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ALEXANDER FOL, MARGARITA TACHEVA, NIKOLAI NEDJALKOV

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BOGDAN SULTOV

CERAMIC PRODUCTION ON THE TERRITORY OF NICOPOLIS AD ISTRUM (II-nd — IV-th CENTURY)

EDITOR VOLUMINIS
MARGARITA TACHEVA

CENTRUM HISTORIAE „TERRA ANTIQUA BALCANICA"
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PREFACE

'Ancient Ceramic Production on the Territory of Nicopolis ad Istrum (2nd-4th century A. D.)' is the original title of the Ph. D. dissertation written by Bogdan Sultov, a respected and loved colleague of ours, whose untimely death deprived him of the satisfaction to see the result of his long studies published. The present posthumous publication, in which all the author's opinions and conclusions are kept unaltered, was decided by the Programme Council of the Getica regional programme. Entrusting the editors with the present publication on behalf of his colleagues and with the consent of his wife, a faithful collaborator and adviser of his, was an expression of trust that greatly honoured us, as well as a source of pain because of the inevitable going back over the memories of the man and the scholar whom we lost forever so early. Along with the archaeological exploration of the ceramic production centres at Hotnica, Pavlikeni and Butovo that he led for twenty years, he also participated as a member of some other archaeological excavations: in the joint Bulgarian-Polish expedition in Novae (near the present-day town of Svištov); he led independently the excavations of the ancient market-place called Discoduraterae (near the village of Gostilica), of the Roman villa near the present-day village of Prisovo, on the hill Carevec and the ancient site Monima Krepost, both in Veliko Tărnovo.

Bogdan Sultov was the initiator of the International Seminar 'Terra Antiqua Balcanica', on the problems of Roman ceramics in South-Eastern Europe. It was held in 1975 and 1979 and revealed the significance of the ceramic centres he explored at Butovo, Pavlikeni and Hotnica for the solution of the global problems of ancient ceramic production. Many universities in Europe (Moscow, London, Oxford, Cambridge, Warsaw, Budapest, Bucharest, Belgrade, etc.) opened the doors of their auditoriums hospitably to his lectures, as he was the author of the first chronological and typological systematization of ceramics in the Province of Moesia Inferior, which is the essence of his Ph. D. dissertation. This systematization, together with the study on the organization and the technology of ceramic production, is his greatest contribution to the problem, thus marking the beginning of the studies on Roman Eastern ceramic production, a subject undeservedly neglected up to now, considering how far knowledge of the production of the world-famous ceramic centres in the Western Roman provinces of Gallia and Germania has reached.

We wrote 'the beginning of the studies', the way the author himself would have evaluated modestly his own work, comparing it to the studies on West-Roman ceramic production already published and accumulated for more than a century. Few of his colleagues know, however, how much work was put into this beginning, for examination and description of more than 200,000 vessels and fragments, 100 pottery kilns, 200 pottery tools, for their complete interpretation and presentation. The present book is not only a catalogue and 'a handbook for young experts, who have just started dealing with the problems of ancient pottery and its production', according to another of his statements. In his Ph. D. dissertation our late colleague revealed also the directions of the trade with the pottery produced in Moesia Inferior within the Roman Empire and interpreted the economic history of its eastern provinces. And what is more, he launched his own hypotheses about the living and tangible traditions in

ceramic production from the time of the early Thracians up to the First Bulgarian Mediaeval State.

Bogdan Sultov succeeded, together with the exploration of the ceramic centres, to prepare the exhibition of the ancient production complex near Pavlikeni for the First Symposium in 1975, which demonstrated the complete technological process with the assistance of the group of students whose work he conducted, as well as the display of products, kilns and tools found on the site, at the local museum opened on this occasion. He achieved all this owing to his own personal qualities and ability to attract followers and adherents in science, by his extraordinary honesty and ethics to Science and to his colleagues. His ideas found complete response, understanding and support among all those who were in contact with him — the children from the schools in Butovo, Hotnica and Pavlikeni working under his guidance, their parents, the local Party and administrative authorities, the students from the University in Veliko Tărnovo, his colleagues from Veliko Tărnovo and from the rest of the country, Government authorities. Perhaps the best characteristic of Bogdan Sultov could be made using some of his own words, guarded as a legacy by his followers:

'...The question is not whether someone will remember us in 100-200 years. It is important to create and leave something to people, to educate young followers...., to stir their enthusiasm. For if the bond is broken, what will remain then, what are we going to preserve for the future....'

THE EDITORS

SUB EDITORS' NOTE

The author's use of sources of a different nature and in different languages confronted us with a most serious problem: the transcription of ancient and modern names. Thus, the generally acknowledged UNESCO transcription is used solely in the case of modern Bulgarian toponyms; all other names are given according to the respective language they are used in: Greek names — by their Latin transcription, the Latin — in Latin, the Romanian — in Romanian, etc. The names of Bulgarian authors cited in the text are given according to the authors' own spellings, used in their publications and checked with the Bibliography of Bulgarian Archaeology.

The translation is almost literal, kept as close as possible to the author's own phrase, which in some cases inevitably impairs the quality of English expression.

CONTENTS

INTRODUCTION

During the last two decades, three centres for production of provincial Roman ceramics were discovered and explored on the territory of Nicopolis ad Istrum, situated near the present-day towns and villages of Hotnica, Pavlikeni and Butovo (district of Veliko Tărnovo). A number of kilns and potter's workshops were excavated, together with the abandoned ceramic production and ancient masters' tools, potters' lodgings were discovered and the trade routes for the ceramic products were traced out.

The rich numismatic material found during the excavations determined the chronological boundaries of existence of those so far unique ceramic centres, discovered in South-Eastern Europe, i. e. from the first decades of the 2nd century to the beginning of the 4th century A. D.

The complete results of the archaeological explorations near Hotnica, Pavlikeni and Butovo are not yet published, with the exception of some scientific communications at some international congresses, as well as some articles dealing with some problems of ceramic production. [1] Nevertheless, the findings gained popularity both in Bulgaria and abroad. [2] This was favoured by the two seminars organized by the Committee for Culture, the Archaeological Institute and the Institute of Thracology at the Bulgarian Academy of Sciences, which were held on the very sites in 1975 and 1979, and where the results of the studies were discussed.

The general evaluation made by the experts was that these are some of the few preserved records of the past, where one could illustratively follow the complex process of ceramic production and the stratigraphically precisely defined materials allow us to date the origin and the development of the ceramic centres. The ceramics found there could be used for comparisons and dating of ceramics from the same epoch, found at other sites.

For the first time in the present dissertation work, the results from long years of exploration near Hotnica, Pavlikeni and Butovo have been summarized; here we set ourselves the following main tasks:

1. To consider the topography and development of the ceramic centres.
2. To disclose the complex mechanism of setting up a new ceramic production and its improvement, resulting in the gradual substitution of imported goods by local imitations, taking into consideration our observations in the course of archaeological explorations and the material for comparison found in other places.
3. To explore the various ceramic products found together with reliably dated material in situ in potter's workshops and kilns and to make a chronological and typological classification.
4. To compare the ceramic material produced in the explored centres to that apparently originating from them, but found in ancient necropolises and settlements on the territory of Nicopolis ad Istrum and Novae, as well as to reveal the use and distribution of the ceramic products manufactured in them.
5. To look for any local characteristics and traces of the local Thracian tradition in ceramic production and eventually to find the creators of the ancient ceramic centres on the territory of Nicopolis ad Istrum.

The present study had to overcome many difficulties of scientific character. First of all, there were no generalized works on ceramic production in

Bulgaria, therefore the whole study is based mainly on the author's observations, made during the archaeological excavations and subsequent study of the unearthed material. The literature used complements and supports the author's conclusions.

In the course of twenty years vast archaeological material had to be processed and systematized, originating not only from the ceramic centres near Hotnica, Pavlikeni and Butovo, but also from some other places on the territory of Nicopolis ad Istrum. Expressed in figures, it would mean the examination and description of more than 200,000 ceramic fragments, more that 100 pottery kilns and over 200 various pottery tools, as well as a great number of discarded ceramic products.

It turned out to be impossible to consider this vast and various material in one dissertation, that is why we deliberately confined ourselves to only tracing out the basic ceramic production and we neglected a number of points connected with the manufacturing of tiles and bricks, terracotta, trays and lamps, which will be the subject of special research. As to the chronological and typological scheme, we took into consideration the most significant and typical specimens from the ceramic centres, as well as from those ancient sites which had been the direct consumers of this production, in order not to disrupt the general initial pattern of ceramic production. In this respect, the various ceramic material found in the necropolises in Butovo proved to be especially useful and for the first time it was given an interpretation in the present work. This allowed us to follow the development and the functional aspect of ceramic production in the centres of Butovo. Our participation in the Bulgarian-Polish archaeological expedition in Novae, near Svištov, was of great significance for our work. This is the area where we had been studying the ceramic material for more than twenty years, and it was established that a significant part of the fine ceramic production found in Novae originated from Pavlikeni and Butovo.

The collaboration with the Rumanian expert G. Popilian on some problems of Roman pottery found on the territory of the provinces Moesia Inferior and Dacia proved to be particularly fruitful as it helped us to discern among the ceramic material unearthed at various sites north of the Danube the production of the centres at Pavlikeni and Butovo, as well as to establish the influence of our ceramic centres on the development of local ceramic production.

* * *

The setting up of ceramic centres near Hotnica, Pavlikeni and Butovo is closely connected with the Roman town Nicopolis ad Istrum, founded at the beginning of the 2nd century A. D., after the Dacian wars of Emperor Traianus. After the foundation of the Roman Province Dacia, the region between the Danube and the Balkan Mountains was no longer a border area disturbed by outside attacks. The political changes which occurred as a result of this created favourable prerequisites for the further development of productive forces on the basis of the slave-owning economy which was strengthening its position. The peaceful development in the course of almost a century and a half afforded an opportunity for development of ancient slave-owning economic relations, which found expression in the flourishing state of big landowning, in the development of craft industry and in the prosperity of a number of town

centres. [3] One of these was Nicopolis ad Istrum, founded within the administrative boundaries of Province Thracia and organized on the same pattern as a polity in Asia Minor. It was towards the end of the 2nd century when the town was integrated within the Roman province of Moesia Inferior. [4] The boundary between the two Roman provinces — Thracia and Moesia — which was definitely set up in 136 A. D. [5] passed to the north of the town, along the present-day town and village of Butovo and Polski Trămbeš.

