

## HANDMADE POTTERY

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Coarse hand-shaped pottery makes up one of the largest groups among the material found during the excavation of U6. The present chapter includes a catalogue of 130 items. In the catalogue all the complete and archaeologically complete shapes, as well as the fragments of parts reflecting the profiles and giving some idea of the morphology of the objects, have been listed. The numerous body sherds have not been taken into account, except in those cases where, on the basis of similarity of the clay texture, firing peculiarities, and fabric, it was possible to assign them to certain vessels.

In contrast to the wheel-thrown ware represented either by ceramic items imported from other cities or by the products of Chersonesean ceramic workshops, the bulk of the handmade pottery discussed here was undoubtedly manufactured by the inhabitants of the settlement themselves. The traces of such manufacture have been discovered at Panskoye I, in the northern part of building U6. Here, during the excavation of 1971, a room was discovered that may be supposed with a high degree of probability to have been the workshop of a local potter (*room 7*; cf. the description of the building complexes above). Along with various items of finished handmade ware (**D 12**, **D 34**, **D 91**, **D 99**), a stock of grog (Pl. 134, *a*) and a small kiln were discovered here.<sup>1</sup>

Similar primitive workshops, doubtless intended to satisfy the domestic needs, are also known at other settlements in the territory of Chersonesos. One of them has been investigated by V.A. Latyševa at the settlement of Masliny (Vladimirovka) situated about 26 kilometres to the north-east of Panskoye.<sup>2</sup>

Although discoveries of such a kind prove the local nature of handmade pottery production, we are only rarely presented with detailed evidence of the technological processes involved, and finds of pottery as such still remain the basic source. The available material will be discussed below in terms of its technology, morphology, and ethno-cultural relations, as well as its role in the whole ceramic assemblage of building U6.

## TECHNOLOGY

The main principles of the manufacturing technique for coarse clay pots have shared much in common in various civilisations over many centuries. The general features, therefore, can be reconstructed reliably enough on the basis of ethnological data.<sup>3</sup> As a rule, the technological process includes the following basic stages: (a) preparing the plastic mass; (b) shaping the article; (c) finishing the surface; (d) executing the decoration; (e) drying the vessel; (f) treating cracks caused by deformation of the vessel in drying; (g) firing.

*Preparing the paste.* In terms of paste composition, the collection of handmade pottery from building U6 is highly heterogeneous. For more detailed investigation of the differences, which in most cases were actually visible to the eye, 34 samples were studied in standard petrographic thin sections using a MP-3 polarizing microscope. These samples cover the whole spectrum of the clay composition of the ceramic assemblage. The results of these studies, made by Dr. G.M. Kovnurko (Petrophysical Laboratory of the Institute of the Earth's Crust,

St Petersburg State University) are presented in Appendix III. Analysis of the material in thin sections showed that during the preparation of the paste, both fat clays (*e.g.* *A-11*, *A-25*, *A-26*) and lean Quaternary ones were used, the latter evidently prevailing over the former. In the lean clays, aleurite (silt) and quartz-feldspar sands as well as basalts or augites containing sand appear as natural inclusions. The use of a carbonaceous clay was identified in the case of four samples (*A-9*, *A-22*, *A-34*, *A-35*). Of the artificial additives mixed to a clay to improve its working, drying, or firing properties, crushed rock, grog (crushed potsherds) and sand appeared most often. The use of organic materials was found to have been much more uncommon.

*Crushed Rock.* The local limestone served most often as the source for this material. It was crushed, it seems, without any subsequent attempt at calibration, as evidenced by an essential variation (from fractions of a millimetre up to nine millimetres) of the particle sizes of the nonplastic material within the fabric of each vessel. In certain exceptional cases such non-autochthonous rocks as basalt were used instead of limestone (**D 27** = *A-7*; Pl. 190, 2).

*Grog.* Sherds of wheel-thrown pottery were prevailing used as the raw material for the preparation of grog. The ready availability of ancient sherds for grinding up as temper was an important factor for local potters. As mentioned above, a pile of such grog along with a limestone plate for its production was discovered in *room 7*. Only in a few rare cases (**D 22**, **D 46**, **D 77** and **D 81**) can we identify grog produced from handmade ceramics. Like the crushed rock, the grog was evidently not subjected to any form of calibration.

All the pastes prepared by tempering with potsherds and crushed rock are classified as coarse.

*Sand.* Sand as artificial temper to the paste was recorded in a considerable number of cases. In low concentration it may be regarded as a natural inclusion (sand interlayers dividing clay layers).<sup>4</sup> The mineralogical composition of the sand can vary very noticeably from one sample to another. Petrographic analysis has identified the following types of sand as additives: (1) quartz-feldspar sand with an inclusion of magmatic-type rocks (*A-2*, *A-5*); (2) quartz-feldspar sand with admixtures of shell-sand and minerals of magmatic origin (*A-37*); (3) shell-sand with a small inclusion of quartz, feldspar, and (or) oolitic limestone (*A-4*, *A-6*; Pl. 190, 1); (4) sand based on minerals of volcanic rock with small inclusions of quartz and feldspar.

Of all the types of sand enumerated, only type 3 can be connected with the local beach sands of the Bay of Yarylgach, which consist mainly of shell debris and oolitic kernels washed out from Neogene rocks during the break down of the latter.<sup>5</sup> By contrast, the quartz sands are peculiar to the coastal areas lying to the north of the Bay of Yarylgach (in the region of the Bakal spit), and mainly to the beach alluvia in the eastern part of the Bay of Eupatoria.<sup>6</sup> The latter area with its sands brought from the south by alluvial flows represents a distinctly different mineralogical province, the characteristic feature of which is a considerable content of pyroxenes.<sup>7</sup> In the case of type 1 sands used in the preparation of the pastes, the connection with the area to the south of Eupatoria is corroborated by the granulometric composition of the pastes and, first and foremost, by the presence of separate grains of quartz gravel in them (**D 104**). These grains, as has been noted by V.P. Zenkovič,<sup>8</sup> can be found within three or four kilometres of Eupatoria in the coastal alluvia, where the latter gradually yield to pebbly beaches.

Sands of type 4 are also foreign to the north-western shores of Tarkhankut. Inclusions of augite, zonal plagioclase, and basaltic hornblende, as well as of basaltic debris in their composition, are related to volcanic rocks. In the Crimea the latter are found in a number of separate areas along the Main Ridge between the Baidar Gate and Kara-Dag. The grains are virtually unsmoothed on the surface and thus offer no evidence of having been carried over any great distance to the alluvial and proluvial deposits formed by products of weathering.

As a result of analysis, the four main compositions of the clay pastes of the handmade ware from U6 have been identified. Depending on the use of a single artificial temper or several added nonplastics, the pastes may be divided into composite and unmixed. The pastes that have been composed according to the following formulae: 1) *clay + crushed rock*, and 2) *clay + sand*, belong to the unmixed type. The presence of different type of sand in the samples is not, in my opinion, a deliberate technological refinement, but merely reflects the migration of representatives of the same cultural and technological tradition, and their adaptation to new sources of raw materials. The two other formulae 3) *clay + potsherd + grass*, and 4) *clay + potsherd + crushed rock + grass*, are to be classified as composite pastes. The brief historical period during which building U6 existed (see Part I) and the conditions of the ceramic finds prevent us from tracing the development of these paste formulae over time. However, it seems quite probable, that formula (4) arose as a result of the interrelation of two different traditions represented by formulae (1) and (3).

*Shaping.* Shaping the vessels was the next stage in the production process. As observations show, the pottery was hand-formed by means of the traditional coiling technique. As a rule, the seams between the coils were obliterated by later finishing treatments, although in a number of cases (D 10, D 41, D 97) the disintegration of such seams could be observed (Pl. 134, *b-c*). Where it was possible to trace the individual stages of working the initial mass of paste (D 2, D 13, D 17, D 41, D 108), it could be seen that the forming of the pot began from the base.<sup>9</sup> The separately modelled rim was attached to the body after it had been completed. The surface of the vessel was smoothed with a wet cloth or a handful of grass (Pl. 134, *d-e*) and then covered with a decoration.

To facilitate the lifting of vessels from the working table, some shredded grass or straw was placed under the base. The imprints left by such material were more than once identified on the surface (Pl. 134, *f*).

It should be noted, however, that alongside the entirely hand-shaped items, some of the vessels also show evidence of limited use of the primitive potter's wheel, its rapid rotation being employed simply for modelling some of the rims and sometimes for finishing the surface. At the same time, the skill of sculpturally modelling of the hollow bodies of vessels was essentially retained (for example D 5, D 9-11, D 20, D 29, D 31, D 66, D 71, D 106, D 113-114, D 122, D 127); this is shown clearly in vessel D 20. Such features as a small depression (evidently the imprint of the wheel spindle) in the central area of the base (Pl. 135, *a*), a number of rapid rotation traces round the neck (Pl. 135, *b-c*), and long folds formed by flow of paste (Pl. 135, *d*), point to the use of a potter's wheel in the early stages of its development (the transitional period between the second and the third stage, according to the classification devised by Bobrinskij).<sup>10</sup>

*Decoration.* The individual techniques and types of decoration will be detailed below, when the various shapes of the handmade ware are described. We need only note here that the set of tools and appliances used for decorating was not large. It included: a knife, a two-to six-pronged comb, as well as wooden 'spikes' with straight- or slant-cut butt-ends, and a hollow tube, such as a reed or bone (Pl. 136). At the same time the bulk of ornamented vessels were decorated with the usual impressions produced by the thumb, finger, or fingernail.

In characterising the technology of manufacturing handmade pottery in U6, mention must also be made of a small group of vessels in which the surface was completely or partially polished after drying. The group includes D 35, D 101, D 104-109.

*Firing.* No pottery kilns or any other constructions for firing pottery were discovered during the excavation of Panskoye I. A considerable amount of hand-made pottery from U6 was evidently fired at rather low temperatures (below 700°C), as suggested by the greyish black or black colour of the clay in cross section, an effect produced by unburnt carbon soot. How-

ever, in the majority of cases we cannot be certain about the firing temperature. Only for those vessels where traces of dissociation of carbonaceous minerals have been observed in the clay may one be satisfied that firing took place at 800°C or higher.

An analysis of the main components of the manufacturing process for handmade pottery showed that, along with some common features of the technique used for different groups of ceramics, there was always something specific in them. Taking into account such criteria as the composition of the paste, the finish of the outer surface, and the type of decoration, the handmade pottery may be divided into four technological groups (TG) three mutually distinct and one hybrid group combining the features of several others.

1. Decorated and undecorated vessels with either coarse or polished surface. Decoration: combing or the 'spike' marks, with flange appliqués on the shoulder and body. The clay is grey, dark brown, or orange-brown. The paste is tempered with sand.
2. Decorated and undecorated vessels with coarse unpolished surface. Decoration: impressions made with thumb or finger along the vessel edge. The paste is tempered with crushed rock.
3. Both decorated and undecorated vessels. Decoration: cutting, thumb impressing, punctuation made with finger, or fingernail and/or other tools, as well as flange appliqués round the rim and shoulders. No polishing. The composite paste is tempered with crushed potsherds and plant material.
4. Vessels bearing the decorations characteristic of groups 2 and 3, or lacking any decoration. No polishing. The paste includes grog, crushed rock (limestone), and ground plant material in varying proportions.

The first three groups represent quite independent technological tendencies. However, the last TG, combining the features of the second and third groups, appears as a technological innovation. Taking into account that many of the technological peculiarities of primitive ceramics should be considered a manifestation of ethnic specificity,<sup>11</sup> this innovation may be explained by relatively long-term cultural and production contacts between different ethnic groups living as neighbours in the same locality.

The problem of ethno-cultural attribution of the different technological tendencies and traditions will be discussed below, after the morphological analysis and classification of the ceramics.

## CLASSIFICATION OF HANDMADE POTTERY

The classification of the handmade pottery was based on visually identifiable differences in the shape and decoration of the vessels.

