted in the laboratory of LOIA (restorer O.N. Plamenevskaja). During restoration all the sooty runnels, lime residues, *etc.* were removed. For purposes of analysis ten samples of scraped off material and sediments were selected. Itemised descriptions and the conclusions drawn by Bogdanova-Berezovskaja are presented in the following table.

Sample no./ Find list no.	**Description of vessel**	**Results of the analysis**
1. 8/2	Chersonesean amphora (**Ad 1**) with the stamp of the astynomos *Bathyllos* (**Ae 33**) and two graffiti: a numerical one and letter E (**H 33(a)**, **H 33(b)**)	Fatty organic liquid, probably vegetable oil
2. 8/3	Chersonisean amphora (**Ad 13**) with dipinto M (**H 70**)	Organic substance (more accurate identification impossible)
3. 8/4	Sediment from a Chersonesean amphora (**Ad 12**)	Fatty organic liquid (vegetable oil?)
4. 8/5	Chersonesean amphora (**Ad 22**) with dipinto A/XI (**H 73**)	Traces of soot. Organic substance (more accurate identification impossible)

40. *Cf.* Ščeglov 1974, 49. Kac and Monachov 1977, 95, agreed with this supposition.
41. *Cf.* below Part II **H**.
42. Another amphora (**Ad 2**) with the stamp of astynomos *Bathyllos* (**Ae 32**) and the graffito E (**H 13**) bearing traces of similar fatty runnels of some burnt liquid was found near the southern corner of the building in squares DE-6. See Gilevič and Ščeglov 1996, 105 (square B-6 was named erroneously in the publication). *Cf.* the description of *room 3* and note 16 above.
43. This applies not only to the amphorae of Chersonesean manufacture described here. For details, see Gilevič and Ščeglov 1996, 105 ff. However, a possible exception to this rule was a Sinopean amphora with oil (**Ae 105**). Communications by ancient authors (though rather late ones) give an impression that olive growing was traditionally the main branch of the Sinopean economy, thus the resulting produce was quite possibly exported (Strab. 2. 1. 15; Eust. Il., II. 853).
44. The latter stamp is not included in the catalogue below (Part II **A**).
45. Kac 1994, 50, 76.
46. Physical data determined by T.S. Konduktorova (Institute of Anthropology, Moscow State University).
47. The wood is very poorly preserved. According to the investigations carried out by G.N. Lisicyna, it was possible to identify oak (*Quercus* sp.), juniper (*Juniperus* sp.), and, possibly, poplar or asp (*Ulmus* sp.) among the presented samples.
48. A graphic reconstruction of the loom would be possible, though it presents special problems.
49. Identification by E.Ya. Rogov.
50. For the earliest communications on worship of Asklepios in Chersonesos, see Golenko and Ščeglov 1966. In this article, it was proposed, on the basis of epigraphic and numismatic evidence, sculpture and small bronze artefacts as well as glyptics, that the cult of Asklepios appeared and became especially popular in Chersonesos in the early centuries A.D. During that period a

sanctuary of Asklepios was functioning in the city (*IOSPE* I^2 376). However, the facts now accumulated make it possible for the date marking the rise of worship connected with this cult to be shifted back at least as far as the 4th century B.C. Indications in favour of this supposition are: I.A. Antonova's find of two polychrome gravestones of physicians in Chersonesos (Solomonik and Antonova 1974); a graffito with a dedication to Hygieia on a kantharos from a Chersonesean country house (synchronous with U6) at the settlement of Mayak on the Eupatoria Peninsula (Jacenko 1983, 202 f., fig. 7a; Kolesnikov 1984, 86); and a graffito on a fragment of the base of black-glazed plate from Chersonesos with a supposed dedication to Asklepios in a Doric dialect (*GACh*, 35, no. 355 – ΑCΚΛΑ[).