Nicopolis ad Istrum is situated on a natural crossroad, where the important Roman road leading from Novae across the Balkan Mountains to Augusta Traiana, Constantinople and Asia Minor, crossed the road leading from Odessos to Marcianopolis, Melta and Serdica. A vast territory between the Osăm and the Jantra rivers belonged to it. It covered the most fertile lands of present-day North Bulgaria. To the south, the territory of Nicopolis ad Istrum reached the market place of Discoduraterae, founded by Augustus Traianus and situated at the northern foothills of the Balkan Mountains. The market-place known as Emporium Piritensium was also on the territory of Nicopolis ad Istrum. Some scholars locate it near the present-day village of Gorsko Kosovo, others — under the present-day village of Butovo. [6] The population of the town consisted mainly of immigrant craftsmen and tradesmen from Asia Minor, who had no opportunity of making a living under the existing economic conditions in Asia Minor. Part of this population were descendants of settlers from the West Roman provinces, inhabiting the fortified towns along the Danubian border (*limes*) which were founded earlier. At the same time the epigraphic records include some local Thracian names. The immigrants settled down not only in the town, but also in its rich surroundings, where they could find reliable market for their own production. [7] The demand for craft and mass-produced goods on the part of the Roman conquerors and the local population could not be satisfied with imports only, as their delivery depended on a number of circumstances, the most important of these being transport, which raised the cost of the imported goods too much and made them almost inaccessible, especially for the populace. This prompted some craftsmen and tradesmen, who were men of action and enterprise, to start immediate production of objects used in everyday life — in particular earthenware articles.

The flourishing state of the economy in Nicopolis ad Istrum at the time of the Severi is proved by the increase of coin emissions of the town, by its urbanization, as well as by epigraphic records. The development of crafts and trade attracted new settlers, mainly from the Roman provinces in Asia Minor. This advance can be noticed on the territory of the town of Nicopolis, where a great number of country houses, temples and sanctuaries were built and dedicated to Greek, Roman and Thracian deities. The most characteristic document, which reveals the ethnical structure of the population on the territory of the town at that time, is the famous list of the members of a Dionysian Society (*thias*), dating from 227 A. D., which was found during excavations on the territory between Butovo and Nedan. There are Thracians and Romans among the members, but the names of people of Eastern origin are prevalent. [8]

Nicopolis ad Istrum grew as a significant centre of craft industry. Some crafts like stone-cutting and fuller's trade were registered in epigraphic records; some stone-pits near Hotnica, Rusalja and Koevci were archaeologically located. Moreover, a collective find of various tools confirms the presence of a cartwright's trade and iron-smithery in Butovo. Sarcophagi, bronze objects, etc., were also manufactured there. [9]

The middle of the 3rd century was crucial for this flourishing region. A period of socio-economic and political crisis, mass invasions and plundering set in. The invasions of the Goths, who besieged Novae and Nicopolis ad Istrum at the beginning of 250 A. D., stand out most clearly. The attacks of the Barbarians continued for more than three decades and they caused general decline and new ethnical changes in this region. Depopulation of Moesia Inferior compelled the Roman authorities to re-populate the desolate regions with new settlers, different in language, way of living and cultural development. Immigrants from Provincia Dacia, which was deserted by the Romans in 271 A. D., came to live here as well. The Danube became once again a borderline (*limes*) of the Roman Empire on the Balkan Peninsula.[10]

The crisis and the its results were quite clearly discernible during the archaeological excavations in Pavlikeni and especially in Butovo. Here small houses of waste products, stones and clay were built over the destroyed monumental buildings.

In the first decades of the 4th century a partial stabilization of the economic and cultural life was noticed again. It is revealed in Butovo as well, with the extension of the borders of the ancient settlement; some of the new buildings occupied a considerable part of the former potters' quarters, but the workshops which survived gradually died out.

The area between the Danube and the Balkan Mountains was once again ransacked by the Goths' invasion in the second half of the 4th century, thus liquidating completely the ceramic production, as the exploration of the territory of Nicopolis ad Istrum testifies.

* * *

There are no special studies on the problems of provincial Roman ceramics from the 2nd-4th century A. D., found in our land. Almost all scientists have come into contact with that ceramics, but most of them have contented themselves with a general description of the finds without any particular consideration of the different types, variants, decoration and production processes. The brothers Hirmengilt and Karel Škorpil described for the first time the most frequently occurring earthenware used in funerals, thus summarizing the results of the explorations of tumuli and necropolises.[11] One decade later I. Ivanov published the ceramic material found during the excavations in the ancient site and necropolis near the village of Kadin Most, district of Kjustendil. According to him, part of the earthenware belonged to Hellenistic art, another to Roman art, and a third part was of local Thracian origin.[12]

S. Stefanov reported about finds of imported and local ceramics discovered in the surroundings of ancient Novae,[13] and the present-day Belene,[14] while G. I. Kazarov called attention to the earthen jugs found in Gigen.[15]

Varied ceramic material from the tumular necropolises near Enija (present-day Mladinovo) and Bunarčevo (present-day Izvorovo), near Svilengrad, was reported by V. Mikov. Fine pottery with glazing was prevalent among the finds: deep bowls, dishes, earthen jugs and small vessels of coarse clay. The ceramic material found by the author was referred to the Roman era and was dated to the 3rd-4th century A. D.[16]

Analogous in form and apparently from the same time are the ceramic finds from the tumular necropolis near Mezek and Gara Svilengrad, studied by I. Velkov.[17] Small hemispheric, two-handled cups, deep dishes, earthen jars with appliquéed handles and tall earthen jugs were discovered in it. Romanized Thracians had been buried in that necropolis. The new thing noted here by I. Velkov was the presence of Arretine-type earthenware. Although the author did not specify the ceramic centre they originated from, he concluded that ceramic production centres should be sought in our land, created by settlers-craftsmen from the Western and Eastern Roman provinces. He published many finds made of clay (vessels, terracotta, etc.) found in different places in Bulgaria.[18]

Earthenware dating from the Roman era were also published by A. Javašov,[19] D. P. Dimitrov[20] and D. Končev.[21]

After September 9th, 1944, Bulgarian archaeology was radically reorganized on the basis of new scientific principles of historical exploration. Complex explorations of archaeological sites from different eras began on a large scale. Meanwhile, archaeological excavations were carried out to save a great number of monuments which had been in danger of being destroyed by the extensive construction in different regions of the country. The Bulgarian museums were enriched with many new finds. The necropolises excavated in the surroundings of the Roman towns and on their territories turned out to be particularly rich in ceramic material. They brought to the fore the problem of distinguishing local from imported ceramics.

Earthenware from the Roman era was found quite often in the ancient sites and necropolises on the territory of the ancient Philippopolis.[22] The ceramic material found in the present-day town of Plovdiv is of great interest. The hypothesis about its being a local production, stated in the past by I. Ivanov and I. Velkov, was developed further by L. Botušarova, who published the results from the archaeological exploration, making a distinction between local ceramics and ceramics imported from Asia Minor.[23]

K. Žuglev showed that there were ancient traditions in pottery making in Thrace — various Thracian ceramics had been manufactured, as well as some local imitations of imported terra sigillata.[24]

Various earthenware of fine clay, consisting of vessels similar in form, turned on a potter's wheel, were discovered in the ancient necropolises, explored during the last three decades on the territory of Augusta Traiana.[25] Deep two-handled urns were usually discovered, as well as slender earthen jugs, amphora-like vessels, deep dishes and small, two-handled cups with heavily bulging middle part. Almost all vessels had no decoration, with the exception of some urns whose upper cylindrical part was decorated with incised, stylized, plant ornaments. Most of the pottery found on the territory of Augusta Traiana had exact parallels among the finds from the ancient necropolises in the districts of Kazanlăk,[26] Sliven[27] and Nova Zagora.[28] Probably, they were made in some ceramic centre. Some pottery, dating from the Roman era and found along the Bulgarian Black Sea coast,[29] had parallels in the ceramics manufactured in the interior of the country, but most of them were closely related to the ceramic production of Hellas and Asia Minor, and dated to the same era.[30]

The results from the archaeological exploration of Cabyle, which began a few years ago, confirm the presence of local production during the Roman era. Four pottery kilns and a lot of ceramics and potsherds were discovered here, and this provides the possibility of defining the production list of the ceramic workshops in the ancient town.[31]

Intensive explorations of many sites in North Bulgaria began during the last three decades, but the ceramic material is missing so far in scientific communications about the results of the archaeological excavations.

Novae is an exception to a certain extent in this respect. A Bulgarian-Polish archaeological expedition has been working on this site for more than two decades and every year the members publish preliminary reports about their respective work. These preliminary short reports give an idea of the rich variety of ceramic material found on the site.[32] Side by side with the imported ceramics manufactured in the western workshops, the so-called terra sigillata was discovered in Novae, also brought from Asia Minor. A significant part of the vessels offered at the market in Novae were manufactured in the ceramic centres near Pavlikeni and Butovo or moulded in local workshops, and if the lack of any reports prevents us from forming an idea of the ceramics manufactured in all other towns, the explorations carried out on their teritory presented various ceramic material which compensates to a certain extent this deficiency. In this respect, we could point out the explorations of the necropolises in the districts of Vidin,[33] Vraca,[34] Pleven,[35] Veliko Tărnovo,[36] Ruse,[37] Tăgovište,[38] Varna, [39] and Tolbuhin.[40] All of these necropolises date from the 2nd-4th century. Small earthen jugs, with the typical flattened cone-shaped necks, one- or two-handled jugs, amhora-like small vessels, censers, etc., prevailed among the ceramic finds discovered in them.

The comparison of the ceramic material discovered on the sites in Bulgaria shows earthenware similar in form, but different in workmanship. This suggests that a great number of workshops functioned during the Roman era, where fine ceramics were manufactured as an imitation of the imported potteries. This opinion, as it was already pointed out, has been expressed by a number of Bulgarian archaeologists. It is confirmed by the pottery kilns discovered recently on many ancient sites in the country.