### A. CLOSED SHAPES

TYPE 1. (**D 1-87**) *Pots* with rounded, bulbous body tapering towards the base, flat base, and out-curved rim. The maximum diameter (D) varies from 9.3 to 33.5 centimetres. The height (H) varies within a range from 10.0 to 33.0 cm. The base diameter ( $d_4$ ) is as a rule two-thirds of the vessel-mouth diameter ( $d_1$ ). The extent to which the rims curve outwards varies considerably and the rims themselves are either tapered, or rounded or ground flat on the top. The main



linear parameters show a correlation within a given type of vessel (Pl. 110). On the basis of these observations, three main size-groups of type 1 pots may, in my opinion, be distinguished: (a) large vessels ( $d_1 > 18.0$  cm,  $D > 23.0$  cm,  $d_4 \geq 12.0$  cm); (b) medium-sized ( $d_1 = 11.0$ -18.0 cm,  $D = 14.0$ -23.0 cm,  $d_4 = 8.0$ -12.0 cm); (c) small ( $d_1 < 11.0$  cm,  $D \leq 13.0$  cm,  $d_4 < 8.0$  cm).

The clear majority of the vessels have a rough, unpolished, fawn, grey, or black surface. The lower body of some of the medium-sized pots is covered with a great deal of soot, which suggests that this group was mainly used for cooking. The large-size vessels were more likely used for the storage of provisions.

About 40% of the pots of this type are decorated. Simple impressions produced by a thumb or finger and indentations made with a wedge-shaped stick, hollow reed, finger, or fingernail were set in one or two horizontal rows round either the rim or shoulder (Pl. 136, *a-b, f*). On some vessels both rim and shoulder are decorated. Along with this type of decoration, a decoration in the form of densely repeated knife cuts round the outer edge of the rim is common in type 1.

The small group of vessels decorated on the shoulder with an appliquéd flange (**D 68-70**) deserves special attention (Pls. 123-124, 136, *c-e*). In the north Black Sea area such a tradition, characteristic of the Archaic period, goes back to pottery of the Bronze Age. The finds from Panskoye I, however, proves that this type of decoration could still be in use even in the early Hellenistic period. On two examples the flange itself was decorated with close-set indentations made with a stick. All the vessels were found in the courtyard of building U6.

Coming back to the morphology of the type, we may distinguish three variants differentiated from one another by the shape of the neck as follows. *Variant A*: outwards curving neck. This group is the most numerous (**D 1-64**). Within the group some differences can be identified in the convexity of the bodies of the vessels. *Variant B*: out-turned neck clearly set off from the body. All the vessels of this group have medium-sized bulbous bodies (**D 65-85**). *Variant C* includes vessels with cylindrical neck. No complete shapes were found. The available fragments give an idea only about the profile of the upper part (**D 86-87**).

With the exception of *Variant-C* vessels belonging to TG4 only, pots of type 1 are represented in all the four technological groups.

In general, type-1 pots significantly outnumber the other types, amounting to about 67% of the total collection of handmade pottery from U6. Such a situation is typical not only for Panskoye I but also for all the Scythian sites between the Bug and Don rivers, and it is in the material from the latter region that this class of vessel finds its closest parallels. Likewise, pots of similar type considerably outnumber other shapes in the handmade pottery assemblages from Greek cities and the settlements in their agrarian territories throughout the area from Olbia to the Kimmerian Bosphoros.

The closeness of type-1 handmade pots from Panskoye I to vessels from the Scythian steppe sites shows itself not only in the range of shapes but also in the most common types and techniques of their decoration (knife cuts round the rim and shoulder, rows of finger and fingernail impressions, or indentations). However, certain types of decoration on the pots from Panskoye enable us to identify one or two specific features along with the common ones. Thus, for example, the presence of vessels decorated with an appliquéd flange on the shoulder suggests some connection with the region of the Lower Bug and the Dnieper, this technique of decoration being very typical of that region, though not wholly confined to it.<sup>12</sup>

**TYPE 2 (D 88)**. Undecorated *pots* with rounded, smoothly out-curved rim. This type is represented by a single specimen only. The colour of the clay is red-brown, appearing brown in thin section. The vessel belongs to TG1. The paste is distinctively tempered with shell sand with an admixture of quartz sand.

TYPE 3 (**D 89**). *A pot* with very short neck and rounded, out-curved rim. The type is represented by a single specimen only. The clay colour and the paste texture resemble those of type 2.

TYPE 4 (**D 104**). *Large Storage Jar*. Like the two preceding types this type is represented by a single specimen, the fragments of which were found in *room 3* and in the courtyard (square B-2). For vessels of this type the tall, relatively narrow neck and bulbous body with combed decoration are typical. The lower butt of an applied loop-shaped vertical handle is preserved at the level of the body's greatest diameter. The neck of the vessel is grey-polished. The paste was tempered with sand including quartz, augite, and basalt.

Fragments of handmade grey- or black-polished vessels with combed decoration that are very similar to the large type-4 pot from U6 are common enough (though not actually numerous) in the excavations in the Chersonesean *chora* and the city itself.<sup>13</sup> Such decoration is typical of the latest period of the Kizil-Koba culture;<sup>14</sup> and, besides the finds from Chersonesos<sup>15</sup> and its immediate vicinity on the Herakleian Peninsula,<sup>16</sup> fragments and even complete shapes of this pottery have been recorded in Kerkinitis;<sup>17</sup> at the settlement of Chaika; among the pottery from the farmhouses near the Eupatoria lighthouse;<sup>18</sup> at the settlement of Peschanka;<sup>19</sup> at the town-site of Yuzhno-Donuzlav;<sup>20</sup> at the settlement of Masliny<sup>21</sup> and in the unpublished material from the excavation of the farmhouse near the Bay of Vetrenaya. Isolated fragments of vessels with a similar decoration were found during excavation of Scythian Neapolis.<sup>22</sup>

TYPE 5 (**D 105**). *Large piriform Storage Jar*. The neck is tall and of a truncated cone shape. The body is spherical. The slightly out-curved rim is ground flat on top. Again, the type is represented by fragments of a single vessel only. The outer surface is black-brown and thoroughly polished. There is no decoration. The paste is typical of the TG1 group and was tempered with quartz sand with an addition of limestone sand. There is every reason to suppose that this type of large, polished storage jar has its origin in the so-called 'pear-shaped' vessels of the Kizil-Koba culture.<sup>23</sup>

TYPE 6 (**D 106-110**). *Jugs*. These vessels have a relatively tall neck with rounded out-turned rim. The mouth diameter varies from 9.0 to 11.0 cm. A vertical flattened handle is attached directly to the rim of the vessel. All the vessels of this type, with the exception of a single handle fragment (**D 110**), have a polished surface. The interior of the upper part of the vessels is burnished too. Quartz-limestone sand was used as temper for the paste. All the pottery of this type at U6, with the exception of **D 110**, was found in the courtyard.

TYPE 7 (**D 111**). *A scoop* with a rather short almost cylindrical neck and squat, radish-shaped body. The vertical loop-shaped handle is raised high above the rim. The vessel is unpolished. The composition of the paste is unknown. The only vessel constituting a basis for identifying this type comes from *room 13*. Some wheat was found in the scoop.

This shape has its origin as early as the late Bronze Age or early Iron Age, like types 4 and 5, and finds its closest parallels among the Kizil-Koba ceramics of the south-western Crimea.<sup>24</sup> A vessel from the 1964 excavation at the townsite of Chaika is also close to our specimen in both shape and date.<sup>25</sup>

## B. OPEN SHAPES

TYPE 8 (**D 112-115**). *Cooking pans* with out-curved lip, bulbous body, and convex base. All the vessels have a flange to accommodate the lid. The horizontal loop-shaped handle may be raised above the rim or be at the same level as the latter. For this type, a coarse unpolished surface is typical. The parameter values for  $d_1$  vary from 18.5 to 22.0 cm.

This shape undoubtedly belongs among a number of types of handmade wares that imitate Greek wheel-thrown ceramic vessels.

Handmade cooking pans imitating Hellenistic wares are well known from the excavations of Greek centres in the north Black Sea region.<sup>26</sup> In addition, the presence of this type among the handmade pottery from the townsite of Elizavetovskoye should be noted.<sup>27</sup>

The first appearance of similar handmade forms in pottery from Olbia can be assigned to the second half or the end of the 4<sup>th</sup> century B.C. However, according to K.K. Marčenko, production of such imitations actually began in the Lower Bug region in the late Archaic period.<sup>28</sup>

TYPE 9 (**D 116-125**). *Bowls* with rounded body, and off-set or incurved rim. The rims are variously shaped, being either rounded, sometimes flattened on a primitive potter's wheel. The rim diameter varies from 19.0 to 33.5 cm. It is not possible to formulate any definitive ideas about the shape of the base owing to a lack of complete vessels.

Decoration and burnish are not typical for this type, though a thorough smoothing of the surface by means of a rapidly rotating wheel can be observed on some specimens (**D 119**, **D 122**) (Pl. 137, *a*).

This type is among the most frequent of the handmade shapes found at the settlement, being second only to pots of type 1. Ten vessels of this type are recorded from U6.

Judging from the available material, this type of handmade pottery was used at Panskoye I from at least the second half of the 4<sup>th</sup> century B.C. up to the last days of the settlement's life. It is fairly probable that the upper date will need substantial correction, once the more ancient layers of the site have been investigated.

Similar bowls were of fairly widespread occurrence during the Scythian ascendancy, extending over almost the whole steppe zone of the northern Black Sea coasts. However, they played different roles in the ceramic assemblages of different regions.

As N.A. Gavriljuk points out, the majority of the Scythian burials containing this type of bowl is concentrated in the Lower Dnieper region.<sup>29</sup> Such bowls are much less common in Olbia and settlements of the Lower Bug,<sup>30</sup> and to all appearances, the type did not play any significant role in the ceramic complex of the inhabitants of the Don region.<sup>31</sup> Unfortunately, the handmade pottery of Chersonesos and its immediate surroundings still remains unpublished; thus we do not yet have enough material at our disposal to make any comparisons. The type-9 vessels from U6 are not uniform in terms of their technological group, though the majority of the bowls were made of clay tempered with sand. This fact suggests their closeness to ceramics of the Kizil-Koba type (types 2, 3, 4, 5, 6, 7 above), which were very similar in composition.

TYPE 10 (**D 126**). *Salt-cellars*. This type is represented by a single specimen (of TG2) in the shape of an upturned truncated cone with a tapered rim. The surface of the vessel is coarse and without decoration.

Morphologically this type may be compared with handmade bowls of truncated-cone shape. Such bowls were widespread in the second half of the first millennium B.C. throughout almost the whole of the northern Black Sea region. Individual finds of such bowls were

recorded more than once in the funerary sets of Scythian kurgan burials in the steppe zone,<sup>32</sup> as well as in those of the Elizavetovskoye and Aktash burial sites;<sup>33</sup> and similar bowls are known from 3<sup>rd</sup>-2<sup>nd</sup> century B.C. Myrmekion.<sup>34</sup> But first and foremost this shape is represented among the pottery from the Elizavetovskoye town-site, where the upturned truncated-cone shape accounted for 90% of all bowls.<sup>35</sup> They are also recorded from the Kamenskoye town-site.<sup>36</sup> At the same time, this type of bowl is relatively rare at the sites of the Lower Bug region. For example, in Olbia this shape is represented by a single specimen only, dated broadly to the period from the 5<sup>th</sup> to 2<sup>nd</sup> century B.C.<sup>37</sup>

TYPE 11 (**D 127**). A hemispherical *mortar* with sharply out-curved rim. The type is represented by a single specimen only, found in the courtyard (square B-6). The surface of the vessel is thoroughly smoothed. The paste composition is typical of TG2 ceramics. The vessel undoubtedly imitates the shape of Greek wheel-thrown mortars.

### C. SPECIAL SHAPES

TYPE 12 (**D 128-129**). Cone-shaped *lids* with a 'knob-shaped' handle. This type is represented by two specimens. The paste composition identified for one of the vessels belongs to TG4.

TYPE 13 (**D 130**). *Altars*. The single specimen belonging to this type comes from the household sanctuary (*room 12*), and is represented by a small bowl-shaped altar on a high foot. The paste was tempered with sandstone sand.