51. This is the only find of a tile of Chersonesean manufacture.
52. Probably it was a household enclosure separated from the rest of the room by a wooden or wattle partition. Since fairly numerous scales of mullet (*Mugil* sp.), annular bream (*Diplodus annularis* L.), and fish of the herring family (*Alosa* sp.), as well as bone-plaques of sturgeon (Acipenser), brill (*Rhombus maeoticus* Pall.) and fox-skate (*Raja clavata* L.), were found here during the process of clearing the layer, this side of the room was possibly associated with the cooking or, most likely, the storing of fish.
53. At the time of his writing, A.N. Zograf dated the release of this series of Chersonesean copper to the first half of the 3rd century B.C. (1951 (= Zograf 1977), XXXV, 24-25; the precise dates (300-250 B.C.) in the notes to the plate in Zograf's book were put in by D.B. Šelov). Later, V.A. Anochin (1977 (= Anokhin 1980), 77-81) proposed a narrower dating, to the first decade of the 3rd century B.C. (300-290 B.C.). However, taking account of the archaeological context of the coins published here and the fact that one of the coins was not worn in circulation (the other was badly corroded), A.M. Gilevič supposed that the release must have taken place in the late 4th or at the turn of the 4th-3rd century B.C. (inventory list of coins from U6, archive manuscript; *cf.* also Gilevič's article in Part II below). V.F. Stolba (1989, 67) independently came to the same conclusion (end of the 4th century B.C.).
54. The context here is similar to that in *room 22* (*cf.* note 53 above).
55. The construction of the doorways leading to the adjacent *rooms 24*, *26*, and *28* is given in the respective descriptions of these rooms.
56. Fragments of the same bowl (**C 51**) were found lying on the floor of the adjacent *room 25*.
57. Fragments of the same bowl (find list 9/16 and 10/14. 1972) were uncovered in *rooms 25* and *26*.
58. This was the only threshold of such a high quality to be found in the building.
59. However, in contrast to *rooms 3*, *12*, and *13* (see above) the stratigraphic picture was not so distinct. The fire may not have been so strong here, and it probably occurred after the rooms had been plundered, when nothing remained there.
60. The same that was found in the adjacent rooms.
61. *Cf.* note 19 above.
62. Probably from the same storeroom comes an accumulation of broken stamped and unstamped amphorae, mostly Chersonesean, found in the southern part of the courtyard (*cf.* the description of the courtyard, pp. 68-72)
63. The location of this doorway was preliminary identified by remote sensing carried out by V.V. Glazunov. Clearing of the very poorly preserved base of the wall confirmed the results of the electric profiling.
64. The top of the amphora had been broken off in antiquity, and the lower part was then reused for some domestic purpose.
65. During the excavation of a country house near the Bay of Vetrenaya I recorded a similar example of the reuse of a handmade pot bottom as a lid.

66. This wall was very poorly preserved; its position was traced from the small stones of its base and the remains of mud-brick masonry.
67. The height of the preserved lower part was 0.45 m; the width 0.60 m; the thickness 0.16 m. The length of the tenon was 20 cm, and the width 24 cm.
68. Weight 444.61 gr.
69. A vertical frame made of wood or wattle and plastered with clay.
70. The original height of the socles has about 75-80 cm.
71. Here is an indicative example: part of an engraved stamp on a fragment Herakleian amphora neck (**Ae 118**) was found in *room 12*, while another part of the same was found in the thickness of artificial fill in the gateway (see p. 68 and note 27). This fact is yet another indication that a certain group of early artefacts is to be excluded not only from consideration of the ceramic assemblage synchronous to the period of occupation of the building, but also from the materials used in dating the period of its construction.
72. Possibly futher remains of the same path that was laid from the entrance of *room 28* in the first row, and part of which was uncovered beneath the floor of *room 25*.
73. Belonging to the first group in Grakov's classification. Fragments of two other stamped Sinopean tiles with the names of the astynomoi *Histiaios* and *Diophantos* (see **Ab 3** and **Ab 6**) were uncovered at the edges of the paved areas, in a refuse layer beneath the level of the surface of the courtyard (facia IC_a).
74. Although only three samples of stamps of the astynomos *Kraton* have been recorded (**Ae 58-60**), those of *Apollonios* amounted to more than fifteen (**Ae 3-19**).
75. All the other 'enclosures' were of rectangular plan. Circular 'enclosures' are, however, typical of household rooms in houses excavated in other areas of the Panskoye I (U7 and U13).
76. According to my measurements at the beginning of September 1973, the level in the well was 2.48 m below the surface of the bedrock, and in August 1977 it was 2.30 m below the surface of the bedrock. The latter value exceeded the water level in Lake Panskoye (Sasyk) at that time by only 10 cm.
77. The quantity of water springing from the walls in a continuous flow was so great that it was quite impossible to drain it with a hand pump. For this reason, in 1974 the clearing of the well had to be suspended; it was completed in 1977, when a powerful motorized pump was employed. However, even this pump did not enable to lower the water level essentially. Therefore, removal of the fill, down to 0.5 m. thick, had to be carried out 'by touch', an operation undertaken by V.I. Kac, working in a diving-suit!
78. *Cf.* note 76 above.
79. This clearing was conducted in 1967 by a group from assistants of the Donuzlav Expedition, who visited the site after we had started work there and had already dug an exploratory trench near the well. They found, in particular, an anepigraphic stamp on a fragment of a Sinopean amphora handle (**Ae 114**), which had possibly fallen from the edge of our trench. For brief details, see Daševskaya 1968, 215 ff.; Ščeglov 1968, 213 ff.
80. As identified by T.S. Konduktorova.
81. Identification by E.S. Čavčavadze.
82. I observed a similar picture during excavations on the late Scythian site of Tarpanchi near the village of Okunevka (on the southern coast of the Tarkhankut Peninsula). There, after the similar destruction of a small fortress (which, however, took place at the beginning of our own era), a well was filled to its entire depth with the skeletons of domestic animals that had been thrown into it. Such a method of poisoning wells is well known among the offensive tactics of nomads.
83. Kac 1994, 120, nos. 13 -15. But *cf.* Tochtas'ev 1997, 370.
84. *Cf.* Part II **H**.