Many pottery kilns have been discovered in Bulgaria so far, but some of them have not been published yet. A pottery kiln dating from the 2nd-4th century A. D., which is of great interest, was unearthed near the village of Novo Selo, district of Vidin.[41] It had two chambers and was dug into the ground. The interesting thing about it are the side chimneys conducting the hot gases without directly affecting the fired ceramic products. This was characteristic of the kilns where oxidized firing of fine potteries of the type terra sigillata took place. The kiln in Novo Selo was the only one of this type discovered in the country. Another partially destroyed kiln was also discovered there, full of clay lamps of different sizes and shapes.[42]

Ancient pottery kilns were also discovered near Raciaria, half-dug into the ground, with round grates supported by one pillar.[43]

A round, two-chambered kiln with one supporting pillar was discovered in the locality called Horosanja near the village of Altimir, district of Vraca.[44] Considering the other materials and coins dating from the 4th century discovered in that region, the author himself dated the kiln together with the ceramic products found in it, to the same era. However, the small earthenware jugs discovered in the kiln were typical of those dating from the mid-2nd century and the beginning of the 3rd century A. D., when that particular type of earthenware had completely disappeared.

Many kilns were discovered during the exploration of the ancient town of Novae. In 1959, eight destroyed pottery kilns were discovered east of the fortified city wall.[45] When they were published, comparative material from other

ancient centres was used: different types of kilns dating from the Roman era were described and the stages of their construction were traced. In 1966 two pottery kilns were discovered in the eastern sector of Novae, partially destroyed at the time of construction of the southern city-gate.[46] A pottery kiln which had functioned in the second half of the 4th century was excavated in the northern part of the forum of Novae. It belonged to the half-dug pottery kilns having one tongue-shaped pillar.[47] The kiln discovered outside the west city wall dated from the same era; it was large, rectangular and had one supporting (tongue-shaped) pillar.[48] This type of kiln was usually designed for baking bricks and tiles. Quite often, however, rectangular kilns had also been used for baking ordinary earthenware of bigger sizes. This fact was confirmed by the discovery of a great number of potsherds in the kiln and around it. Similar cases were known from Butovo and other ceramic centres.

Three pottery kilns were explored in the Roman villa near Augusta Traiana.[49] They were round, half-dug into the ground, with one tongue-shaped supporting pillar and were grouped around one common working platform. The kilns functioned from the 2nd to the 3rd century. Ceramics used in everyday life were produced in them.

Two-chambered pottery kilns with a round grate, supported by one pillar, were found during the excavations of the Roman villa in Kalimantci, near Mihailovgrad.[50]

The explorations near the village of Pet Mogili, district of Šumen, threw considerable light of the problems of ceramic production in the Bulgarian lands.[51] A whole complex for production of fine and even coarse earthenware was discovered there. The five kilns explored so far were half-dug into the ground and their round grates were supported by one tongue-shaped pillar. The ceramics produced near the village of Pet Mogili were somewhat different in comparison with the other contemporary Roman ceramics produced by the centres around Nicopolis ad Istrum. The 'fine' ceramics had considerably coarser fabric, although they had preserved their typically Roman forms and were dated to the 2nd-4th century.

The problems of ancient ceramics have been examined for many years now by T. Ivanov,[52] A. Balkanska,[53] C. Dremsizova,[54] D. Džonova[55] and A. Dimitrova.[56]

After the archaeological explorations in Nicopolis ad Istrum had been resumed in 1945, T. Ivanov paid attention to the ceramic material as well (greyish-black and fine ceramics) and dated it to the 3rd-4th century on the basis of the coins found.

With the extension of the excavations in the following years, the collection of ceramic finds was enriched with some new specimens which will be published soon. The ceramic material from the Roman era and that discovered during archaeological excavations in ancient Apollonia and the present-day town of Sandanski was explored and published under his guidance.

The studies of A. Balkanska focus on the ceramics discovered during the archaeological excavations in Serdica, Nicopolis ad Istrum and Oescus. She came to the conclusion that the rich variety of earthenware forms and decorations dating from the Roman era testified to development of local production, which took an important place in the economy of Thrace and Moesia.

For the first time in Bulgaria, C. Dremsizova drew attention to the local greyish-black earthenware used in everyday life, which is usually found together with fine ceramics.

D. Džonova investigated ceramics decorated with Dionysian scenes, as well as clay urns with human faces on them.

A. Dimitrova established the presence of some terra sigillata — local production. She extended her investigation in that sphere and wrote about the terra sigillata found in the country until now, which was produced in the West Roman workshops.

Separate finds of Roman ceramics were published in the works of a number of Bulgarian archaeologists.[57]

The archaeo-magnetic studies of M. Kovačeva[58] contributed to clarifying the acient ceramic production and dating of the production equipment, as well as the technological investigation carried out by V. Načeva[59] on red glaze on vessels found in the Roman ceramic centres in Butovo, Pavlikeni and Hotnica.

A great number of foreign scholars showed an interest in Roman ceramics found in the Bulgarian lands.

We should mention the article of the Polish archaeologist B. Rutkowski about Roman ceramics in Bulgaria and especially about the results from the explorations in the ancient ceramic centres near Hotnica and Butovo.[60] The investigation of G. Popilian about the ceramics from Oltenia[61] was very important for the identification of our ceramics abroad. In his work the Romanian scholar used abundant comparative material discovered in Bulgaria and found ceramic production from Butovo and Pavlikeni north of the Danube. The results from the archaeological explorations of the ceramic centres discovered on the territory of Nicopolis ad Istrum[62] are an important part of the studies of the German scholar I. Henning, based upon the tendencies in the development of ceramic production in the lands along the Middle and Lower course of the Danube during the 1st millennium A. D.

The survey of the investigations on Roman ceramics in Bulgaria carried out so far shows that there is a considerable number of works on this problem; many opinions and considerations have been stated and a great number of ideas of true merit have been suggested. All this provides a solid basis for a complete and detailed investigation of the problems of the provincial Roman ceramics, dating from the 2nd-4th century A. D., discovered in the Bulgarian lands.

NOTES TO THE INTRODUCTION

[1] СУЛТОВ Б., 1962, 30—34; 1969a, 12—24; 1969б, 479—488; 1972a, 177—182; 1972б, 21—29; 1976; 1977, 11—62; 1979, 13—21; SULTOV B., 1963, 46—47; 1979, 103—110; 1984, 184—190.

[2] RUTKOWSKI B., 1963/64; 1963, 234—240; POPILIAN Gh., 1976, 50 sqq; HENNING J., 1977 181—206; POIRIEUX C., 139 1980, 72—73.

[3] ИСТОРИЯ НА БЪЛГАРИЯ I, 1979, 304 сл.

[4] ИВАНОВ Т., 1977, 16—29 with literature

[5] ГЕРОВ Б., 1950, 19 сл.

[6] Cf. Notes Nos. 37, 38 and 39 to Chapter One

[7] ГЕРОВ Б., 1950/51 — 1951/52, 105 сл.; ТАЧЕВА М., 1968

[8] ГЕРОВ Б., Op cit., 110 сл.

[9] IBIDEM, 115 сл.; СУЛТОВ Б., 1962, 30 сл.; Unpublished materials

[10] ВЕЛКОВ В., 1959, 27 сл.

[11] ШКОРПИЛ Х. и К., 1898, 168

[12] ИВАНОВ Й., 1910, 178—188

[13] СТЕФАНОВ Ст., 1928/29, 324

[14] СТЕФАНОВ Ст., 1932/33, 396—397

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[48] This kiln was unearthed by B. SULTOV — unpublished.

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CHAPTER ONE

TOPOGRAPHY AND DEVELOPMENT OF THE EXPLORED CENTRES

The development of ceramic production on the territory of Nicopolis ad Istrum was connected with the general economic upsurge taking place in the Roman provinces at the beginning of the 2nd century A. D.

The first potter's workshops were built in the surroundings of the newly-founded Roman town, as well as on its urban territory, near rich clay deposits, water sources and woods, in the proximity of big settlements and — last but not least — along the important Roman roads connecting Nicopolis ad Istrum with near and far-off towns of the Empire.

Traces of ceramic production during the 2nd-4th century have been preserved in the northwestern outskirts of Nicopolis ad Istrum along the small river running along the village of Nikjup and the east fortification wall of the town. Ruined pottery kilns and many fragments of fine and coarser earthenware were discovered in that area. A clay mould for making clay lamps was also found there. [1] Similar clay moulds were found in Butovo and dated to the 3rd century. [2]

In the last few years regular archaeological explorations began at a big centre for production of bricks and tiles, situated south of the present-day town of Bjala Čerkva, along the Roman road from Novae to Disconduraterae, Augusta Traiana, Constantinople and Asia Minor. [3] Three kilns for baking of tegulae have been discovered so far, as well as the foundations of a big architectural complex which had existed from the 2nd to the 4th century. Kilns for various earthenware had been destroyed while exploiting the clay-pits for the modern plant for ceramic production. [4]

Archaeological explorations have been carried out on a wide scale for more than two decades now on the territory of Nicopolis ad Istrum and particularly in the three ceramic centres discovered near the present-day towns and villages of Hotnica, Pavlikeni and Butovo. [5] The ceramic centre near Hotnica was the earliest, i. e. in the first decades of the 2nd century. The ceramic centre near Pavlikeni was founded at the same period, followed some time later by the ceramic centre in Butovo.

I. THE CERAMIC CENTRE NEAR HOTNICA

Hotnica is located about 17 km northwest of Veliko Tărnovo. The last foothills of the Balkan Mountains end to the south of the village and to the north lies the valley of the Rosica River. The small river Bohot, a tributary to Rosica, comes from the southwest, runs across Hotnica, then to the northeast. The ancient Roman road from Nicopolis ad Istrum to Constantinople [6] followed the valley of the Bohot River.

More than thirty archaeological sites have been sought out and registered on the territory of Hotnica, dating from the Neolithic up to the late Middle Ages. [7] The relicts dating from the Roman era are numerous. The quarries on

the high stony plateau, south of Hotnica, had been exploited for the needs of Nicopolis ad Istrum. A big settlement inhabited by the stone-cutters had been built near them. Some unfinished carved stone blocks, coins (from the 2nd-4th century) and fine and coarser earthenware were found on this site. [9]

Remains from some ancient settlements are still to be found in the locality called Kalimanica,[10] 4 km to the northwest of the village; in the locality Barata,[11] lying between Hotnica and Samovodene, and in the locality Musinski Kelemeta — about 7 km to the southwest of Hotnica.[12]

The never-running-dry Karst spring Kaja Bunar, wnich flows into the Bohot River, is situated 3 km west of the quarries. The area on both sides of the spring is slightly sloping and cut through by a number of dry ravines. Long ago there had been vast pastures, now turned into arable land. Foundations of buildings and fragments of Thracian, Roman and Mediaeval Bulgarian ceramics were discovered during excavations in this area.[13]

The foundations of a rectangular building, pointing to the directions of the world, show up on the still preserved meadow, about 300 m east of the Karst spring. The southeastern corner of the building falls into arable land and ploughing has turned up rough stones stuck with mortar, as well as fine ceramics and coins from the 2nd-3rd century. Directly west of it stand three tumuli. One of them was destroyed while tracing a new road from Hotnica to the village of Momin Sbor, over the ancient Roman road.