An exact parallel to our example, both in shape and dimensions, is to be seen in a find from the building-period II level (room D, inventory list no. Ch. 63/430) in the Chersonesean settlement of Chaika situated to the west of Eupatoria.<sup>38</sup> Another object similar to ours comes from the 1965 excavation at Chaika, where it was found in the building-period III level (end of the 2<sup>nd</sup> century B.C.; room VIII);<sup>39</sup> and a small altar from the late Scythian town-site of Bulganak is evidently of the same date.<sup>40</sup> In the neighbourhood of Olbia such objects correspond to a still later period (late 1<sup>st</sup> century B.C. to mid-2<sup>nd</sup> century A.D.).<sup>41</sup> Although miniature handmade items of this type are known in the archaeological literature under the name of 'incense burners' or 'lamps' they were actually neither the one nor the other: the absence of any traces of burning is evidence of that. The fact that the only example of type 13 found at Panskoye I comes from the household sanctuary confirms the use of this shape as an altar.

One of the principal aims in studying plain handmade ware is, of course, to determine the intended functions of the various shapes. On the basis of their normal household purposes, the majority of the types described above may be tentatively divided into the following traditional groups: (a) cooking ware (the medium and small examples of types 1 to 3, and cooking pans of type 8); (b) tableware (bowls, salt-cellars, *etc.*); (c) household pottery, including storage vessels (large-size type-1 pots, large storage jars, scoops, mortars, *etc.*); (d) religious objects (altars).

Some researchers have attempted a considerably more detailed classification of Scythian handmade pottery according to function – seeking to distinguish the individual types of vessel used for the cooking and serving of meat, or vegetables, or milk products, *etc.*<sup>42</sup> However, such an identification is to a large extent arbitrary, because of the possible polyfunctionality of some of the shapes.

In considering the question of the main ethno-cultural components of the handmade ceramics from Panskoye I/U6, it is necessary to compare the results of the technological and



morphological analyses discussed above. As became evident from the investigation of the vessel shapes, decoration, and traditions of paste preparation, three large though unequal groups of handmade ware are to be distinguished. The first and most numerous group (types 1, 9, 10, 12) includes mainly those vessels representing the well-known Scythian shapes that were typical of the entire steppe zone of the northern Black Sea region between the Don and Dniester rivers. All these items belong to TG 2, 3, and 4.

The second group comprises polished and unpolished vessels often ornamented with applied or combed decoration (types 2, 3, 4, 5, 6, 7), all of which, without exception, belong to TG1. Both the shapes and the ornamentation of this ware, together with the use of some typical technical methods, enable us to connect this group in general with the ceramics of the late period of the Kizil-Koba culture (according to the periodisation system developed by A.M. Leskov). In the light of their technological identity (TG1), the series of undecorated vessels of types 1 and 9 (morphologically close to ceramics of 'Scythian' appearance) should probably also be assigned to the Kizil-Koba group (**D 8-11, D 48, D 61, D 68, D 70, D 118-119, D 122-123**). There can be little doubt that the appearance of this second group of pottery at Panskoye I is to be connected with the penetration of Chersonesean colonists together with some Taurian or Tauro-Scythian population dependent upon them. However, it cannot be ruled out that certain elements of this culture could have existed on this site even earlier. Only an investigation of the more ancient levels of the settlement will provide an answer to the question.

The third group of handmade vessels comprises items that, to a greater or lesser extent, imitate Greek wheel-thrown ceramics.<sup>43</sup> This group includes types 8 and 11, and in those cases where it was possible to identify the composition of the clay paste, we found we were dealing with TG 2. The presence of such imitations suggests not only the close acquaintance of the local potters with the main forms of Greek pottery but also the rather common everyday use of the latter by the non-Greek element among the inhabitants of Panskoye I.

However, another explanation of these imitations is also possible. As is clear from the numerous finds of lead clamps and vessels with repair-holes (*cf.* **K 6-12, B 50, B 59, B 99, B 107-109, B 116, B 121, B 124-125, B 144, B 152, B 156-157, B 162, B 165, B 208, B 211, B 220, B 223, B 225, C 44, C 54, C 57, C 62, C 66, C 71, C 73, C 87, C 127, C 196, C 198, C 203-205, C 207, C 221, C 224, C 240, C 257**), the household at U6 lived in rather poor circumstances. Because of the relative poverty of most of the Panskoye I population and the high cost of imported ceramics, as suggested by the graffiti (see **H 39, H 41, H 44(b)**), broken or damaged ware could not be immediately replaced by fine quality Greek products, and secondary use of the pottery, after mending solved shortages in part only. The ware intended for cooking hot food was obviously not at all suitable for repairing, since the lead used for mending has too low a melting-point. It therefore seems quite probable that in such circumstances the deficit of more 'costly' ware could have been made up with locally produced handmade pottery.

It has already been mentioned above that, besides the continued employment of the sculptural modelling technique, a number of vessels (including types 8, 11) show traces of the use the potter's-wheel at the early stage of its development (DWF<sup>44</sup> 2-3, according to Bobrinskij). This fact suggests a more advanced economic stage of pottery production than that required to satisfy mere domestic needs – and hence a wider circle of buyers. Therefore, the appearance of imitations of Greek wheel-thrown pottery was probably the potters' response to the demands not only of the ethnically related collectives but also to willing Greek buyers among the inhabitants of the settlement.

On the basis of what has been said above, two main routes or original vectors along which the penetration of the non-Greek ethno-cultural and technological traditions identified for the ceramic assemblage of U6 took place may be singled out with a fair degree of cer-

tainty: the north-western route – from the steppe of the Bug and Dnieper regions – and the southern one – from the western (south of Kerkinitis) and south-western Taurica and the immediate surroundings of Chersonesos. Accordingly, the question of the ethnic origin of the bearers of these traditions also finds its solution. We should note among the inhabitants of Panskoye I the much higher degree of Hellenization of the Scythian element (though we are probably dealing here with a highly interbred Graeco-Scythian population) when compared with the representatives of the Taurian ethnoses that had been brought to the site. This is clearly reflected both in the general cultural features of the settlement and in the material from its associated necropolis.

## CATALOGUE

See Pl. 109 for measuring points of D, d<sub>1-4</sub> and H, h<sub>1-2</sub>.

### POTS

#### Type 1A

##### 1A-1. Large Vessels

**D 1.** U6 courtyard. 1972. Pl. 111.

Large pot decorated with finger impressions on the rim; linear finger impressions on the shoulder. The surface is black-coloured on the upper part of the vessel and brown on the lower part.

Fabric: clay tempered with crushed potsherd.

Dimensions: d<sub>1</sub> 22.5 cm; d<sub>2</sub> 21.5 cm; d<sub>3</sub> 23 cm; d<sub>4</sub> 14.5 cm; D 33 cm; H 28 cm; h<sub>1</sub> 3.7 cm; h<sub>2</sub> 6 cm.

**D 2.** U6 room 12. Find list 6/39. 1971. *Thin section A-16*. Pl. 111.

Large fragmented pot (125 fragments). The rim is flattened on top, and decorated with closely set finger impressions. At the junction of the base and wall characteristic 'burrs' protrude, indicating that the pot was formed from the base upwards. Well-fired dense clay, uniformly fawn on the surface and in cross section.

Fabric: clay tempered with crushed limestone, potsherds, and fine quartzite.

Dimensions: d<sub>1</sub> 20 cm; d<sub>2</sub> 19 cm; d<sub>3</sub> 20 cm; d<sub>4</sub> 14 cm; D 33.5 cm; h<sub>1</sub> 4.3 cm; h<sub>2</sub> 9 cm; H c. 33 cm.

Find-spot: in the breakdown of the hearth, at the sides and inside.

**D 3.** U6 room 20. Find list 4/38. 1972. Pl. 111.

Large pot decorated with finger impressions around the rim. Irregularly fired, the surface is dappled, ranging from yellow-brown to black.

Fabric: clay tempered with considerable admixtures of crushed potsherd; occasional pores evidently indicate tempering with calcite that has been burnt, or leached, out.

Dimensions: d<sub>1</sub> 20 cm; d<sub>2</sub> 18 cm; d<sub>3</sub> 18.5 cm; d<sub>4</sub> 13 × 14.5 cm; D 28 cm; H 29 cm; h<sub>1</sub> 4.3 cm; h<sub>2</sub> 10 cm.

Find-spot: on the floor in the west corner of the room.

**D 4.** U6 room 20. Find list 4/39a. 1972. *Thin section A-15*. Pl. 111.

Fragmented pot, lacking base. The rim is rounded, and smoothly out-curved. Decoration: linear finger indentations on the shoulder. The sherd is bi-coloured in cross section: yellow-brown outside, black inside. Numerous imprints of shredded plants are visible on the surface.

Fabric: clay tempered with coarsely crushed potsherd (particles up to 6 mm) and shredded plants.

Dimensions: d<sub>1</sub> 15 cm; d<sub>2</sub> 13 cm; d<sub>3</sub> 15 cm; D 30 cm; h<sub>1</sub> 5 cm; h<sub>2</sub> 9 cm.

**D 5.** U6 room 16. Find list 10/12. 1971. Pl. 112.

Large undecorated pot: rim and base fragments only. A potter's wheel was used in part for modelling the upper profile of the vessel. The rim is flattened on top. All sherds acquired a homogeneous orange colour as a result of a secondary high-temperature firing (in an accidental fire?); the rim fragments have been deformed by fire.

Fabric: clay tempered with a considerable quantity of crushed potsherd.

Dimensions: d<sub>1</sub> 19 cm; d<sub>2</sub> 17 cm; d<sub>3</sub> 18 cm; d<sub>4</sub> 12 cm; D c. 27 cm; H 28 cm; h<sub>1</sub> 6.5 cm.

**D 6.** U6 courtyard. 1972. Pl. 112.

Pot: fragments of a massive rim and neck. Decoration: deep fingernail indentations under the rim. The colour of the clay is variable: fawn to red-brown; the upper part of the rim black.

Fabric: clay tempered with coarsely ground potsherd (particles up to 6 mm) and crushed limestone.

Dimensions: d<sub>1</sub> c. 20 cm; d<sub>2</sub> c. 18.5 cm; d<sub>3</sub> c. 20.5 cm; h<sub>1</sub> 5 cm.

**D 7.** U6 room 13. Find list 8/46. 1971. *Thin section A-8*. Pl. 112.

Upper body of a large pot lacking any significant salience of profile. The rim is rounded. Decoration: linear fingernail indentations in two rows under the rim and on the shoulder, evidently made by a female hand as may be judged from their size.

Fabric: clay tempered with crushed potsherd.

Dimensions: d<sub>1</sub> 22.5 cm; d<sub>2</sub> 19.5 cm; d<sub>3</sub> 20 cm; D 26 cm; h<sub>1</sub> 7.0 cm; h<sub>2</sub> 12 cm.

Find-spot: on the floor, on top of louterion **C 82**.

**D 8.** U6 courtyard, V-4, 5. 1973. Pl. 113.

Large vessel: fragments of a boldly out-curved rim and wall only. The rim is rounded, partly flattened from outside. The clay is red-brown with numerous fine pores left by limestone leaching out during cleaning.

Fabric: clay tempered with limestone sand with admixtures of quartz.

Dimensions: d<sub>1</sub> 32 cm; d<sub>2</sub> 24.5 cm; d<sub>3</sub> 25 cm; h<sub>1</sub> 6 cm.

**D 9.** U6 courtyard, V-4. Find list 1. 1973. Pls. 113 and 135, *d*. Large pot: rim (about 90° preserved) and neck fragments only. The rim was flattened on top, resulting in the formation of a peculiar excrescence on the outside.

Fabric and firing are similar to those of vessel **D 89**.

Dimensions: d<sub>1</sub> 24 cm; d<sub>2</sub> 20 cm; d<sub>3</sub> *c.* 21 cm; h<sub>1</sub> 5 cm.

**D 10.** U6 courtyard, V-4, 5. 1975. *Thin section A-26*. Pl. 113.

Pot: rim (about 90° preserved) and body fragments. The rim was partly flattened on a wheel, resulting in the formation of peculiar excrescences on the outside and inside. Traces of the coil junctions are not completely smoothed down on the outside. The vessel is distinguished by the skilful firing that is characteristic of the Kizil-Koba type pottery. The clay surface is of a regular red-brown colour.