85. Remains of two englyphic stamps on extremely small neck fragments of Herakleian amphorae (**Ae 119**, **Ae 125**) were also found in this part of the courtyard but in a refuse layer below the surface of the yard, directly above the bedrock; they therefore cannot be considered as belonging to this accumulation of amphorae.
86. The other half of this stamp was found in square V-4, and it is highly probable that this example belongs with the dump of amphorae in *accumulation 3*.
87. This is a unique find enabling a fairly exact reconstruction of the plough to be made; this is, however, a special subject.

DISCUSSION

1. Monachov justifiably bases his dating on materials from the necropolis of Panskoye I, see Monachov 1989, 49; Monachov and Rogov 1990a, 130. Amphorae of this type were probably manufactured in Chersonesos before the beginning of regular stamping. The definition of the upper chronological limit for the production of these vessels depends on establishing the beginning of the practice of stamping, which, according to certain recent works, is to be dated either to 320-315 B.C. (Kac 1985, 100 ff.; Kolesnikov 1985, 73 ff.) or to about 325 B.C. (Kac 1994, 69 ff., 76). Yet it is possible that these amphorae continued in use in tandem with the first consignments of stamped containers.
2. A significant point is that the concentration of pottery fragments in the layer of ancient soil lying beneath the floors and wall-bases of U6 increases westwards, *i.e.* towards the central area U7, while the same layer in the eastern and south-eastern parts of the excavation is almost entirely devoid of finds. Probably, we are dealing with refuse dumped beyond the eastern confines of the settlement during the period before U6 was put up. Another important indication, in my view, is that during the clearing of the courtyard – beneath the level of the earthen surface existing at the time of the destruction – there were found in the mixed layer that had gradually accumulated throughout the entire period of the building's occupation fragments of amphora necks from Herakleia Pontike with remains of englyphic stamps dating to about 400-350 B.C. (see **Ae 117-118**, **Ae 122-126**). Probably, to the period not later than the middle of the same century belong a number of stamps of Grakov's first group on fragments of Sinopean tiles (**Ab 5-7**). Of note is that this layer is practically devoid of Herakleian and Sinopean stamps, which, were they presented, might be reliably dated to about 350-375 B.C.
3. Stolba 1989, 97. The coin types concerned are those described in Zograf 1951, pl. XXV, *24* (= Zograf 1977).
4. *Cf.* Part II **I**.
5. The fortress was built at the turn of the 5th and 4th centuries B.C. or at the very beginning of the 4th century on a previously unoccupied site. It was probably about 350 B.C. that it was partially demolished and a group of ordinary small houses appeared at its place. See Ščeglov 1986, 166 ff.; Ščeglov 1987, 242 ff., figs. 1, 19, 21, 22; Chtcheglov 1992, 268 ff.
6. Ščeglov 1987, 258 f., fig. 1; Chtcheglov 1992, 268 ff.; Stolba, Hannestad and Ščeglov 1995, 50 ff., fig. 4; Ščeglov 1997, 276.
7. For a brief description, see Ščeglov 1976, 409 f.; Stolba, Hannestad and Ščeglov 1995, *passim*.
8. *E.g.* an Attic askos (Guttus type) Sparkes and Talcott 1970, no. 1194 (*c.* 350), a fish-plate with a graffito, and other items.
9. Such a suggestion is supported by K.V. Šiškin (Institute of Archaeology, RAS), topographer, expert in aerial surveying and photography, for whose learned advice I am extremely grateful.
10. For the grounds of this hypothesis, first proposed by me in a slightly different form, see Ščeglov 1968a, 339; *cf.* Ščeglov 1985a, 190-193; Ščeglov 1987, 250 f., 273, fig. 30.