Roughly 350 m west of Kaja Bunar the foundations of a building and twenty-one pottery kilns were discovered.[14]

The building is rectangular, measuring 17.90×8.30 m. The foundations were built of limestone pebbles and the upper part of non-durable material — adobe and wattle and daub. The roof was made of arched tegulae and it also had some ventilating fittings (special tegulae with covered vents). That building, most probably a potter's workshop, had three adjoining rooms. An oval platform 1.20×1.50 m was discovered in the southern half of the East room, built of rammed pebbles. Oxidized iron plates were found on this platform, most probably parts of a potter's wheel. A single mould was also found for making appliquéed ceramics. The southern side of the room had an entrance 2.20 m wide. There had been a second entrance to the Middle room, 7.40×6.90 m. People had access to it by an entrance in the southern side of the building. In the southwestern corner of the Middle room there had been a pottery kiln, half-dug into the ground. Numerous fragments of fine ceramics and water-pipes were found around the working area. A thick layer of yellow, well-processed clay was found in the northeastern corner of the room with the kiln.

The dimensions of the West room were 4.25×6.90 m. Fragments of greyish-black ceramics used in everyday life, were found in its northern half and in the centre of the room there was a fireplace. Its entrance was in the southeastern corner.

The other twenty pottery kilns were discovered not far from the workshop. They were grouped in a circle, around a common working platform and they were all used at the same time. Kilns were also built later, using the platforms of some already destroyed kilns.

Three other pottery kilns, located around one common working platform, were discovered 25 m east of the already mentioned potter's workshop. The three of them had been destroyed at that time and the platform had been turned into a garbage pit. It was filled with fragmentary earthenware of fine ceramics, among which prevailed flat-handled amphorae and earthen jugs, small vessels, dishes, censers and cups.

The kiln built 25 m south of the workshop is of great interest. Its grate was made of imbrices and tegulae put radially on a clay pipe used as a supporting pillar.

A group of kilns were discovered to the northwest of the workshop. They were used in different times. One of them had been already destroyed and abandoned at that time. The partition had been removed from them and the lower chamber turned into a working platform serving the two pottery kilns built later.

Due to some defects occurring during the firing, one of the kilns had been abandoned and turned into a clay store. A considerable amount of clay prepared for moulding was found in the kiln itself.

Only one pottery kiln was discovered west of the workshop. This had also been abandoned because of some defects which had occurred during the firing and later used as garbage pit which was filled with discarded greyish-black ceramics used in everyday life. Prevalent among those are one-handled pots, deep bowls and mortars made of clay and sand, and resembling the imported clay mortars.

The remaining kilns were used with independent working platforms. They were arranged in a straight line northeast of the potter's workshop and they reached to the dry ravine delimiting the eastern part of the site. On cultivating the land, many burnt spots were discovered here, as well as remains of destroyed kilns and many potsherds. Prevailing among them were fragments of pots, dishes and bowls, made of clay, containing sand of large-sized grain.

The two-chamber kiln with no supporting pillar was a find of interest, discovered in the ceramic centre near Hotnica; it was located about 10 m north of the potter's workshop. Instead of the usual materials for such a centre, an exceptionally great number of potsherds were found in the kiln and around it. Those ceramics do not belong to the Roman era, but to the material culture of the First Bulgarian State.[15]

The Mediaeval Bulgarian pottery kiln discovered near Hotnica had two chambers and was dug into the ground, but its grate had no supporting pillar.[16] More than twelve broken vessels were found inside the kiln and in front of the fireside. They belong to the already known two groups of earthenware, discovered in the Mediaeval Bulgarian settlements and necropolises.

One of the groups of earthenware consisted of pots with wide mouths, without handles, which had been turned on a potter's wheel. Some of them had been decorated with incised lines by means of a comb when placed on the potter's wheel.[17]

The earthenware of the second group were decorated with shiny strips before the baking.[18] The two groups of ceramics were found in the same kiln and this fact is of great importance. All this has been established also in the Mediaeval Bulgarian settlements and necropolises. Therefore, during the 9th-10th century ceramic production existed near Hotnica and it was marketed in numerous Bulgarian settlements. This is not accidental, because only 325 m east of the ceramic centre, near Hotnica, the foundations of a Mediaeval Bulgarian church were discovered. In fact, this is not the only Bulgarian pottery kiln discovered in that area. In 1973 two kilns from the 12th-14th century were discovered and investigated east of Hotnica.[19]

Varied archaeological material, mainly whole and fragmentary vessels, were investigated during the excavations in the ceramic centre near Hotnica. Part of them were left in the kilns, which had been destroyed during the

firing,[20] and others were discarded in the destroyed ovens and the working platforms, turned into garbage pits.

The earthenware discovered near Hotnica is classified into two main groups:

1. Greyish-black ceramics used in everyday life

Here belong the vessels made of clay containing sand. In some of the them the sand is very fine-grained, while in others the size of the grains reached 4 mm. All of the pots had been turned on a potter's wheel and fired at a temperature of 600—800°C. As a result, the colour of the clay varies in the different parts of the vessels — from black, greyish-black, dark-brown to brown. The greater part of that type of ceramics had been subjected to additional smoking.[21]

2. Fine ceramics

This group consists of thin-walled vessels, made of well purified and worked-up clay with no additives. They were fired at a temperature over 900° C and because of that their colour varies from light to dark brown. Almost all of them were coated with a thin layer of glaze, applied unevenly on the surface of the clay vessel, usually by dipping it into the glaze solution. Depending on the degree of firing, the colour of the glaze varied from light-brown, brown, to bark brown.[22]

Four bronze coins from the 2nd-3rd century and a bronze fibula with a small hinge, dating from the end of the 1st and the beginning of the 2nd century were discovered in the ceramic centre near Hotnica.

Having in mind the discovered archaeological and numismatic material and the author's personal observations during the archaeological explorations, it could be confirmed that the pottery kilns discovered near Hotnica did not function simultaneously, but consecutively for a long period of time, starting at the beginning of the 2nd up to the middle of the 3rd century A. D.

In the earliest pottery kilns near Hotnica only ordinary greyish-black ceramics used in everyday life were fired, the clay being mixed with coarse-grained sand. Later, along with the ordinary coarse ceramics, a production of fine ceramics was introduced. Improvement of quality is noticed in the ordinary greyish-black ceramics. Vessel walls become thinner, with less additives of quartz and, moreover, they began to imitate the forms of the fine ceramics. For instance, along with amphorae of fine clay, greyish-black amphorae began to be produced.

The production of red glazed ware, widespread during the Roman era, had also been mastered, without deviating from the traditions of the ancient Thracian potters. This was particularly well discernible in the mass production of one-handled conical cups, tall stoups made of coarse clay on a potter's wheel, imitating some more ancient Thracian forms.

The production of the ceramic centre near Hotnica was sold in the nearest settlements and mainly in the settlement of the stone-cutters near the quarries of Nicopolis ad Istrum.

The discovery of a Mediaeval kiln in any ancient production centre is a contribution of value to the investigation of Bulgarian ceramics. This is a fact which not only testifies that the quality of the clay near the village of Hotnica had attracted the attention of the Bulgarian population, but it also suggests data about the continuity in ceramic production between ancient times and the Middle Ages in the Bulgarian lands.

II. THE CERAMIC CENTRE NEAR PAVLIKENI

The locality called 'Vărbovski Livadi', crossed from west to east by a ravine, is located on the boundary between the territories of the town of Pavlikeni and the neighbouring village of Vărbovka. To the south and to the north, the terrain is higher and slightly sloping toward the ravine. While cultivating the land here walls of buildings, limestone columns, ceramics, burnt plaster and Roman coins dating from the 2nd-3rd century, were discovered.[23]

The results from the long archaeological investigation which started in 1971[24] showed that here, on an area of 15 hectares, a large complex consisting of residential quarters and farm buildings, potter's workshops and kilns, clay-pits and a tumular necropolis, had existed.

The complex was built at the beginning of the 2nd century over the ruins of an open Thracian settlement dating from the end of the Bronze and the beginning of the Iron Age. Its development continued up to the middle of the 3rd century, undergoing four building periods.

During **the first building period** residential quarters and farm buildings were erected, as well as brick-kilns. A clay-pit was exploited in the eastern part of the complex. The residential quarters consisted of seven adjoining rooms, three of these were heated by a hypocaust system. The foundations of a big farm building consisting of two rooms were discovered west of the residential quarters. Local sandstone and white mortar was used.

The need of bricks and tiles during the period of intensive construction which started in the first years of the 2nd century required kilns for baking the building materials. Three kilns for tegulae and one for imbrices have been discovered so far near Pavlikeni. The brick-kilns for tegulae are all of the same type — half-dug into the ground, with two chambers, and separated by a rectangular grate. Entirely similar kilns for firing of building materials were found in Butovo and Bjala Čerkva. They belong to the type of tunnel-shaped kilns with side branchings. Some tegulae were found on the grate of one of the kilns discovered near Pavlikeni. The kiln for firing imbrices is a single-chambered round platform with a perforated grate, fixed to a solid supporting pillar. The imbrices were vertically arranged in a circle upon that platform. The kiln mentioned above and one of the brick-kilns had a common working platform. Southwest of the brick-kilns, on an area of 0.5 decares, a clay-pit had been exploited. The layer of good-quality clay, located at depth of 0.80 m from the actual ground level, was exploited in ancient times to a depth of 2.50 m. When the clay-pit was exhausted, it was turned into a garbage pit.

The second building period is related to the beginning of pottery-making near Pavlikeni. The beginning of this period is dated to the second decade of the 2nd century. Two pottery kilns were built then (Nos. 1, 2, 3, 4 and 5), as well as two big buildings (Nos. 3, 4) and a clay-pit had been exploited in the eastern part of the complex.