Fabric: clay tempered with fine shell-rock sand.

Dimensions: d<sub>1</sub> 19 cm; d<sub>2</sub> 16.5 cm; d<sub>3</sub> 17.2 cm; h<sub>1</sub> 6 cm.

It is highly likely that the pot was made by the same potter as vessels **D 11** and **D 88**.

**D 11.** U6 courtyard V-4. 1975. *Thin section A-31*. Pl. 113.

Pot: fragments of strongly out-curved rim. The rim edge was flattened with the aid of a rotating wheel. The clay is grey-black on the surface and well smoothed.

Fabric: clay tempered with limestone-quartz sand and crushed potsherd.

Dimensions: d<sub>1</sub> *c.* 21 cm; d<sub>2</sub> *c.* 17 cm.

The vessel was evidently made by the same potter as **D 10** and **D 88**.

*1A-2. Medium-sized Vessels**a) with maximum diameter in the upper section***D 12.** U6 room 7. Find list 1/45. 1971. Pl. 113.

Pot with a rounded rim decorated with nips. The lower body of the vessel is blackened with soot.

Fabric: clay tempered with finely ground potsherd and crushed rock.

Dimensions: d<sub>1</sub> 14 cm; d<sub>2</sub> 12 cm; d<sub>3</sub> 13 cm; d<sub>4</sub> 9.5 cm; D 21 cm; h<sub>1</sub> 3 cm; h<sub>2</sub> 6 cm; H 21.5 cm.

Find-spot: on a pile of fired clay in the southern corner.

**D 13.** U6 room 16. Find list 10/12. 1971. Pl. 114.

Pot: fragments of rim (approx. 100° preserved) and bottom (approx. 180° preserved) with part of the lower body joining the base. The rounded rim is smoothly out-curved; no decoration. The whole vessel is distinguished by black-coloured clay (both inside and out) except for a fawn shade on the outside of the rim.

Fabric: clay tempered with ground potsherd and calcite.

Dimensions: d<sub>1</sub> 13 cm; d<sub>2</sub> 12.2 cm; d<sub>3</sub> 13 cm; d<sub>4</sub> 8.5 cm; D *c.* 16 cm; h<sub>1</sub> 3 cm.

**D 14.** U6 courtyard, B-6. Find list 16/112. 1972. Pl. 114.

Pot: rim (approx. 120° preserved) and base (approx. 180° preserved). The undecorated rim is slightly flattened on top. The clay is of variable colour: fawn and black on the outside and grey in cross section.

Fabric: clay tempered with approximately equal amounts of ground potsherd (particles up to 3 mm) and crushed limestone (dissolved during cleaning in HCl) with particle size up to 4 mm.

Dimensions: d<sub>1</sub> 14.5 cm; d<sub>2</sub> 13.2 cm; d<sub>3</sub> 14 cm; h<sub>1</sub> 5.2 cm.

**D 15.** U6 room 16. Find list 10/12. 1971. Pl. 115.

Fragmented pot with a low, rounded rim; no decoration.

Fabric: clay tempered with ground potsherd.

Dimensions: d<sub>1</sub> 12 cm; d<sub>2</sub> 11 cm; d<sub>3</sub> 12 cm; d<sub>4</sub> 9 cm; D *c.* 17 cm; h<sub>1</sub> 3.5 cm; h<sub>2</sub> 5 cm; H *c.* 19 cm.

**D 16.** U6 well, no. 207. 1977. *Thin section A-30*. Pl. 115.

Pot: rim and base fragments. The clay is black both on the surface and in cross section, and is blackened with soot on the outside. Inside, both on the bottom and the rim there are traces of a reddish violet pigment that was evidently kept in the vessel.

Fabric: lean clay tempered with crushed organogenic limestone.

Dimensions: d<sub>1</sub> 18 cm; d<sub>2</sub> *c.* 16 cm; d<sub>3</sub> 17 cm; d<sub>4</sub> 12 cm; D *c.* 21.5 cm; h<sub>1</sub> *c.* 5 cm; H *c.* 22 cm.

**D 17.** U6 courtyard, B-6. Find list 16/112. 1972. Pl. 116.

Pot: fragments of rim (approx. 45° preserved), shoulder, and base (approx. 360° preserved). The rim is slightly flattened on top, and there is a linear finger-tip indentation on the shoulder. Traces of smoothing the surface on a wheel are visible on the interior of the shoulder. Peculiar burrs protrude at the point where the base is stuck to the body. The vessel surface is mainly of a dark grey colour, but fawn near the base.

Fabric: clay tempered mostly with ground potsherd.

Dimensions: d<sub>1</sub> *c.* 16 cm; d<sub>2</sub> 13.3 cm; d<sub>3</sub> 14 cm; d<sub>4</sub> 10.5 cm; D *c.* 21 cm; h<sub>1</sub> 5 cm; H *c.* 24 cm.

*b) with maximum diameter in central section***D 18.** U6 courtyard, B-6. Find list 16/162. 1972. Pl. 116.

Fragmented pot, lacking base. The rim is flattened on top, and beneath its edge there is a peculiar clay excrescence.

Dimensions: d<sub>1</sub> 18 cm; d<sub>2</sub> 15.5 cm; d<sub>3</sub> 17 cm; D 22.5 cm; h<sub>1</sub> 4.8 cm; h<sub>2</sub> 6 cm.

Find-spot: close to the filling of a doorway.

**D 19.** U6 room 32. Find list 3/5. 1973. Pls. 117 and 137.

Massive thick-walled pot ornamented with nips along the rim. The surface is yellow-brown and brown.

Fabric: clay tempered with large quantities of ground potsherd.

Dimensions: d<sub>1</sub> 14 cm; d<sub>2</sub> 12 cm; d<sub>3</sub> 13 cm; d<sub>4</sub> 9 cm; D 17 cm; h<sub>1</sub> 4 cm; h<sub>2</sub> 5 cm; H 19 cm.

Find-spot: on the floor.

**D 20.** U6 room 13. Find list 8/44. 1971. *Thin section A-11*. Pls. 117, 134, *d-e*, 135, *a-c* and 137.

Pot with rounded and smoothly out-curved rim. The vessel

illustrates the transitional phase between the 2<sup>nd</sup> and 3<sup>rd</sup> stages of development of the potter's wheel (DWF) according to A.A. Bobrinskij's classification.<sup>45</sup> Traces of the spill for separating the vessel from the modelling tray can be observed on the base and a deepening is visible in the centre (evidently an imprint of the wheel's axis). There is evidence of horizontal ridges formed in the process of shaping the vessel on the wheel, and a long wrinkle of protruding clay formed by the process of modelling the profile with partial use of the wheel is visible too. Some traces of manual smoothing of the surface are also present. The clay is well fired. The surface is fawn on the outside (with a large black spot on one side) and orange-brown inside.

Fabric: lean clay tempered with crushed organogenic limestone, quartz, and ground potsherd.

Dimensions: d<sub>1</sub> 12 cm; d<sub>2</sub> 10 cm; d<sub>3</sub> 11 cm; d<sub>4</sub> 8 cm; D 16.5 cm; h<sub>1</sub> 3.3 cm; h<sub>2</sub> 6 cm; h<sub>3</sub> 9 cm; H 18 cm.

Find-spot: on the floor.

**D 21.** U6 courtyard, V-4. Find list 1/52. 1975. *Thin section A-24*. Pls. 118 and 136, *b*.

Fragmented pot. The rim is rounded and decorated along the edge with knife notches. On the neck there is a row of shallow nicks made with a knife-point. The clay is grey in cross section, fawn and light brown on the surface.

Fabric: lean clay (with a high content of aleurite) tempered with ground potsherd and crushed limestone.

Dimensions: d<sub>1</sub> 11 cm; d<sub>2</sub> 9.5 cm; d<sub>3</sub> 10.2 cm; d<sub>4</sub> 9 cm; D *c.* 15 cm; h<sub>1</sub> 4 cm; h<sub>2</sub> *c.* 4 cm; H *c.* 17 cm.

**D 22.** U6 courtyard, Zh-3. 1973. *Thin section A-12*. Pls. 118 and 137.

Fragmented undecorated pot, base lacking. The clay is of a regular dark grey colour.

Fabric: clay tempered mainly with ground potsherd.

Dimensions: d<sub>1</sub> 12 cm; d<sub>2</sub> 10.4 cm; d<sub>3</sub> 11 cm; h<sub>1</sub> 2.3 cm; h<sub>2</sub> 5 cm; D 15.4 cm.

**D 23.** U6 room 12. Find list 6/41. 1971. Pl. 118

Pot: fragments of the upper body. The rim is rounded and has no decoration.

Dimensions: d<sub>1</sub> 11 cm; d<sub>2</sub> 10.4 cm; d<sub>3</sub> 10.8 cm; D 15.5 cm; h<sub>1</sub> 2.3 cm; h<sub>2</sub> 4.7 cm.

Find-spot: in the northern corner of the room.

**D 24.** U6 room 12. Find list 6/41a. 1972. Pl. 118.

The upper body of an undecorated pot. The clay is black in cross section; the surface is grey, light brown, and black.

Fabric: clay tempered with finely ground potsherd and shredded plants.

Dimensions: d<sub>1</sub> 12 cm; d<sub>2</sub> 10 cm; d<sub>3</sub> 11 cm; D 14 cm; h<sub>1</sub> 3 cm; h<sub>2</sub> 4 cm.

Find-spot: the northern corner of the room.

**D 25.** U6 courtyard, V-4. 1973. Pl. 118.

Fragmented broad-based pot; the rim is rounded and has no decoration.

Regularly fired. Clay orange-brown, friable, and with numerous pores.

Fabric: clay tempered with crushed limestone.

Dimensions: d<sub>1</sub> 13 cm; d<sub>2</sub> 11.7 cm; d<sub>3</sub> 12.7 cm; d<sub>4</sub> 10 cm; D *c.* 17 cm; h<sub>1</sub> 3 cm; h<sub>2</sub> *c.* 4 cm; H *c.* 15.5 cm.

**D 26.** U6 courtyard. 1975. Pl. 118.

Pot: fragments of rounded undecorated rim (approx. 50° preserved) and base (approx. 15°). Clay grey-black both on the surface and in cross section.

Fabric: clay tempered with coarsely ground potsherd (particles up to 4 mm) and crushed limestone (grains up to 2 mm).

Dimensions: d<sub>1</sub> 13 cm; d<sub>2</sub> 11.3 cm; d<sub>3</sub> 12 cm; d<sub>4</sub> *c.* 9.5 cm; D *c.* 15 cm; h<sub>1</sub> 4 cm; h<sub>2</sub> *c.* 9 cm; H *c.* 16 cm.

**D 27.** U6 courtyard, V-4. 1975. *Thin section A-7*. Pl. 119.

Pot: fragments of upper body with rounded rim; no decoration. The clay is three-layered in cross section: dark grey (10YR 4/1) in the middle, very pale brown (10YR 8/3) on the surface.

Fabric: lean clay (with a high content of aleurite) tempered with coarse grains of basalt.

Dimensions: d<sub>1</sub> 12 cm; d<sub>2</sub> 10.4 cm; d<sub>3</sub> 11 cm; D *c.* 18.5 cm; h<sub>1</sub> 3 cm; h<sub>2</sub> *c.* 7.5 cm.

**D 28.** U6 room 33. Find list 4/9. 1973.

Fragmented pot, decorated with finger indentations along the lip. The clay colour varies from light brown to black, and is grey in cross section.

Fabric: clay tempered with potsherd and finely pounded plants.

Dimensions: d<sub>1</sub> 16 cm; d<sub>2</sub> 14.5 cm; d<sub>3</sub> 15.5 cm; d<sub>4</sub> 9.5 cm; D *c.* 22 cm; h<sub>1</sub> 5.5 cm.

Find-spot: the floor.

*c) place of maximum diameter impossible to determine*

**D 29.** U6 courtyard, V-4. Find list 1/50. 1973. Pl. 119.

Pot: fragmented high rim (*c.* 270° preserved). Decorated with oblique impressions made with a stick along the outer edge. In the process of flattening the outside of the rim a clay excrescence formed, apparently indicating partial use of a potter's wheel for modelling the profile of the upper body. The clay surface is spotted (grey, fawn, orange).