11. A similar picture with an analogous composition of finds emerged at some other sites too (for instance at the Tarpanchi settlement; at the rural houses of Panskoye III; near the Bay of Vetrenaya; and near the Bay of Bolshoi Kastel), as well as in the course of exploratory excavations at a number of sites in the north-western Crimea. The same is also typical of the immediate rural environs of Chersonesos.
12. The slight variations in the external dimensions are due to the non-uniform state of preservation of the external walls.
13. The second supposition is more probable. See above, p. 43.
14. Some time ago, I suggested, as a preliminary hypothesis, that 'the site of Panskoye I at the northern edge of the Chersonesean *chora* may have been a military and economic settlement, possibly similar to the early Hellenistic ones of the same type as *katoikia* as defined by E. Bickerman' (Ščeglov, Gilevič, Glazunov *et al.* 1975, 376). With the subsequent extension of the excavations and the accumulation of further evidence, my hypothesis has found additional confirmation (for more details, see Ščeglov 1986).
15. This, however, is a special topic which will not be discussed here.
16. Strželeckij 1961, 87 ff. (Chapter 6), fig. 65 ff., 94 ff. See also Dufková and Pecírka 1970, 163, fig. 15, 168, fig. 17; Pečírka 1973, 140 ff., fig. 2, *6* and *8*; Novicka 1975, 113 f., fig. 66; Ščeglov 1976, 56 ff. (including a three-dimensional reconstruction); Wąsowicz 1982, 210, figs. 165, 166; Kryžyckij 1982, 55, fig. 22, *1-2* (including a three-dimensional reconstruction); Chtcheglov 1992, 79 ff. These two buildings were supposed by Strželeckij (and by all subsequent authors) to be 'country houses' dating to the period spanning the turn of the 3rd to the 2nd century B.C. However, E.Ya. Turovskij (1994, 11 ff.) convincingly showed that these buildings were erected during the last quarter of the 4th century B.C. and that their occupation came to an end about the close of the first third of the 3rd century. His conclusion is based both on a new analysis of the ceramic assemblage from these houses and on the results of our excavations in north-western Crimea.
17. Kolesnikov 1984.
18. Ruban 1974, 335 ff.; 1978b, 34 ff., fig. 2; Kryžyckij 1982a, 42, fig. 17, 45 (including a three-dimensional reconstruction).
19. Except for a number of schematic plans that differ from each other (see Ruban 1978b, 35, fig. 2, and Kryžyckij 1982, 42, fig. 17, *2*) no other information (photographs or drawings) has yet been published.
20. Such a technique of constructing mud-brick walls upon low stone socles is typical both for urban and country houses in early Hellenistic Chersonesos. A sure indication that walls were originally built of mud-bricks are the remains of stone socles with a carefully levelled upper plane and infills of dense clay loam. See Ščeglov 1982a, 50 ff.
21. The system of categorizing stone masonry here and below is presented according to Kryžyc'kyj 1965, *passim*; however, some slight alterations have been made to reflect certain peculiarities in the techniques of stone-working and construct employed in the region under discussion (the western Crimea). For the system of describing the different types of masonry used in mass construction in ancient cities of the northern Black Sea area was originated by A.N. Karasev, and in perfecting this system Kryžyckij like Karasev, took as his basis material from excavations in Olbia, where building traditions were slightly different. The type of masonry described here is closest to the type illustrated by Kryžyc'kyj 1965, 46, fig. 6, *1*.
22. This fact is yet another indication that fragments of certain ware (from red-figured and black-glazed vessels, early Herakleian stamped amphorae, Sinopean stamped tiles, *etc.*), found in various parts of the building, should be excluded from consideration of the ceramic ware used by the inmates in their everyday life. All these fragments were either reused as building material or carried into the house as refuse from adjacent areas.
23. See Ορλανδος and Τραυλος 1986, 202 f., *s.v.* πεντάδωρος.

24. Orlandos 1966, 51 ff. On the sizes of bricks at different sites in Greece, see Orlandos 1966, 58-61.
25. Vaults in kurgans K2, K33, and K34. See also Ščeglov 1978, 80.
26. Jacenko 1970, 254.
27. Kryžyckij 1971, 124.
28. Sokol'skij 1967, 110 ff. The fortress at the Batareika II settlement is dated to the 1st century B.C.
29. Nikolaenko 1983, 13 ff., 17.
30. Nikolaenko 1985, 14. This author reached her conclusions not only on the basis of her own on-site measurements taken over many years, but also on the basis of measurements carried out likewise over a long period by S.F. Strželeckij, E.N. Žerebcov, and by myself on the Herakleian Peninsula, as well as my measurements in the north-western Crimea (*cf.* Nikolaenko 1985, 13-15 and the refs. given there). This conclusion may thus be accepted as well-founded.
31. Nikolaenko 1983, 17. The dimensions of the smallest land lot or urban plot in Chersonesos are 52.5 × 52.5 m (100 × 100 cubits).
32. Nikolaenko 1983, 14.
33. Nissen 1892, 863.
34. Dinsmoor 1961, 357 ff. Such a degree of precision without any correspondance to measures existing in reality is, in my opinion, entirely superfluous and does not even justify the time spent on the calculations. The line thickness of the gradations marked on any measuring implement used in construction-work, not only in antiquity but even today (with the possible exception of laser levels and theodolites), is 0.25 to 1-2 mm. For any ancient structures, therefore, there is absolutely no sense in making calculations to five decimal places.
35. See Wesenberg 1976, 15 ff. with many references.