All pottery kilns have two chambers and a round grate supported by a pillar. Kiln No.1 is of particular interest. It was desrpoyed during the firing and the deformed ceramic products fell into the lower chamber. That kiln had been used for baking the semi-conical small bowls and cups, decorated with squirted relief ornaments. A big building was erected south of the pottery kilns and not far from the abandoned and levelled clay-pit. It had a central room, used as a lodging. There are four smaller rooms around it, used as stores for agricultural products.

A new clay-pit was exploited during the second building period, located east of the brick-kilns. Three other constructions were built at the same time, resembling small two-chambered pottery kilns, which were discovered south of kilns Nos. 3 and 4. A clay urn turned upside down was used instead of a supporting pillar and a clay amphora was used as a second chamber plastered up with clay.[25] Remains of charred organic matter (cherry-tree resin) and some quartz grains, probably used in the ceramic production, were found in the amphora.[26]

During the second building period, construction had also started in the western part of the complex. A big building was discovered here, its layout resembling building No.3 in the eastern part of the complex. It had been accessible from the southern side and a big anteroom, supported by columns, led to the remaining rooms. In the southeastern corner of the anteroom a working platform was discovered, serving a two-chambered pottery kiln built outside the building. A great amount of fine ceramics and potter's tools were found on the working platform of the kiln and in the East room of the building. There had probably been a potter's workshop. The central room of the building had probably been used as a lodging.

The third building period generally coincided with the rule of Emperor Marcus Aurelius, i. e. c. 138—170 A. D. New residential and farm buildings, potter's workshops and kilns were erected in this period. Construction in the eastern part of the complex was particularly intensive. New constructions were adjoined to the already existing older farm and residential buildings. In that way a great architectural complex was laid out, with rooms of various sizes and designations, situated around an inner courtyard with a colonnade. Thus, a big building with three rooms was erected next to the eastern façade of the residential building with adjoining rooms, closing in that way the eastern part of the complex. A second building was erected westward, outlying the southwestern corner of the inner courtyard.

North of the big building a farm courtyard was laid out, with two shelters and three smaller rooms used for storing agricultural products and farming implements.

The old pottery kilns were not used during that period, remaining under the foundations of the new buildings. The tendency had been to drive the ceramic industry as far away as possible. Only two pottery kilns apparently functioned at that time, and one small workshop had remained outside the northern wall of the architectural complex. The workshop measures 7.50 × 10 m and it has two rooms (Building No..6). Clay seals for stamping earthenware and a clay mould for making lamps were found in one of its rooms.

During the third building period intensive construction took place both in the western and southwestern parts of the complex, where two other buildings were discovered, as well as a farm building and twenty-two pottery kilns.

The first of those buildings (No 7) repeated the layout of the buildings already described (Nos. 3 and 5), dating from the second building period. There was also a spacious anteroom in the southern part of the building. The central room, used as a lodging, was the biggest (9.50×10 m). There was a rectangular fireplace in the centre, outlined by vertically arranged bricks. Fragments of amphorae, iron hooks for hanging meat and pieces of big clay vessels were found in the East room. All that defines its function as a store for agricultural products. The two west rooms were used as a potter's workshop. Tools used in ceramic production and many fragments of fine ceramics were discovered in them.

The building described above also had a big courtyard, surrounded by a stone wall. Two pottery kilns were discovered in the northwestern part of the courtyard. They have one working platform and they completely resemble kiln No. 1 in structure.

The second building completely imitates the layout of the Greek temple *in antis*. An anteroom supported by two wooden columns led into a rectangular room where fragments of fine ceramics and potter's tools were found. That building could be defined as an independent potter's workshop. The kilns situated northwest of the building and designed for firing of fine ceramics only, probably belonged to that workshop.

Two small kilns built southwest of the second potter's workshop are of particular interest. Only their lower chambers with one tongue-shaped supporting pillar have been preserved. Most probably these are not precisely pottery kilns, but the so-called fornaculae; they resemble those discovered in the eastern part of the complex and used for preparing half-finished materials for the ceramic production.

A residential building (No. 9), found in the southwestern part of the complex, belongs also to the third building period. Various archaeological material was discovered there — fine ceramics, bronze statuettes, small copper lamps, coins from the mid-2nd century, etc.[27]

A big courtyard was discovered south of the residential quarters. Its eastern part had been occupied by farm buildings and potter's workshops, and the western part by pottery kilns. All of them have two chambers and one supporting pillar.

An abandoned clay-pit was found 10 m south of the kilns. Only discarded ceramic products were found in it. Prevalent among the finds are the dishes and bowls with outwardly curved rims, as well as tall cups, decorated with squirted relief ornaments, typical of the production of that ceramic centre during the first half of the 2nd century.

To the third building period we could refer the collective find of 3,727 Roman silver coins from a room located in the southwestern corner of this architectural complex and belonging to the eastern part of the site.[28] The latest coin of the find dates from 169 A. D. — the time of the joint rule of Emperor Marcus Aurelius and Lucius Verus. A year later the Costoboci crossed the Danube and a large group of them set off for Achaia *via* Abritus — Nicopolis ad Istrum — Melta and Serdica.[29] The Barbarian invasion was catastrophic for the site near Pavlikeni. A great part of the buildings were destroyed and plundered and even the limestone columns and bases broken and thrown into the well in the inner courtyard.

The fourth building period is related to the last stage of existence of this ceramic centre. Its beginning was dated following the tragic invasion of the aforementioned Barbarian tribes, and it continued up to the middle of the 3rd century, when the whole vicinity became the victim of a new devastating invasion. Construction slowed down. Some repairs are noticed of the undestroyed buildings, whose rooms had been turned into independent lodgings. The *praefurnia* and *suspensurae* of the heating facilities were also destroyed, and simple hearths daubed with clay were built instead on the levelled floor of the lodgings.

Ceramic production was dying out. Fine ceramic products had been replaced by coarse greyish-black earthenware. The metal finds used in everyday

life were fewer in number, and the restricted constructions are of coarse whinstone and clay. Gradually local ceramics were replaced by production imported from Butovo.

* * *

The results of the archaeological explorations carried out so far near Pavlikeni give grounds for claiming that the ceramic centre in the Vărbovski Livadi locality was founded upon the ruins of a Thracian settlement from the end of the Bronze Age and the beginning of the Iron Age, which had continued to exist a few centuries later. The main products of this centre were the fine red glazed and greyish-black wares, the latter used in everyday life — in quite limited quantities. The whole ceramic production had been turned on a potter's wheel and part of the earthenware had been additionnaly decorated using different techniques. Most widely used techniques were: squirting of liquid clay (Barbotine technique), sealing and appliquéing of relief ornaments, previously made in single clay moulds.

The site of the ceramic centre near Pavlikeni had been propitiously chosen. The whole vicinity is surronnded by old forests and good-quality clay in large quantities. The waters of the never-drying Vărbovsko Dere flowing across the ceramic centre had been of great importance for its functioning. It was certainly not by chance that the potters had settled in that locality. It had been a natural centre, surrounded by large settlements, where a greater part of the ceramic production was marketed.[30] The proximity to the important Roman roads was of significance,[31] because they served as a link between near and far-off towns of the Roman provinces Moesia and Dacia,[32] where part of the production reached.

Nevertheless, the ceramic centre near Pavlikeni remained with limited potentialities and therefore was not able to resist the competition of the bigger centre in Butovo, which had won recognition by the beginning of the 3rd century.

III. THE CERAMIC CENTRE IN BUTOVO

Butovo lies 50 km northwest of the town of Veliko Tărnovo, in a flat country, surrounded from east and south by small hills. A hill called Kalvaka rises just south of the village. This hill overlooks the surrounding area and offers good-quality clay which is used to this day for the production of bricks and tiles. The small river Lomja, tpibutary to the Osăm River, runs across Butovo.

Many archaeological and epigraphic records of the past have been found in Butovo; some of them are preserved in the Archaeological Museum in Sofia, others — in the District Historical Museum in Veliko Tărnovo. That is why many researchers studying the Antiquity in the Bulgarian lands have been looking for a significant ancient settlement in the vicinity of Butovo, lying on the boundary between the Roman provinces Thracia and Moesia Inferior, as well as on the junction where the Roman roads intersected from Nicopolis ad Istrum across Melta and Serdica for Central Europe and from Oescus and Novae across the Balkan Mountains, Augusta Traiana and Constantinople to Asia Minor.[33]

At the beginning of this century Karel Škorpil[34] wrote about the ruins of a big ancient settlement on the vicinity of Butovo and the neighbouring village of Nedan, as well as about the archaeological materials found there. Later B. Gerov, referring to the epigraphic records from this region and especialy to the list of members of a Dionysian society (*thias*) dating from 227 A. D., assumed that there had been a settlement here (κώμη or *Vicus*), which had probably had connections with the First Italic Legion stationed in Novae. The presence of members of the society, who held different posts in the government of Nicopolis ad Istrum, shows that the settlement had belonged to its territory.[35]

The stamps on tegulae with the name of the First Italic Legion, found in Butovo, confirm the assumption stated by B. Gerov that there had been a detachment of the Legion or some kind of paramilitary settlers belonging to it.[36]

There are some other hypotheses about the nature of the settlement. Many researchers think that in the vicinity of Butovo they should seek not an ordinary settlement, but the Emporium Piritensium, known from a number of epigraphic records. For the first time this idea was suggested by G. Mihailov[37] and developed further by the Polish historian T. Zawadski.[38] The localization of Emporium Piritensium near the village of Butovo was accepted also by T. Ivanov.[39]

The ruins of the long-sought ancient sattlement near Butovo turned out to be lying under the foundations of the present-day village. This became clear during the archaeological excavations in the village itself and in its vicinity.[40] The abundant and varied archaeological and epigraphic material which was discovered and the observations made at the time of the archaeological explorations provided the possibility of making a complete stratigraphic characterization of the ancient settlement in Butovo.

Originally, a Thracian settlement had existed on the site of present-day Butovo. This is proved by the earthenware dating from the Bronze Age, found there, as well as the Thracian burials and silver coins dating from the time of Alexander the Great (336—323 B. C.).[41]

At the beginning of the 2nd century A. D. a large settlement came into being north of the Lomja River. Foundations of buildings of rough stones and mortar were found during the excavations. Some of the buildings had been provided with heating facilities. Many architectural elements were found in that part of the village — bases of columns and statues, capitals, archetraves, shafts, marble votive tablets, bronze statuettes and coins from the 2nd-4th century.