Fabric: clay tempered mainly with ground potsherd; inclusions of crushed limestone are also visible.

The fabric, firing, and decoration peculiarities are similar to those of vessels **D 37** and **D 40**.

Dimensions: d<sub>1</sub> 16.5 cm; d<sub>2</sub> 14.5 cm; d<sub>3</sub> 18 cm; h<sub>1</sub> 8 cm.

**D 30.** U6 courtyard, V-4, V-5. 1975. *Thin section A-28*. Pl. 119.

Pot: rounded rim and neck fragments. The outer edge of the rim is decorated with oblique impressions made with a blunt stick or knife-back. The clay is three-layered in cross section: grey in the middle, orange-brown on the surface.

Fabric: lean clay (with a high content of aleurite) tempered with ground potsherd; scattered pores on the surface evidently indicate the presence of crushed limestone in the paste. Probably some admixtures of shredded plants were also added.

Dimensions: d<sub>1</sub> 15 cm; d<sub>2</sub> 13.5 cm; d<sub>3</sub> 15 cm; h<sub>1</sub> 5 cm.

**D 31.** U6 room 9. Find list 3/23. 1971. Pl. 119.

Rim, shoulder, and body fragments of a pot. Beneath the rim edge a distinctive clay excrescence is visible as a result of flattening on a wheel. The shoulder is decorated with a row of finger impressions. One of the wall sherds has been



drilled evidently for repair purposes. The diameter of the hole is 2 mm. The clay is grey in section and light brown on the surface, with black-coloured spots.

Fabric: clay tempered with ground potsherd, crushed limestone, and shredded plants of which numerous imprints are also visible on both the internal and external surfaces of the sherds.

Dimensions:  $d_1$  13 cm;  $d_2$  11.6 cm;  $d_3$  12.8 cm;  $h_1$  3.5 cm.

Find-spot: on the floor in the northern corner of the room.

**D 32.** U6 courtyard, B-6. Find list 16/114. 1972. Pl. 120.

Pot: rounded rim fragments (*c.* 90° preserved). The clay is irregularly coloured: grey, fawn, red-brown inside; grey, fawn, and yellow outside; grey in cross section.

Fabric: mainly coarse crushed limestone (particle size up to 6 mm) was used for tempering the clay, with medium-sized ground potsherd with the grain size up to 2 mm as additional temper.

Dimensions:  $d_1$  13 cm;  $d_2$  11.2 cm;  $d_3$  13 cm;  $h_1$  5 cm.

**D 33.** U6 courtyard, B-6. Find list 16/114. 1973 + U6 courtyard, V-4. Find list 1. 1975. Pl. 120.

Pot: two fragments of rounded rim (*c.* 70° preserved). Decoration: finger and fingernail impressions along the outer edge. The clay surface is grey inside and grey-brown outside.

Fabric: clay includes coarsely ground potsherd (particles up to 4 mm). Scattered pores left by leached out limestone are also present on the surface and in section.

Dimensions:  $d_1$  13 cm;  $d_2$  11 cm.

**D 34.** U6 courtyard, V-4. 1975 + U6 room 7. Find list 1/47. 1971. Pl. 120.

Pot: rounded rim decorated beneath the edge with fingernail impressions.

Fabric: clay tempered with considerable admixtures of ground potsherd containing pyroxenes.

Dimensions:  $d_1$  11.5 cm;  $d_2$  10.5 cm;  $d_3$  11 cm;  $h_1$  3 cm.

**D 35.** U6 room 13. Find list 8/49. 1971. *Thin section A-23*. Pl. 120.

Pot: fragments of rim (approx. 45° preserved) and walls of the lower part of the vessel. The rim is rather low, rounded, and smoothly out-curved; no decoration. The surface of the vessel was thoroughly polished both inside and out (the polish being matt outside and lustrous inside). The clay near the rim is black in cross section. The clay and polish are red-brown (no lustre on the outside). On the inside a black spot is visible that runs through almost the whole thickness of the sherd.

Fabric: clay tempered with crushed limestone and quartz sand.

Dimensions:  $d_1$  11.5 cm;  $d_2$  10.9 cm;  $d_3$  11.5 cm;  $h_1$  3 cm.

**D 36.** U6 room 16. Find list 10/12. 1971. Pl. 120.

Pot: fragment of a rim. There are rather shallow nips beneath the edge. The clay is very dense and resonates on striking. The colour is light brown.

Dimensions:  $d_1$  15 cm;  $d_2$  14.2 cm;  $d_3$  15 cm;  $h_1$  3 cm.

**D 37.** U6 courtyard, V-4, 5. Find list 1. 1975. Pl. 120.

Pot: fragments of a high rim slightly out-curved (approx. 70° preserved). The rim has been flattened on top, and decor-

ated round the outer edge with slanting impressions made with a stick or knife-back.

The fabric, clay colour, and decoration are similar to those of vessels **D 29** and **D 40**.

Dimensions:  $d_1$  17 cm;  $d_2$  16.2 cm;  $d_3$  17 cm;  $h_1$  7 cm.

**D 38.** U6 courtyard, B-6. Find list 16/114. 1972. Pl. 120.

Pot: two joining fragments of rounded rim (approx. 55° preserved); no decoration. Clay light brown outside and grey inside.

Fabric: clay tempered with ground potsherd and crushed limestone.

Dimensions:  $d_1$  *c.* 16 cm;  $d_2$  *c.* 14 cm.

**D 39.** U6 room 4. Find list 4/16. 1969 + U6 courtyard, B-6. Find list 16/114. 1972. Pl. 120.

Pot: fragments of rim flattened on top (approx. 95° preserved). Clay grey and black.

Fabric: clay tempered with ground potsherd and crushed limestone.

Dimensions:  $d_1$  18 cm;  $d_2$  16.6 cm;  $d_3$  17 cm;  $h_1$  5 cm.

**D 40.** U6 courtyard, D-6. Find list 17/108. 1972. Pl. 120.

Pot: fragments of rim (*c.* 70° preserved) flattened on top and decorated round the outer edge with slanting impressions made with a stick or knife-back. The clay is yellow both on the surface and in cross section.

Fabric, firing peculiarities and decoration are similar to those of vessels **D 29** and **D 37**, which perhaps indicates the same potter.

Dimensions:  $d_1$  11 cm;  $d_2$  9.6 cm;  $d_3$  10.5 cm;  $h_1$  3.5 cm.

#### 1A-3. *Small Vessels*

**D 41.** U6 courtyard. 1975. *Thin section A-29*. Pl. 120.

Fragmented thin-walled pot (approx. 200° of the rim and 360° of the base are preserved). The rim is rounded and has no decoration. The wall fragments indicate exfoliation of coil junctions. The firing is irregular. The clay colour varies both on the surface and in cross section (grey, black, fawn, brick-red). Numerous small and very large pores (as well as actual holes) left by the process of leaching out of limestone during cleaning are visible on the surface and in section.

Fabric: lean clay (with a high content of silt) tempered with coarse crushed limestone (particle size up to 6 mm).

Dimensions:  $d_1$  10.6 cm;  $d_2$  8.9 cm;  $d_3$  9.8 cm;  $d_4$  7.5 cm;  $D$  12.7 cm;  $h_1$  3 cm;  $h_2$  *c.* 7 cm;  $H$  *c.* 12.5 cm.

**D 42.** U6 courtyard, B-6. Find list 16/111. 1972. *Thin section A-25*. Pl. 120.

Fragmented small pot. The rounded rim is decorated beneath the edge with impressions made with a tubular bone. The clay is greyish black both outside and in cross section.

Fabric: clay tempered with crushed oolitic limestone, potsherd, and shredded plants.

Dimensions:  $d_1$  7 cm;  $d_2$  6.5 cm;  $d_3$  7 cm;  $d_4$  *c.* 5.5 cm;  $D$  11 cm;  $h_1$  2 cm;  $h_2$  5.5 cm;  $H$  *c.* 11.5 cm.

**D 43.** U6 room 12. Find list 6/42. 1971. Pl. 120.

Fragmented undecorated pot.

Dimensions:  $d_1$  10 cm;  $d_2$  9.2 cm;  $d_3$  9.5 cm;  $d_4$  7 cm;  $h_1$  2.8 cm;  $H$  *c.* 15.5 cm.

Find-spot: on and close beside the threshold.

**D 44.** U6 courtyard, E-5. 1974. Pl. 121.

Fragmented pot with rather low neck.

Dimensions:  $d_1$  10 cm;  $d_2$  9.8 cm;  $d_3$  9.9 cm; D 12.8 cm;  $h_1$  1.5 cm;  $h_2$  3 cm.

**D 45.** U6 courtyard, B-6. Find list 16/114. 1976 + U6 courtyard, V-4. Find list 1. 1975. Pl. 121.

Small pot: fragments of rounded rim. The clay is fawn with black spots on the outside, and grey in cross section.

Fabric: clay tempered with crushed limestone and potsherd.

Dimensions:  $d_1$  c. 10 cm;  $d_2$  c. 9.4 cm;  $d_3$  c. 10 cm;  $h_1$  2.5 cm.

**D 46.** U6 courtyard, V-4. 1975. Pl. 121.

Pot: fragment of rounded and smoothly out-curved rim. The clay is greyish fawn on the interior; grey-brown and brown outside.

Fabric: clay tempered with large (up to 4 mm) grains of crushed home-made pottery sherds (?). The presence of pores suggests too the addition of crushed limestone, later leached out by washing; the amount, however, was not very large.

Dimensions:  $d_1$  10 cm;  $d_2$  9 cm;  $d_3$  10 cm;  $h_1$  3.8 cm.

#### 1A. Main parameters unknown

**D 47.** U6 courtyard. 1972. Pl. 121.

Large pot: a fragment of rounded rim; no decoration. The clay is grey, the interior surface light brown.

Fabric: clay tempered with crushed oolitic limestone.

Dimensions:  $h_1$  c. 6 cm.

**D 48.** U6 courtyard, D-4. 1974. Pl. 121.

Pot: small fragment of rounded, undecorated rim. The clay is well fired; uniformly brick-coloured on the outer surface and the interior.

Fabric: clay tempered with fine limestone-quartz sand.

**D 49.** U6 courtyard, B-6. Find list 16/114. 1972. Pl. 121.

Pot: fragments of rim slightly flattened on top. The clay surface is fawn and black; in cross section, grey-black. There are numerous pores including very large ones (up to 4 mm) left by dissolved limestone.

Fabric: clay tempered with crushed limestone.

**D 50.** U6 courtyard, B-6. Find list 16/111. 1972. Pl. 121.

Small fragment of rounded rim. The clay is fawn on the surface, grey in cross section.

Fabric: clay tempered with coarsely ground potsherd.

**D 51.** U6 room 26. Find list 10/12. 1972. Pl. 121.

Pot: small fragment (approx. 10° preserved) of rounded rim, decorated beneath the outer edge with finger impressions. Clay grey-brown.

Fabric: clay tempered with coarsely ground potsherd and crushed limestone.

**D 52.** U6 courtyard, V-4. Find list 1. 1973. Pl. 121.

Pot: rounded rim fragment; no decoration. Clay grey in cross section and fawn outside.

Fabric: clay tempered with potsherd and finely crushed limestone.

Dimensions:  $h_1$  c. 3.5 cm.

**D 53.** U6 courtyard, V-4. Find list 1. 1973. Pl. 121.

Pot: rounded rim fragments. Clay grey.

Fabric: clay tempered with potsherd.

Dimensions:  $h_1$  c. 3 cm.

**D 54.** U6 room 24. Find list 8/16. 1972. Pl. 121.

Small fragment of rounded rim; finger impressions along the edge. Clay grey; outside yellow-brown.

Fabric: clay tempered with finely ground potsherd (grain size approx. 1.5 mm), crushed limestone (approx. 1.5 mm) and pounded plants. Imprints of the latter are visible both on the surface and in cross section.

Dimensions:  $h_1$  4 cm.

**D 55.** U6 courtyard, V-4. Find list 1. 1975. Pl. 121.

Very small sherd of rim, decorated round the edge with fingernail impressions. Clay yellow.

Fabric: clay tempered with crushed limestone.

**D 56.** U6 courtyard, V-4. Find list 1. 1973. Pl. 121.

Pot: small fragment of undecorated rim. Clay yellow; light brown in cross section.

Fabric: clay tempered with finely crushed limestone.

**D 57.** U6 courtyard, V-4. Find list 1. 1975. Pl. 121.

Pot: small fragment of rounded undecorated rim (approx. 30° preserved). Clay yellow on the surface and in cross section. There are scattered pores (up to 1 mm) of leached-out limestone on the surface.

Fabric: clay tempered with fine grains of ground potsherd and limestone sand.

Dimensions:  $h_1$  c. 3.5 cm.

**D 58.** U6 courtyard. 1975. Pl. 121.

Pot: small fragment of rounded undecorated rim (approx. 30° preserved). The clay shows fine pores left by dissolved limestone; it is grey-fawn outside, fawn inside, and grey in cross section.

Fabric: clay tempered with ground potsherd (particle size up to 3 mm) and limestone sand.

Dimensions:  $h_1$  c. 3.5 cm.

**D 59.** U6 courtyard, E-6. 1974. Pl. 121.

Pot: small fragment of rounded undecorated rim (approx. 20-25° preserved). The surface is coloured bright brown both inside and out with numerous pores left by leached-out limestone.

Fabric: clay tempered with crushed limestone.

**D 60.** U6 courtyard, E-3. 1974. Pl. 121.

Thin-walled small pot: small fragment of rounded undecorated rim. The surface is coloured grey-brown on the outside and fawn on the inside.

Fabric: clay tempered with finely crushed limestone.

**D 61.** U6 room 16. Find list 10/12. Pl. 121.

Pot: small rim fragment. Rather shallow impressions run

around the top edge. The clay is a dense, fawn-grey on the surface, and grey in cross section.

Fabric: clay tempered mainly with oolitic limestone sand with fairly small inclusions of quartz sand.

**D 62.** U6 courtyard, B-6. Find list 16/117. 1972. Pl. 121.

Pot: a small fragment of rounded rim (approx. 30° preserved). The clay is grey-black both on the surface and in cross section.

Fabric: clay tempered with ground potsherd (particles up to 3 mm) and pounded plants, the imprints of which are visible both in cross section and on the surface of the fragment.

**D 63.** U6 room 12. Find list 6/40-41 (a). 1971.

Pot: a small fragment of rounded rim; no decoration. The clay is homogeneous black in cross section.

Fabric: clay tempered with finely crushed limestone and quartz (?).

Find-spot: the northern corner of the room.

**D 64.** U6 room 26. Find list 10/12. 1972.

Pot: small fragment (approx. 20° preserved) of rim flattened on top; finger impressions are visible beneath the outer edge. Clay grey both on the surface and in cross section.

Fabric: clay tempered with potsherd and crushed limestone.

## Type 1B

### 1B-1. Large Vessels

**D 65.** U6 courtyard, V-4. 1975. Pl. 122.

Pot: fragments of rim, slightly flattened on top, and neck fragments. The clay is three-layered in cross section: grey-black in the middle, fawn on the surfaces; includes numerous fine and very large pores left by leached-out limestone.

Fabric: clay tempered with crushed limestone.

Dimensions: d<sub>1</sub> 18 cm; d<sub>2</sub> 15 cm; d<sub>3</sub> 16 cm; h<sub>1</sub> 5 cm.

**D 66.** U6 room 20. Find list 4/39b. 1972. *Thin section A-27*. Pl. 122.

Fragmented pot. The rim is smoothly flattened on top (evidently achieved using a potter's wheel), and the outer edge is decorated with oblique notches made with a stick or knife-back; an additional decoration in the form of a row of finger impressions is visible on the shoulder. Numerous imprints of shredded plants can be seen on the surface of the pot.

Fabric: clay tempered with coarsely ground potsherd, shredded plants and a small amount of crushed limestone.

Dimensions: d<sub>1</sub> 18 cm; d<sub>2</sub> 16.5 cm; d<sub>3</sub> 16.5 cm; d<sub>4</sub> 11 cm; D 26 cm; h<sub>1</sub> 4 cm; h<sub>2</sub> 11 cm; H 29 cm.

**D 67.** U6 room 32. Find list 3/4. 1973. *Thin section A-10*. Pl. 123.

Large fragmented pot decorated with finger impressions round the rim. The vessel is regularly fired, and the clay is of a uniform yellow-brown.

Fabric: clay tempered with potsherd and crushed limestone.

Dimensions: d<sub>1</sub> 19 cm; d<sub>2</sub> 16.5 cm; d<sub>3</sub> 19 cm; d<sub>4</sub> 13 cm; D c. 27.5 cm; h<sub>1</sub> 8.5 cm; h<sub>2</sub> c. 5.5 cm; H c. 32 cm.

Find-spot: lying on the floor.

**D 68.** U6 courtyard. 1975. *Thin section A-35*. Pls. 123 and 136, c.

Large pot: rim fragments flattened on top, and wall fragments. An applied flange on the neck is decorated with stick impressions. The clay is black in cross section, with a light brown surface.

Fabric: very lean carbonate clay with high content of silt and augite-basalt sand. Practically without artificial additives.

Dimensions: d<sub>1</sub> c. 22; d<sub>2</sub> c. 20; d<sub>3</sub> c. 21; h<sub>1</sub> c. 6.

### 1B-2. Medium-sized Vessels

**D 69.** U6 courtyard, E-3. 1974 + U6 courtyard, V-4, 5. Find list 1/50. 1973. *Thin section A-3*. Pls. 124 and 136, d.

Upper body of a pot with sharply out-curved rim flattened on top; applied flange on the shoulder decorated with oblique stick impressions. The clay is three-layered in cross section: black in the middle and from yellowish brown to dark grey on the outer surfaces.

Fabric: lean clay (more than 25% of silt) tempered with potsherd and crushed organogenic limestone.

Dimensions: d<sub>1</sub> 14.5 cm; d<sub>2</sub> 11.3 cm; d<sub>3</sub> 13.5 cm; D c. 22 cm; h<sub>1</sub> 5.5 cm; h<sub>2</sub> c. 6 cm.

**D 70.** U6 courtyard, V-4. 1975. *Thin section A-4*. Pls. 124 and 136, e.

Pot: upper body with rounded and sharply out-curved rim. An undivided bolster of applied clay runs round the shoulder. The clay is regularly fired. The colour on the surface and in cross section varies from orange-brown to grey-yellow and black. Numerous pores left by limestone sand dissolved during cleaning are visible both on the inner and outer surface.

Fabric: lean clay (less than 25% aleurite) tempered with oolitic limestone sand.

Dimensions: d<sub>1</sub> 15 cm; d<sub>2</sub> 11.7 cm; d<sub>3</sub> 13.5 cm; D 22 cm; h<sub>1</sub> 5 cm; h<sub>2</sub> 6.5 cm.

**D 71.** U6 courtyard, V-4. 1975. Pl. 124.

Pot: fragments of sharply out-curved rim flattened on top; no decoration. The clay is orange-brown, with a dark grey interlayer in some places and spots of similar colour on the surface.

Dimensions: d<sub>1</sub> 16 cm; d<sub>2</sub> 13.6 cm; d<sub>3</sub> 15 cm; h<sub>1</sub> 5 cm.

**D 72.** U6 room 32. Find list 3/6. 1973. *Thin section A-14*. Pls. 125 and 137.

Massive pot decorated with oblique notches along the shoulder. The surface is light brown with dark spots.

Fabric: lean clay (with natural content of quartz-feldspar and augite sand) tempered with crushed limestone.

Dimensions: d<sub>1</sub> 13.5 cm; d<sub>2</sub> 12 cm; d<sub>3</sub> 12 cm; d<sub>4</sub> 8 cm; D 17 cm; h<sub>1</sub> 3.8 cm; h<sub>2</sub> 4 cm; H 20 cm.

Find-spot: on the floor.

**D 73.** U6 room 9. Find list 3/23. 1971 + U6 courtyard, V-4. Find list 1. 1975. Pl. 125.

Upper body of a pot. Linear indentations made with a stick on the shoulder. The rim is flattened on top. Regularly fired. The clay is yellow in cross section, and orange with pores left by leached-out limestone on the surface (both inside and outside).

Fabric: clay tempered with potsherd and crushed limestone.

Dimensions:  $d_1$  16.8 cm;  $d_2$  15 cm;  $d_3$  15 cm;  $D$  c. 23.5 cm;  $h_1$  4.0 cm;  $h_2$  c. 8 cm.

Find-spot: on the floor in the northern corner of the room.

**D 74.** U6 room 12. Find list 6/40. 1971. *Thin section A-79*. Pl. 126.

Fragmented pot. Oblique notches made with a stick or knife-back run round the rim. The clay is three-layered in cross section: orange on the outside surfaces, grey-black in the middle. Traces of soot are visible on the surface.

Fabric: clay tempered with limestone-quartz sand and ground potsherd.

Dimensions:  $d_1$  13 cm;  $d_2$  11.4 cm;  $d_3$  12 cm;  $d_4$  8.5 cm;  $D$  c. 18 cm;  $h_1$  4 cm;  $H$  c. 20.5 cm.

Find-spot: in the northern corner; possibly it originally stood on a shelf. Entirely fragmented.

**D 75.** U6 courtyard, B-6. Find list 16/112. 1972. Pl. 126.

Fragmented pot: approx. 200° of the rim and 270° of the base preserved; rim flattened on top. The surface of the vessel is spotted: light brown, fawn, and black.

Fabric: clay dense, tempered with potsherd and crushed limestone partly leached out by washing.

Dimensions:  $d_1$  15.5 cm;  $d_2$  13 cm;  $d_3$  14 cm;  $d_4$  11.5 cm;  $D$  c. 20 cm;  $h_1$  5 cm;  $H$  c. 22 cm.

**D 76.** U6 courtyard, B-6. Find list 16/112. 1972. Pl. 127

Pot: fragments of rim (c. 80° preserved). The rim was flattened on top. The clay is light grey both on inner and outer surfaces, and grey in cross-section.

Fabric: clay containing ground potsherd as well as numerous fine and medium-sized grains of pyroxene. In the present case the latter does not constitute a special additive but simply indicates that pounded amphorae sherds of South-Pontic production (e.g. Sinope), traditionally including pyroxene in their fabric, were apparently used as temper.

Dimensions:  $d_1$  17 cm;  $d_2$  15 cm;  $d_3$  15.5 cm;  $h_1$  4 cm.

**D 77.** U6 courtyard, V-4. Find list 1. 1975. *Thin section A-34*. Pl. 127.

Thin-walled pot: rim (c. 80° preserved) and body fragments. The rim is rounded and without decoration. The colour is dirty-yellow both on the surface and in cross section. The clay is brittle and covered with cracks on the surface.

Fabric: carbonate clay. The pores indicate the initial presence of crushed limestone in the paste; but that was not the main temper, which evidently consisted of sherds of home-made pottery.

Dimensions:  $d_1$  16 cm;  $d_2$  14.4 cm;  $d_3$  15 cm;  $h_1$  3.5 cm.

**D 78.** U6 room 16. Find list 10/12. 1971. Pl. 127.

Pot, rim and base fragments. The rim is sharpened and out-curved in the shape of a bell. The clay is irregular in cross section: grey-brown outside and grey-black on interior.

Fabric: clay tempered with potsherd and crushed limestone.

Dimensions:  $d_1$  17 cm;  $d_2$  13.2 cm;  $d_3$  15 cm;  $d_4$  10 cm;  $D$  c. 20 cm;  $h_1$  5 cm;  $H$  c. 22 cm.

**D 79.** U6 room 12. Find list 6/40-41 (b). 1971 + Find list 6/42. *Thin section A-20*. Pl. 127.

Fragmented pot; no decoration. The clay is a regular grey-black in cross section, and has a smoothed surface.

Fabric: lean clay tempered with coarse-grained shell-rock and ground potsherd.

Dimensions:  $d_1$  15.5 cm;  $d_2$  12 cm;  $d_3$  12.5 cm;  $d_4$  9.2 cm;  $D$  23 cm;  $h_1$  4.5 cm;  $h_2$  7 cm.