During the second half of the 2nd century, along the right hand river bank some potter's workshops and pottery kilns were built, forming complete ceramic quarters. To the east it reached the present-day cemetery of Butovo, to the south — the north slopes of Kalvaka hill and to the west it stretched as far as the bend of the Lomja River. Thirty-eight pottery kilns have been discovered in the ceramic centre so far. Most of them were discovered and brought down during past excavations.

Only one pottery kiln[42] was discovered in the westernmost part of the potter's quarters, not far from the river. It was half-dug into the ground, with one supporting pillar. Many fragments of fine ceramics and pieces of cylindrical clay objects were found near the kiln; they had been used as building materials in the construction of the big public buildings and private houses.

Most pottery kilns were found around the present-day square of the village of Butovo. The remains of four kilns have been preserved to the north of it, two of these being situated around a common working platform. The kilns

and the working platform had already in ancient times been turned into garbage pits filled with the discarded products. A clay mould for terracotta, imitation of *Venus Pudix*,[43] was of particular interest among the other finds. The model used by the craftsmen was a marble statuette of Venus, found not far from the pottery kilns.

The other two kilns had indepedent working platforms. One of them had already come down during the firing. A stone building was erected on the levelled terrain at the beginning of the 3rd century and used as a smithery. This was confirmed by the iron jacks and iron scraps found there. The smithery had been part of a large architectural complex, occupying the nothern part of the village square of today. A cartwright's workshop and smithery were near it, identified by various carpenter's tools discovered therein. South of it had been residential buildings. A military diploma dating from 227 A. D. was found in this part of the complex.[44]

Three pottery kilns were explored in the eastern part of the present-day square, in the neighbourhood of which there had been a small building (14×5 m) consisting of two rooms, the basement of which had been built of black whin-stone and the upper part of non-durable material. The building was probably used as a potter's workshop, because many fragments of fine ceramics were found in it, as well as a single mould with a negative image of Cybele used for additional decoration on earthenware.

Seven kilns were discovered in the southeastern corner of the square. One of these is of interest, as one of its grates is lying upon a sophisticated vaulted system. For the time being, it is unique in Butovo; as regards its construction layout — completely similar to the kilns for baking of bricks and tiles known from Pavlikeni, Bjala Čerkva and some other ceramic centres. The presence of a great amount of fragments of fine ceramics, found in the kiln and on the working platform, as well as the absence of discarded production usually found near any pottery kiln of the kind, suggests that these kilns had also been used for baking earthenware of bigger sizes. Some similar cases are known from Novae,[45] Aquincum,[46] etc.

South of the pottery kilns there had been a small potter's workshop consisting of two rooms (4.80×6.90 m). Five pottery kilns were discovered about 50 m east of the square and near the river. These were arranged in groups of three kilns, each around a common working platform. The foundations of a building, made of whin-stone and clay, were found near the kilns. Most potter's tools were found in that part of Butovo — mainly clay moulds for making trays. A clay die was found here for votive tablets dedicated to Orpheus. It had been copied from a metal relief, but defects had formed during the process of drying and baking, and so it had become unfit for use. The die was thrown away, together with the rest of the discarded earthenware and moulds, onto one of the kiln working platforms, already turned in ancient times into a garbage pit. Most probably, production in the potter's workshop, discovered in this part of Butovo, had specialized only in the making of trays and terracotta. A potter's workshop with six kilns was also discovered about 100 m east of the square. All of them were arranged around one common pratform, but had been destroyed and turned into a garbage pit. A small building was located south of them, constructed of whin-stone and clay — like all potter's workshops explored here so far. Elements of specialized ceramic production were also noticed in it. Together with some fine ceramics turned on a potter's wheel, clay lamps and terracotta were produced in big quantities. The

kilns and the workshop were used during the first half of the 3rd century, according to the archaeological and numismatic material found there.

Two pottery kilns were discovered 200 m east of the square. The first one is rectangular, with two supporting pillars; the second one — half-dug into the ground, with one supporting pillar, is one of the best preserved pottery kilns discovered in Butovo. It was built entirely of clay. The ground around the two kilns abounds in fragments of earthenware among which ordinary ceramics prevail. A small earthenware pot is of particular interest among these finds. It has one handle and is made of clay mixed with sand; the pot had been additionally smoked and the name Aurelius List....[47] scratched under its rim before the firing.

As it has already been noted, to the east the ancient ceramic centre reached the end of the present-day village. The new graveyard of Butovo today also belonged to its territory. According to information given by the local inhabitants, clay vessels, terracotta, coins and ruins of destroyed pottery kilns usually came out while digging for new graves. North of the graveyard, foundations of buildings were discovered, constructed of waste material from destroyed pottery kilns. These had probably been potter's workshops, situated in the easternmost part of the ceramic centre in Butovo. Traces of ceramic production were also found in its southern part.

A rectangular kiln with two supporting pillars was discovered 100 m south of the square, the grate had suffered serious damage during the firing and had subsequently been turned into a garbage pit. Earthenware of greyish-black ceramics prevailed amongst the finds discovered there. One clay *oenochoé* found here imitates the shape of metal vessels used for the same purpose. Part of a small building was found 6 m east of the kiln. Its foundations were built of stones and clay and the upper part of non-durable material — wattle and daub. The building had been covered with imbrices, some of which had round orifices for the smoke to come through. Similar ventilation facilities were found in Hotnica and Pavlikeni.[48] The earthenware, moulds for making lamps and the coins dating from the 2nd-4th century which were found provided sufficient grounds for claiming that the building discovered had once been part of a potter's workshop. The lower half of a pottery kiln, with one supporting pillar, was found about 40 m northeast of it. It had been one of the earliest kilns in Butovo, destroyed in ancient times and turned into a garbage pit. Among the finds discovered in it we should mention a clay mould for two-wick lamps, typical of the second half of the 2nd century. Many fragments of tegulae were found around the kiln, with side edges cut at right angles, which in Pavlikeni and Butovo are found together with coins dating from the middle of the 2nd century.

Five pottery kilns were found at the foot of the Kalvaka hill, where the ceramic centre ended to the south. The first two of these were built in a circle, around one common working platform. The ceramic material found in this part of the settlement consisted only of fragmentary earthenware, turned on a potter's wheel, with some additional decoration. The fragments with squirted, stylized plant ornaments prevailed. There were also fragments of rough greyish-black ceramics with lesser variety in shape. Usually they are oneor two-handled deep pots, as well as semi-conical deep bowls.

During the second half of the 3rd century the residential quarters of the ancient settlement lying under the present-day Butovo expanded south of the

river and over the earlier potter's quarters. New residential and farm buildings were erected over the ruined kilns and workshops. Life here ceased completely during the second half of the 4th century.

The ancient settlement in Butovo had four necropolises found so far: one of them is at the foot and on top of the Kalvaka hill, the second lies between the present-day ceramic plant and the yard of the cooperative farm, the third is next to the present-day pottery and the fourth is located to the north of the village.

One necropolis consisting of five tumuli explored in 1965 was discovered on top of the Kalvaka hill. Burials were performed by cremation in special pits.[49] The varied grave offerings consisted of ceramic objects and coins dating from the end of the 1st up to the second half of the 2nd century. The greater part of the earthenware was produced in other ceramic centres,[50] and only a very small part of it — found mainly in the later burials — was produced in Butovo.

Burials in the second necropolis were performed also by cremation and the grave offerings are completely similar to those found in the tumular necropolis on the Kalvaka hill.

The earliest burials in the third necropolis date from the beginning of the 4th century and they are all cremation interments.

The fourth necropolis, situated north of the village, was used towards the end of the 2nd century. The burials were performend by inhumation and the grave offerings consisted mainly of earthenware produced in the ceramic centre in Butovo.

Towards the end of the 2nd century cremation was obviously replaced by inhumation of the bodies in specially constructed brick graves. Various ceramic materials from the ceramic workshops in Butovo were found in them.

* * *

The results from the archaeological explorations carried out up to now showed that the excellent plastic properties of the clay from Butovo had provided a possibility for a varied ceramic production, the greater part of which had been earthenware turned on a potter's wheel. Deep bowls, shallow dishes, slender two-handled earthenware pots, conical cups, etc., were prevalent. Part of them were additionally decorated on the potter's wheel. Different tools and techniques were used for that purpose.

Liquid clay squirting upon the wet surface of the earthenware (Barbotine technique) was very widely used, and stylized vine-twigs, ivy-leaves and successfully imitated pine-cone scales were the decorative result.

Earthenware was additionally decorated by means of one or more moulds filled in advance with clay and appliquéed upon the wet earthenware. In this way earthenware with relief decoration was produced, imitating the metal vessels. Together with appliquéed ceramics, the production of vessels made in single clay moulds[51] also started in the ancient settlement in Butovo.

Towards the end of the 2nd century mass production of clay lamps started here. The potters usually took as a model the Eastern Greek and Western Roman lamps, creating forms according to the taste of the native consumers.

At the beginning of the 3rd century the production of terracotta[52] was also adopted. In many respects the craftsmen copied famous works of the ancient

sculptures. Here we should mention as an example the terracotta imitations of Venus Pudix, which were most widespread in this centre; but the potters also made terracotta which bore the marks of the individual artist whose aesthetic principles differed from those of the ancient masters.

The ceramic centres near Hotnica and Pavlikeni came into being at the same time, i. e. the first decades of the 2nd century, and they functioned till the mid-3rd century A. D. The basic production of the ceramic centre near Hotnica was greyish-black ceramics for everyday use, while the ceramic centre near Pavlikeni produced fine ceramics. It seems that the latter had become more popular, which was the reason for the expansion of its production. This was obviously one of the main reasons for the setting up of a new ceramic centre in Butovo towards the second half of the 2nd century, which flooded the whole vicinity with its production, as well as the neighbouring towns of Nicopolis ad Istrum, Novae, Succidava, etc. In the competition for markets between the ceramic centres in Butovo and Pavlikeni, the former somehow forced the latter to limit its production of fine ceramics and continue to produce only ordinary earthenware for everyday use.

Intensive ceramic production existed on the territory of Nicopolis ad Istrum, as well as in some other centres situated along the lower course of the Rosica River. They have not been explored as yet, but these centres have proved their presence through their discarded ceramic production, discovered while cultivating the land. Traces of their ceramic production are occasionally registered near the town of Suhindol and in the northern part of the town of Pavlikeni.