Find-spot: the northern corner of the room.

### 1B-3. Small Vessels

**D 80.** U6 room 17. Find list 15/27. 1972. *Thin section A-9*. Pl. 127.

Pot with sharply out-curved and rounded rim. The vessel surface is light brown.

Fabric: lean clay tempered with crushed limestone and potsherd.

Dimensions:  $d_1$  9.5 cm;  $d_2$  7.8 cm;  $d_3$  8 cm;  $d_4$  8 cm;  $D$  12.6 cm;  $h_1$  2.3 cm;  $h_2$  5 cm;  $H$  13.2 cm.

**D 81.** U6 room 13. Find list 8/43. 1971. *Thin section A-13*. Pls. 127 and 137.

Small pot. The surface is black, with imprints of grass.

Fabric: clay tempered with potsherd, crushed limestone, and quartz.

Dimensions:  $d_1$  7.5 cm;  $d_2$  6 cm;  $d_3$  6.2 cm;  $d_4$  5 cm;  $D$  9.3 cm;  $h_1$  1.5 cm;  $h_2$  3.5 cm;  $H$  10 cm.

Find-spot: on the floor.

### 1B. Main Features Unknown

**D 82.** U6 courtyard, B-6. Find list 16/115. 1972. Pl. 128.

Pot: small fragment of rounded rim (approx. 15° preserved). The clay is brown on the outside surfaces and light brown in cross section.

Fabric: clay tempered with coarsely crushed limestone with particle size up to 9 mm.

**D 83.** U6 room 20. Find list 4/25. 1972. Pl. 128.

Small fragment of rim flattened on top; decorated round the edge with oblique stick impressions. The surface is carefully smoothed. The clay is dense, regularly fired, and uniformly orange-brown in cross section.

Fabric: clay tempered with limestone and quartz sand (?).

**D 84.** U6 room 12. Find list 6/40-41 (a). 1971. Pl. 128.

A fragment of rather low, rounded rim.



**D 85.** U6 courtyard, V-4. Find list 1. 1973.

Pot: a fragment of neck, with hole drilled through it (for hanging the vessel up). Clay brown.

Fabric: clay tempered with coarsely crushed limestone (grain size up to 3 mm).

## Type 1C

### 1C-2. Medium-sized Vessels

**D 86.** U6 room 13. Find list 8/47-48. 1971. Pl. 128.

Pot: fragments of rim (approx. 60%), shoulder, and base with lower body. The rim is decorated with finger impressions round the edge. The clay is black both on the surface and in cross section.

Fabric: clay tempered with coarsely ground potsherd (grain size up to 4 mm) and crushed limestone (particles up to 3 mm).

Dimensions: d<sub>1</sub> 13 cm; d<sub>2</sub> 12.7 cm; d<sub>3</sub> 14.5 cm; d<sub>4</sub> 11 cm; h<sub>1</sub> 5 cm.

### 1C-3. Small Vessels

**D 87.** U6 courtyard V-4. 1973. Pl. 128.

Pot: fragments of rim and shoulder.

Dimensions: d<sub>1</sub> 6.1 cm; d<sub>2</sub> 6.1 cm; d<sub>3</sub> 6.5 cm; D 11 cm.

## Type 2

**D 88.** U6 courtyard, V-4. 1975. Pl. 128.

Fragments of rounded, smoothly out-curved rim; no decoration. Clay red-brown.

Fabric: clay tempered with shell sand containing a little quartz sand.

Dimensions: d<sub>1</sub> 17 cm; d<sub>2</sub> 15.8 cm; d<sub>3</sub> 17 cm; h<sub>1</sub> 3.5 cm.

It is highly probable that the vessel was made by the same potter as **D 10** and **D 11**.

## Type 3

**D 89.** U6 courtyard, V-4. Find list 1. 1973. Pl. 128.

Pot: rim (approx. 30° preserved) and wall fragments. The rim is very low, rounded, and out-curved. Clay brick-red on surfaces and brown in cross section.

Fabric: clay tempered with fine limestone sand and fairly small admixtures of quartz sand.

Fabric and firing peculiarities are similar to those of vessel **D 9**.

Dimensions: d<sub>1</sub> c. 18 cm; d<sub>2</sub> c. 17.8 cm; d<sub>3</sub> c. 18 cm; h<sub>1</sub> 2 cm.

## Type Impossible to Define

**D 90.** U6 room 32. Find list 3/7. 1973.

Pot base (360° preserved). The clay is black and bears evidence of soot deposits.

Fabric: clay tempered with crushed limestone.

Dimensions: d<sub>4</sub> 11 × 13.5 cm.

**D 91.** U6 room 7. Find list 1/47. 1972. Pl. 128.

Pot base.

Fabric: clay tempered with ground potsherd.

Dimensions: d<sub>4</sub> 11.5 cm.

Find-spot: on the floor near wall 2.

**D 92.** U6 gate. Find list 3/57. 1972. Pl. 128.

Pot or deep bowl: fragment of thin-walled base. The outer surface of the clay is grey; the interior surface is irregularly coloured (fawn, red-brown); and the cross section is brown or red-brown.

Fabric: clay tempered with fine homogeneous limestone sand.

Dimensions: d<sub>4</sub> c. 10 cm.

**D 93.** U6 room 12. Find list 6/42a. 1971. Pl. 128.

Pot: fragmented base.

Dimensions: d<sub>4</sub> 9 cm.

Find-spot: on and near the threshold.

**D 94.** U6 courtyard, B-6. Find list 16/116. 1972. Pl. 129.

Pot: fragments of shoulder and base. Decorated on the shoulder with a row of finger impressions. On the bottom are imprints of shredded grass introduced as a means of separating the vessel from the modelling tray. The clay is fawn on the outside surface (terracotta-coloured on the bottom), and grey on the interior and in section.

Fabric: clay tempered with potsherd (particles up to 3 mm) and crushed limestone (particles up to 3.5 mm) in roughly equal ratio.

Dimensions: d<sub>4</sub> c. 7.5 cm.

**D 95.** U6 courtyard, V-4. 1975. Pl. 129.

Pot: small fragment of base. The clay is red-brown, the section is grey.

Fabric: clay tempered with potsherd and crushed limestone.

**D 96.** U6 courtyard, V-4. 1975. Pl. 129.

Pot: small fragment of base. The clay is light yellow.

Fabric: clay tempered with crushed limestone and potsherd.

**D 97.** U6 courtyard, V-4. 1975. Pl. 129.

Pot: fragment of lower body with part of the base. Coil junctions are visible on the surface of the sherd as well as the place where the first coil joins the base. The clay is fawn outside and orange inside.

Fabric: clay tempered with crushed limestone. The particles are sized from a fraction of a millimetre up to 3 mm.

**D 98.** U6 room 3. Find list 6/41. 1969.

Fragments of flat-based pot.

**D 99.** U6 room 7. Find list 1/46. 1971.

Fragmented pot with a decoration of pits and fingernail impressions round the rim.

Find-spot: on the floor in the middle of the room.

**D 100.** U6 room 17. Find list 15/26. 1972.

Home-made pot.

Find-spot: on the floor.

**D 101.** U6 room 17. Find list 15/28. 1972.

Fragments of a large red-burnished vessel decorated with small applied spikes.

**D 102.** U6 room 17. Find list 15/29. 1972.

Large thick-walled pot without decoration or polish; rim and base fragments.

**D 103.** U6 courtyard, DE-6. Find list 17/107. 1972.

Fragmented pot.

## LARGE STORAGE JARS WITH COMBED DECORATION

### Type 4

**D 104.** U6 room 3. Find list 6/40. 1969 + U6 courtyard, V-2. 1971. *Thin section A-32*. Pls. 129 and 136, *g*.

Fragmented storage jar. The shoulder and body of the vessel are decorated with lines and indentations made with a two- or three-toothed stamp ('comb') on the raw clay; the neck is polished. The surface of the clay is grey-black outside and orange inside.

Fabric: clay tempered with sand containing quartz, augite, and basalt.

Dimensions:  $d_2$  10.3 cm;  $d_3$  13 cm; D 30.5 cm.

## LARGE PIRIFORM STORAGE JAR

### Type 5

**D 105.** U6 room 9. Find list 3/24. 1971. *Thin section A-33*. Pl. 130.

The upper body of a vessel with a high neck widening towards the shoulder; rim flattened on top and slightly out-curved. The surface of the vessel is black-brown and has a lustrous polish.

Fabric: clay tempered with quartz sand.

Dimensions:  $d_1$  8.5 cm;  $d_2$  8 cm;  $d_3$  12 cm;  $h_1$  8 cm;  $h_2$  8 cm; D *c.* 20 cm.

Find-spot: on the floor near wall 2.

## JUGS

### Type 6

**D 106.** U6 courtyard. 1972 + U6 courtyard, V-4. Find list 1/62. 1973 + U6 courtyard, V-4. Find list 1/52. 1975. *Thin section A-2*. Pl. 130.

Fragmented polished jug with high neck; upper body of the vessel is polished inside, too. Two parallel horizontal ridges on the inner surface running round the circumference of the lower part, may indicate the use of a potter's wheel of the DWF-2 stage in A.A. Bobrinskij's classification.<sup>46</sup>

The clay surface varies in colour from light brown to black; the cross section is black.

Fabric: clay tempered with quartz sand containing a small quantity of calcite.

Dimensions:  $d_1$  9 cm;  $d_2$  6.5 cm;  $d_3$  7.5 cm;  $d_4$  6 cm; D 12 cm;  $h_1$  6 cm;  $h_2$  4.5 cm; H 16.5 cm.

**D 107.** U6 courtyard, V-4. 1975. *Thin section A-5*. Pl. 130.

Jug: fragments of rounded undecorated rim. Matt red-brown polish is visible on the outside and on the interior of the upper body. The clay is dark brown in cross section.

Fabric: clay tempered with quartz and limestone sand.

Dimensions:  $d_1$  11 cm;  $d_2$  7.7 cm;  $d_3$  9 cm;  $h_1$  5.5 cm.

**D 108.** U6 courtyard, V-4. 1975. Pl. 130.

Polished jug: base and lower part of vessel.

Fabric: clay tempered with quartz and limestone sand.

Dimensions:  $d_4$  7 cm.

**D 109.** U6 courtyard, D-6. Find list 17/106. 1972. Pl. 130.

A fragment of the base and lower part of a closed vessel; approx. 50° preserved. The clay is dense, black in section, and grey on the surface; carefully smoothed. The bottom shows a lustrous polish on the outside.

Fabric: clay tempered with quartz-limestone sand and also with occasional grains (up to 2 mm) of ground potsherd.

Dimensions:  $d_4$  9 cm.

**D 110.** U6 room 4. Find list 4/15. 1969.

Fragment of middle part of jug handle. The clay is yellow-brown without polish.

Fabric: clay tempered with finely ground potsherd and crushed limestone.

Dimensions: thickness 1.5 cm; width 2.7 cm.

## SCOOPS

### Type 7

**D 111.** U6 room 13. Find list 8/45. 1971. Pls. 130 and 137.

Scoop with loop-shaped handle raised above the edge. The rim is rounded and slightly out-curved; no polish. The clay was overfired.

Dimensions:  $d_1$  12.2 cm;  $d_2$  11.7 cm;  $d_3$  12 cm;  $d_4$  9 cm; D 16.5 cm;  $h_1$  3 cm;  $h_2$  3.5 cm; H 11 cm.

Find-spot: almost in the centre of the room on the floor.

## PANS

## Type 8

**D 112.** U6 courtyard, E-3. 1974. Pl. 131.

Pan: lip and shoulder fragments; the lip is flanged to accommodate the lid. The horizontal loop-shaped handle is slightly raised above the edge.

Dimensions:  $d_1$  22 cm;  $d_{\text{flange}}$  20.5 cm; D *c.* 24 cm.

**D 113.** U6 courtyard, E-3. 1974. Pl. 185.

Pan: lip and shoulder fragments. The lip is flattened on top and has a flange to accommodate the lid; the horizontal loop-shaped handle is not raised above the edge.