It could be established from the archaeological and numismatic material found on these sites that they had functioned simultaneously with the ceramic centres explored near Hotnica, Pavlikeni and Butovo. It is obviously not by accident that in this part of the country the most modern enterprises for building materials (bricks and tiles) are to be found.

NOTES TO CHAPTER ONE

[1] The upper half of a mould made of fine clay, light-brown colour. The mould was meant for lamps with more than one wick.

[2] СУЛТОВ Б., 1962а, 30, обр. 6

[3] The archealogical excavations near Bjala Čerkva, led by B. SULTOV and M. COČEV, started in 1973 with the discovery of a Dionysian sanctuary. Later on, kilns for bricks and tiles were unearthed, as well as earthenware kilns and the ruins of a large architectural complex lying near the road, leading from Novae to Augusta Traiana.

[4] The kilns were round, half-dug into the ground; diam. c. 1.20 m.

[5] SULTOV B., 1980, 379—388.

[6] СУЛТОВ Б., 1962б, 21—22.

[7] СТАНЕВ П., 1976, 5; АНГЕЛОВ Н., 1958, 389; 1959, 38—46; ИЛЧЕВА В. и Ив. КОКОРКОВ, 1975, 1—11; КОКОРКОВ Ив. и Й. АЛЕКСИЕВ, 1975, 134—136; while ploughing deep the fields north of the locality known as Mečata Dupka (Bear's lair), lying about 2 km east of Hotnica, a round-grated kiln was hit and ruined, built of clay and thatch. Around it, fragments of grey Thracian ware are found.

[8] ИРЕЧЕК К., 1974², 297—298.

[9] Unpublished materials kept in the District Historical Museum in Veliko Tărnovo.

[10] In this locality remains of a Thracian settlement and a necropolis of pre-Roman times are found; the settlement developed and grew in Roman times and continued to exist up to the Late Antiquity.

[11] СУЛТОВ Б., 1968, 45 сл.

[12] Here ruins of buildings are registered, together with a tumular necropolis and coins dating from the 2nd-3rd century. Unpublished materials.

[13] Unpublished materials for the archaeological map of the District of Veliko Tărnovo.

[14] СУЛТОВ Б., 1969а, 12—24

[15] IBIDEM, 14 сл.

[16] IBIDEM, обр. 13

[17] IBIDEM; for literature Cf. note 10.

[18] IBIDEM, 22, обр. 14б.

[19] АЛЕКСИЕВ Й., 1977, 55 сл., обр. 1, 2.

[20] СУЛТОВ Б., Op. cit., обр. 9.

[21] IBIDEM, 17—19, обр. 10.

[22] IBIDEM, 19—22, обр. 11, 12.

[23] СУЛТОВ Б., 1977, 27 сл.

[24] SULTOV B., Op. cit., 379 sqq.

[25] SULTOV B., 1984, 184—190.

[26] For similar facilities Cf. BLÜMNER H., 1879, 95—96, Fig. 16, 17.

[27] Unpublished materials.

[28] The coins were put in the jar on Tabl. XXXIX, 1 and were covered with the conical bowl on Tabl. XIV, 6.

[29] ИСТОРИЯ на България, 1979, 297.

[30] СУЛТОВ Б., Op. cit., 17 сл.

[31] СУЛТОВ Б., 1962в, 7.

[32] POPILIAN Gh., 1976, 50 ff.

[33] ШКОРПИЛ Х. и К., 1892, 94—95, фиг. 3; ДОБРУСКИ В., 1901, 733, фиг. 25; ЦОНЧЕВ Д., 1935, 456—457, обр. 277, 278; ГЕРОВ Б., 1950, 20 сл.

[34] ШКОРПИЛ К., 1905, 478 сл.

[35] ГЕРОВ Б., 1950—51, 112, inscription No 397.

[36] In the environments of Butovo, fragments of imbrices, bearing a stamp LEG. I ITAL(ica) were found. Unpublished materials from archaelogical surveys.

[37] MIHAILOV G., 1958, 121, No. 695.

[38] ZAWADZKI T., 1964, 531—538.

[39] ИВАНОВ Т., 1974, 44.

[40] СУЛТОВ Б., 1962а, 30—34; 1969, 479—488; RUTKOWSKI B., 1963—64.

[41] Traces of a Thracian settlement are found east of the present-day square of Butovo, while the Thacian interments lie south of the village, in the locality known as Kalvaka.

[42] The fragments of glassy-baked clay substance suggest the existence of other pottery kilns in the immediate vicinity, already ruined in Antiquity.
[43] Similar moulds are found also east of the square.
[44] Unpublished materials.
[45] Unpublished materials from the archaelogical expedition in Novae.
[46] For Aquincum — Cf. KUZSINSZKY B., 1932, 391.
[47] Unpublished materials.
[48] СУЛТОВ Б.,1969а, 17, обр. 8.
[49] ГЕТОВ Л., 1969, 39.
[50] Cf. the chronological characteristic.
[51] СУЛТОВ Б., 1972б, 21—29.
[52] СУЛТОВ Б., 1976, 20 сл.

CHAPTER TWO

ORGANIZATION AND TECHNOLOGY OF PRODUCTION

There are many studies on the problems treating the organization and technology of ceramic production during the Roman era, but the majority of them consider only the West Roman ceramic centres. The results from the long archaeological explorations in Italia, Gallia, Germania and other provinces have found their place in a number of fundamental research works. [1]

Still insufficient work has been done on the East Roman provinces. This state of matters could be explained mainly with lack of systematic complex archaeological explorations of the ceramic centres in this part of the Roman Empire. The only explored ceramic centre in Asia Minor for the time being was localized in 1911 by S. Loeschke near Çandarli — about 30 km away from Pergam near the ancient settlement of Pitane. [2]

More data about the different stages of the organization and technology of ceramic production in the East Roman provinces are known from the archaeological explorations of the ancient sites in the Northern Black Sea area. The monograph published forty-five years ago by V. F. Gajdukevič about the ancient pottery kilns discovered in Pantikapaion and Phanagoreia has not lost its significance. The origin and development of ceramic production is considered in the monograph from Marxist methodological standpoint.

The archaeological sources published in 1966 with B. A. Rybakov [3] as editor, contributed greatly to clarifying the ceramic production and the ancient ceramic building materials. The studies of the Romanian archaeologists, who explored Micia, Oltenia, etc., [4] also throw light upon the facilities used for firing the ceramic production.

Many kilns dating from the Roman era have been discovered in Greece. [5]

There are no special studies on the problems of ceramic production in Bulgaria, but there are a number of publications on some concrete problems by A. Dimitrova, [6] D. Džonova, [7] B. Sultov [8] and V. Načeva. [9]

The comprehensive exploration of the ceramic centres near Hotnica, Pavlikeni and Butovo provided a possibility and enough grounds for considering the most important and typical stages of the organization and technology of ceramic production. The discarded products and the obsolete potter's tools found in the garbage pits are of particular significance in this respect. All this allows to follow the development of production from the potter's wheel to the firing in the kiln, as well as the different techniques used for additional processing and decoration of the earthenware.

The pottery kilns discovered and explored by the author, which had been destroyed during the firing, together with the production left in them and the remains of combustibles, were of assistance in determining the stages of their construction, improvement and use, as well as the causes which led to their destruction. The various ceramic material in the potter's workshops helped to determine the character of ceramic production. It also confirmed the relative specialization and differentiation of earthenware. The presence of human fingerprints indicates implicity that women and children were also occasionally employed in the production of ceramics.

The archaeological data from the excavations and the epigraphic records found on the territory of Nicopolis ad Istrum helped in specifying the ethnic origin and the social status of the owners of the potter's workshops.

I. POTTER'S WORKSHOPS

The most significant stages of the sophisticated technological process of ceramic production took place in the potter's workshop processing of the clay, moulding and drying. For this purpose it was necessary to achieve constant temperature in the workshop, excluding sudden draughts, which had an unfavourable effect on the drying process.

1. Independent Potter's Workshops

Most of the potter's worshops discovered during the excavations had been either independent buildings constructed for this particular purpose, or occupying part of the potter's house.

The independent potter's workshops consisted of two or three rooms, their foundations were built of local stone (limestone in Hotnica and black whin-stone near Pavlikeni and Butovo) and the upper part was a rickety wooden construction or wattle, plastered with clay. The roof was made of arched tegulae and in places special ventilation facilities had been provided, i. e. tegulae with an opening and arched upper part.[10]

The detached workshop discovered near Hotnica offers the best idea of the inner layout of a potter's workshop. This is a comparatively big building, 17.9 m×8.30 m, consisting of three rooms arranged in a chain (Tables 2 and 3). The largest room measured 7.40×6.90 m, and the two side rooms were almost identical: 3.65×6.90 m and 4.25×6.90 m, respectively (Table II 2, 3). The earthenware was moulded in the East room and then arranged on wooden shelves fixed on its northern wall. The final processing of the clay was done in the Middle room, most probably on a wooden table. Iron nails were found in the northwestern corner of this room, as well as a large portion of the already processed clay. The firing of the ceramic products was done outside the workshop, but sometimes the kiln built in the room was used (Table II, 5). A kiln built inside the workshop was nothing exceptional: examples in this respect could be given from both the Hellenistic and the Roman era in particular.[11] Unusual here is that the kiln was in the vicinity of the place where the clay had been processed and then left to age, which is contrary to the main requirement for constant temperature. It is obvious that this kiln was seldom used: under hard meteorological conditions, when it was necessary to maintain a higher temperature, required, above all, for speeding up the drying process. The earthenware was arranged on wooden shelves fixed on the eastern wall of the same room. The workshop was obviously used not only in summer, but also during the colder months of autumn and spring.[12]

The third room was also used for drying, as well as for storing part of the finished products. The presence of a fireplace in the room gives grounds to assert that this process continued during the cold spring and autumn days as well.

Another independent potter's workshop was also found in the western part of the architectural complex in Pavlikeni. It consisted of two small rooms (Table V, 4).

2. Workshops in the Potters' Lodgings

The explorations carried out on a large scale near Pavlikeni and Butovo discovered large buildings of a sophisticated layout, which had been designed to be used by one family as lodgings, as well as for their domestic activities, which also included a workshop. The two buildings in the western part of the ceramic centre near Pavlikeni and the big architectural complex on the square in Butovo, which have been explored, are of the type described (Tables V, 3 and VIII, 3).