Dimensions:  $d_1$  18.5 cm;  $d_{\text{flange}}$  16.5 cm; D *c.* 21.5 cm.

**D 114.** U6 courtyard, D-6. Find list 17/110. 1972. *Thin section A-22.* Pl. 131.

Fragmented pan; approx. 110° of the rim preserved. Inside there is a pronounced flange to accommodate the lid. The nature of the fracture lines indicate that the coiling technique was employed in the formation of the vessel. Profiling of the upper part and smoothing of the surface were achieved partly by use of a potter's wheel. The clay is uniformly greyish fawn.

Fabric: carbonate clay tempered with crushed limestone.

Dimensions:  $d_1$  20 cm;  $d_{\text{mouth}}$  17 cm;  $d_2$  19 cm;  $d_3$  18.6 cm; D 21.5 cm;  $h_1$  3 cm;  $h_2$  5.5 cm.

**D 115.** U6 courtyard, E-5. 1974. Pl. 131.

Pan: fragments of lip and shoulder. The lip is flattened on top with a flange inside to accommodate the lid.

Dimensions:  $d_1$  21 cm;  $d_{\text{mouth}}$  19.5 cm; D 23 cm.

## BOWLS

## Type 9

**D 116.** U6 courtyard, B-6. Find list 16/120. 1972. Pl. 132.

Fragment of a bowl with the rim flattened on top.

Dimensions:  $d_1$  19.5 cm; D 21.2 cm;  $h_2$  3.5 cm.

**D 117.** U6 courtyard, E-5. 1974. Pl. 132.

A fragment of a bowl lip flattened on top.

Dimensions:  $d_1$  29 cm; D 31 cm;  $h_2$  4 cm.

**D 118.** U6 room 25. Find list 9/16. 1972 + U6 courtyard, V-4. Pl. 132.

Fragments of bowl lip flattened on top. The clay is red-brown; broken surfaces are grey-brown.

Fabric: clay tempered with fine limestone sand.

Dimensions:  $d_1$  20 cm; D 20.5 cm;  $h_2$  1 cm.

**D 119.** U6 courtyard, V-4. 1975. *Thin section A-7.* Pl. 132.

Fragments of a bowl lip flattened on top. The surface is smoothed and coated on the interior of the vessel with en-

gobe of an intensive brown. The clay is a regular dark grey in cross section.

Fabric: clay tempered with limestone sand with a small inclusion of quartz sand.

Dimensions:  $d_1$ =D 19 cm.

**D 120.** U6 courtyard, E-6. 1974. Pl. 132.

Fragments of a bowl lip.

Dimensions:  $d_1$  33.5 cm; D 35 cm;  $h_2$  3 cm.

**D 121.** U6 courtyard, E-4. 1974. Pl. 133.

Fragment of a lip flattened on top and with a slightly incurved edge.

Dimensions:  $d_1$  20.7 cm; D 21.8 cm;  $h_2$  1.7 cm.

**D 122.** U6 courtyard, V-4. 1975. *Thin section A-6.* Pl. 133.

Bowl: fragments of a rounded and incurved lip. Traces of partial use of a potter's wheel for modelling the profile of the upper part of the vessel and for smoothing the surface are visible on the sherd. The firing is regular. The clay surface is dark brown; broken surfaces are brown.

Fabric: clay tempered with limestone-quartz sand.

Dimensions:  $d_1$  24 cm; D 24.6 cm;  $h_2$  1 cm.

**D 123.** U6 well, no. 208. 1977. Pl. 133.

Bowl: rounded lip fragment (approx. 30° preserved). The clay is friable, grey-lilac; broken surfaces are grey.

Fabric: clay tempered with shell sand.

Dimensions:  $d_1$  *c.* 22 cm; D *c.* 23 cm;  $h_2$  1 cm.

**D 124.** U6 courtyard, E-6. 1974. Pl. 133.

Thin-walled bowl: small fragment of rounded lip. The clay surface is fawn; broken surfaces are grey.

Fabric: clay tempered with potsherd and crushed limestone.

**D 125.** U6 courtyard, B-6. Find list 16/120. 1972. Pl. 133.

Bowl: small fragment of rounded lip (approx. 15° preserved). The interior surface and broken surfaces are grey; the outer surface is light brown. The fragment is broken at the junction of two coils.

Fabric: clay tempered with coarsely ground potsherd (particles up to 6 mm); scattered pores indicate that finely crushed limestone was also added.

Dimensions:  $d_1$  = D.

## SALT-CELLARS

## Type 10

**D 126.** U6 room 20. Find list 4/39. 1972. *Thin section A-17.* Pls. 133 and 137.

Small salt-cellar of a truncated cone shape with tapering edge. The surface is greyish brown to very pale brown; broken surfaces are yellowish brown.

Fabric: extremely sandy clay tempered with crushed limestone.

Dimensions:  $d_1$  7.5 cm;  $d_4$  4 cm; H 3.5 cm.

MORTARS

Type 11

**D 127.** U6 courtyard, V-6. 1972. Pl. 133.  
Mortar: small lip fragment. The surface is uniformly smoothed. The clay is cream-coloured, in some places grey.  
Fabric: clay tempered with crushed limestone.  
Dimensions: d<sub>1</sub> c. 25 cm.

LIDS

Type 12

**D 128.** U6 courtyard, D-4. 1973. Pl. 133.  
Fragmented lid of a pot.  
Dimensions: D 8.3 cm.

**D 129.** U6 room 13. Find list 8/46. 1971.  
Small fragment of lid edge. The clay is grey-brown.  
Fabric: clay tempered with crushed limestone and potsherd (?).

ALTARS

Type 13

**D 130.** U6 room 12. Find list 6/53. 1971. *Thin section A-18.* Pl. 133.  
See also **G 11**.  
Fairly small cup-shaped altar on a high foot widening towards the base. Coarsely modelled. The surface is engobe-coated with light brown finely levigated clay.  
Fabric: lean clay tempered with limestone (shell-rock) sand.  
Dimensions: H 6.7 cm.  
Find-spot: on the floor.

LIST OF THIN SECTIONS

<i>A-1</i>	=	<b>D 27</b>	<i>A-18</i>	=	<b>D 130</b>
<i>A-2</i>	=	<b>D 106</b>	<i>A-19</i>	=	<b>D 74</b>
<i>A-3</i>	=	<b>D 69</b>	<i>A-20</i>	=	<b>D 79</b>
<i>A-4</i>	=	<b>D 70</b>	<i>A-22</i>	=	<b>D 114</b>
<i>A-5</i>	=	<b>D 107</b>	<i>A-23</i>	=	<b>D 35</b>
<i>A-6</i>	=	<b>D 122</b>	<i>A-24</i>	=	<b>D 21</b>
<i>A-7</i>	=	<b>D 119</b>	<i>A-25</i>	=	<b>D 42</b>
<i>A-8</i>	=	<b>D 7</b>	<i>A-26</i>	=	<b>D 10</b>
<i>A-9</i>	=	<b>D 80</b>	<i>A-27</i>	=	<b>D 66</b>
<i>A-10</i>	=	<b>D 67</b>	<i>A-28</i>	=	<b>D 30</b>
<i>A-11</i>	=	<b>D 20</b>	<i>A-29</i>	=	<b>D 41</b>
<i>A-12</i>	=	<b>D 22</b>	<i>A-30</i>	=	<b>D 16</b>
<i>A-13</i>	=	<b>D 81</b>	<i>A-31</i>	=	<b>D 11</b>
<i>A-14</i>	=	<b>D 72</b>	<i>A-32</i>	=	<b>D 104</b>
<i>A-15</i>	=	<b>D 4</b>	<i>A-33</i>	=	<b>D 105</b>
<i>A-16</i>	=	<b>D 2</b>	<i>A-34</i>	=	<b>D 77</b>
<i>A-17</i>	=	<b>D 126</b>	<i>A-35</i>	=	<b>D 68</b>

NOTES

1. Ščeglov 1976, 136; Ščeglov, Podol'skij, Gilevič and Kac 1972, 342; Chtcheglov 1992, 172.
2. Latyševa 1997, 57.
3. See for example: Peščereva 1959; Drost 1967; Bobrinskij 1978; Rye 1981; Rice 1987. *Cf.* Hampe and Winter 1962; 1965.
4. On the criteria for distinguishing added temper from natural inclusions in clays, see *e.g.* Shepard 1956; Braun 1982, 183 ff.; Rice 1987, 409-412. *Cf.* Magetti 1982, 122.
5. See Longinov 1955, 151-165; Zenkovič 1960, 144.



6. Zenkovič 1960, 118, 166, 172.
7. Zenkovič 1960, 195.
8. Zenkovič 1958, 151.
9. The so-called base program, according to A.A. Bobrinskij (1978, 114, 130-135, *cf.* fig. 43, 5).
10. Bobrinskij 1978, 44.
11. See, for example, Matson 1951, 105; Shepard 1956, 348 ff.; Nicklin 1971, 29 ff.; Bobrinskij 1978; Kožin 1989, 60 ff.
12. Kapošina 1956, 161; Štitel'man 1956, 262; Marčenko 1988, figs. 3-7.
13. *Cf.* Daševskaja 1963, 205-209, figs. 1-2.
14. See Leskov 1965, 128.
15. Belov and Strželetskij 1953, 47, fig. 17, 3; Savelja 1970, 48 ff.; Senatorov 1987, 7; Senatorov 1988, 99 ff.
16. Grinevič 1929, 24; Strželetskij 1961, 161 ff.
17. Nalivkina 1955, 65 fig. 21, 7; Kutajsov 1987, 27-40; Golencov 1981, 227-232.
18. Daševskaja 1963, 208; Jacenko 1983, 200.
19. Kovalenko 1991, 23.
20. Daševskaja 1961, 56; Daševskaja 1963, 209 fig. 1, 3-7, fig. 2, 7.
21. Daševskaja 1963, 209, fig. 2, 8; Latyševa 1997, 58.
22. Daševskaja 1963, 206 ff., fig. 2, 3-5.
23. Kris 1981, pl. 20, 2, 6; Kolotukhin 1996.
24. *Cf.* Kris 1981, pl. 27, 6; Kolotukhin 1990, 79, figs. 11, 12.
25. Bessonova 1964, 17, list 27.
26. Knipovič 1940, 135, pl. XXVI, 6; Marčenko 1988, fig. 16; Kastanajan 1952, 254, fig. 6, 1-2.
27. Marčenko 1972, figs. 3-4.
28. Marčenko and Domanskij 1983, fig. 8, 20; Marčenko 1988, 87.
29. Gavriljuk 1989, 58, fig. 17, 7-13.
30. Kapošina 1956b, 162, 169; Kapošina 1956a, 244, 247; Marčenko 1975, 71, fig. 1, 25, 74; Marčenko 1988, 97; Domanskij and Marčenko 1980, 31.
31. Marčenko 1972, 125, figs. 2, 10, 11, 131; Kopylov and Marčenko 1980, 159.
32. Gavriljuk 1989, 58, fig. 17, 1-6.
33. Kopylov and Marčenko 1980, 158, fig. 1, 12-14; Bessonova, Bunjatjan and Gavriljuk 1988, fig. 17, 14, fig. 37, 1-2.
34. Kastanajan 1981, pl. II, 5.
35. Marčenko 1972, 131, fig. 2, 9.
36. Grakov 1954, 74, pl. V, 2.
37. Marčenko 1988, 100, fig. 31, 4. *Cf.* Kapošina 1956a, 244, 247.
38. Karasev 1963a, 28, fig. 83.
39. Karasev and Jacenko 1965, 60, fig. 115.
40. Chrapunov 1991, 9, 202, fig. 20, 8; Vlasov 1997, 273 ff. pl., VIII, 5.
41. Burakov 1962, 74, pl. V, 17.
42. Gavriljuk 1989, 40-60.
43. For such imitations in the handmade ware from Histria, Olbia, and Elizavetovskoye see Coja 1970, 107, fig. 3, 34-35, 108 f.; Marčenko 1988, 87; Marčenko 1972, fig. 3, 4.
44. Development of the pottery **Wheel Functions**.
45. Bobrinskij 1978, 27, 44.
46. Bobrinskij 1978, 44.