The buildings in Pavlikeni repeat the layout of a type of buildings very widespread in this ceramic centre, consisting of one central room, used as a lodging, around which the other rooms were grouped. There was a large anteroom, supported by columns, which led to the other rooms. The working platform of a two-chamber kiln erected outside the building was disovered in the southeastern corner of the first building (Table V, 3). The two eastern rooms, located in front of the anteroom with the kiln, were used as potter's workshops.

The two rooms in the southwestern part of the second building were used as potter's workshops. The kilns of this workshop were also outside the building.

Potter's workshops incorporated in the potters' lodgings were also discovered during the archaeological excavations in Butovo. However, the particular conditions for work in a built-up area prevented a more detailed exploration.

II. THE KILNS

The construction of the first pottery kilns is connected with the development and improvement of ceramic production and the firm establishment of this craft. Originally earthenware firing was done on an open hearth. The inevitable temperature fluctuations with this primitive mode resulted in the irregular and misfired sides of the earthenware. This compelled the potters to develop new methods of ceramic production firing. They started to dig the fireplace deeper into the ground. Later, the earthenware arranged in a chamber dug into the ground was covered with branches, leaves and earth, thus achieving slow baking and slow cooling. The minimum temperature required for the firing (between 450 and 600° C) was thus reached in the covered fireplace, which resulted in irretrievable loss of water contained in the clay. The earthenware remained porous, slightly clinking and the uneven temperature caused a lot of products to be discarded.[13] Gradually, the closed one-chamber kiln came into being. It preserved heat better than the open fireplace and it allowed regulation of the burning. As a result, higher temperatures were reached, causing a final shrinkage in the clay and reduced porosity.

The first one-chamber pottery kilns were dug into the solid ground and did not differ from the ovens for baking bread. Ceramic production in these kilns was arranged along the wall and the fire was lit in the middle. For baking bread it is enough to fire the oven only once when there is sufficient combustible, but the firing of earthenware in the one-chamber pottery kilns required the thermal conditions to be maintained for a much longer time and

very often the earthenware was damaged when coming into contact with the combustibles. This was the reason why new means were sought to avoid direct contact between fire and the earthenware to be fired, and at the same time to keep the action of hot gases for as long as possible. For this purpose, the one-chamber kiln was partitioned by a low wall, thus forming the two-chamber horizontal kiln.[14]

Horizontal kilns turned out to be insufficiently effective, because of the incomplete utilization of the thermal effect of hot gases, rising quickly above the hearth floor, without affecting evenly and completely the products to be fired. This was not a decisive factor for the ordinary earthenware used in everyday life, for which a temperature of 800° C proved to be sufficiently high. The refinement of ceramic production, which required firing at a higher temperature, necessitated some improvement of the pottery kilns. This was achieved by the two-chamber kiln, arranged in tiers, the lower chamber of which was turned into a fireplace and the upper one into a place for arranging and firing of the raw production.[15]

In the pottery kiln, arranged in tiers, a favourable vertical draught was secured for the gases passing directly through the perforated grate into the upper chamber. However, certain difficulties appeared. The direct heating of the upper chamber did not allow control of the gradual and even warming of the earthenware, which affected its quality. Gradually, practice showed that the effect of the hot gas was greater if active fire was moved away from the lower chamber into an additional device — the so-called channel or *praefurnium* of the kiln.[16] This was the place where hot gases mixed and were enriched with oxygen in the lower chamber, before passing into the second chamber.

The earlist two-chamber kilns inherited their round shape from their predecessors, the one-chamber kilns. In fact, the round two-chamber kiln turned out to be most reliable against thermal fluctuations and showed least construction defects.The upper chamber had the same oval shape as the lower chamber; usually it had a vaulted ceiling and a vent for the smoke to come out. The vent in the small kilns was used both to put in and to take out the fired vessels, while a special hole was used for this purpose in the bigger kilns, plastered with clay during the process of firing.[17]

The partition or the grate played an important role in the two-chamber kiln. It had to be as thin and as perforated as possible, so that hot gases could pass quickly and freely from the lower into the upper chamber. At the same time it had to be strong enough in order to bear the weight of the ceramic products. The strain upon the grate of the smaller kilns was not so crucial, but in kilns with bigger grates it was catastrophic.[18] To avoid this situation, various methods of consolidating the partition or the grate were tried in the course of the centuries-long existence of two-chamber kilns.

Depending on the methods used for consolidation of the grate, two-chamber pottery kilns are classified as follows:

1. Round, two-chamber kiln with no support;
2. Round or rectangular kiln with one partitioning wall;
3. Round or rectangular kiln with one pillar supporting the grate;
4. Rectangular kiln with two walls supporting the grate;
5. Rectangular kiln with two pillars supporting the grate;
6. Rectangular tunnel-shaped kiln with a sophisticated vaulted system.

Two-chamber kilns with no supporting pillar are of the smallest variety.

They were usually dug into solid ground. However, there are kilns built in unsolid ground, as is the case with a two-chamber kiln built in the ruins of the Middle palace in Tiryns (1400—1100 B. C.).[19] This type of kiln also existed during the late Roman era and the Middle Ages.[20]

In the round or rectangular kilns, with one wall supporting the grate, the wall divides the lower chamber into two parts and ends immediately before the channel (*praefurnium*). Both round and rectangular kilns were used as early as the 1st millennium B. C.[21] One comparatively well-preserved, round pottery kiln is known from Pylos (1300—1200 B. C.).[22] Consolidation of the grate by means of one supporting wall was widespread during the Roman era and especially in the West Roman production centres.[23]

It seems that the vertical partitioning wall obstructed the complete warm air circulation in the lower chamber. That is why, an equivalent construction element had to be sought, which could function as a partitioning wall, as well as act as the smallest possible barrier for the gases. The first improvement was to separate the partitioning wall from floor of the lower chamber, thus preserving its length. Kilns of this kind are known from the Κεραμείκον of Athens, dating from the 6th-5th century B. C.[24] Later on, the wall became shorter, finally reaching the dimensions of a round supporting pillar. Thus one came to the round or rectangular pottery kilns with one pillar supporting the grate — a type widespread already in Classical Greece,[25] in Hellenistic[26] and especially in Roman times.[27] Round pottery kilns with one supporting pillar were also depicted on the Corinthian tablets dating from the 6th century B. C.[28]

The supporting wall, transformed later into a supporting pillar, still had a limited constructive application — only with grates of smaller pottery kilns.

There was also another tendency in the rationalization of production, noticed even in Hellas, namely firing of greater amounts of earthenware with only one heating of the kiln. This could be noticed especially in the big ceramic centres during the Roman era. Thus the two-chamber rectangular ovens with two supporting walls came into existence. One could notice the same development in this case as in the ovens with one supporting pillar. The supporting walls were shortened and transformed into two 'tongues'. Later they were torn from the wall, thus forming two supporting pillars.[29]

The construction requirements, especially in the Roman era, necessitated the building of larger facilities for firing bricks and tiles, as well as for firing potter's production with greater reserves.[30] Most suitable for baking rough building ceramics turned out to be the big kilns with rectangular grate supported not by pillars but by a sophisticated vault system.

The kilns were usually built on a slightly slanting terrain or near the banks of dry valleys and small rivers, so that the fireplace remained outside and the two chambers were dug into the ground. Constant thermal conditions were thus achieved during firing. However, where the grounds were not suitable (e. g. with rocks or underground water), only the lower chamber was dug into the ground, the excavated earth was heaped onto the outer walls of the second chamber and a stone 'jacket' was added.[31]

More than one hundred pottery kilns have been discovered, explored and registered so far in the ceramic centres near Hotnica, Pavlikeni and Butovo. They functioned at different times: from the first decades of the 2nd century up to the beginning of the 4th century. Some of them were very well preserved, whilst others had been destroyed already in ancient times and turned into

garbage pits, and a third group was destroyed in the last years during deep ploughing near Hotnica and Pavlikeni, as well as during the water supply campaign and housing construction in Butovo.

The results from the long exploration of the terrain in this area, together with the abundance of comparative material from other ceramic centres as well, provided a possibility to follow the stages of construction, to specify the typology of pottery kilns on the territory of Nicopolis ad Istrum, as well as to discover the general features relating them to the kilns existing at the same time elsewhere and point out their local distinctive characteristics.

The general layout of the kilns discovered is the same. They consist of two chambers arranged in tiers, like some other kilns known from the present-day Bulgarian lands. The warm air came from the fireplace and through a covered duct it reached the lower chamber. Then, through the perforations of the partitioning wall or the grate, it passed into the upper chamber, where raw ceramic products were arranged to be fired (Table X, 1).

1. CONSTRUCTION

The choice of a suitable place is a point of great importance in the construction of pottery kilns. The masters of the past chose slightly slanting terrains, dry valleys and solid ground with deep underground water. Ceramic requirements for fire precautions were also observed.[32] Ceramic production had to be fired as far as possible from farm buildings, where combustible materials were stored. That is why the potters' quarters were located in the outskirts of the ancient settlements.[33] However, these requirements were not always strictly observed, because the potters themselves were those who usually adapted themselves to the concrete conditions. Very often kilns have been discovered, built in unsolid ground or in the immediate vicinity of some farm or residential buildings. What is more, there are kilns built inside the workshops in the ceramic centre near Hotnica and Pavlikeni (Tables II, 3 and V, 3).

According to the way of construction, kilns are classified into:

a) kilns dug into the ground;
b) kilns half-dug into the ground.

a. Kilns Dug into the Ground

Soil quality was of decisive importance in the construction of kilns dug into the ground. The potters used the same method when there was solid clay soil. However, if the terrain was not solid, they used various technical means and materials.

When a kiln had to be built into solid ground, two pits had to be dug out first, up to 2 m deep — one for the future working platform, and the other for the future kiln. The first pit was deeper and wider, and its walls were more steeply slanting. The second one started as a small round hole, widening downwards and forming an overarched space, designed for the lower and upper chamber of the kiln. Before that, however, the part between the two pits, which had not been dug up, was bored in order to form the overarched kiln duct.

The next step was the shaping of the small encircling wall and the supporting pillar upon which the grate of the kiln had to be placed. The supporting pillar was wider in its base, growing narrower upwards. After all this the grate or the partitioning wall was constructed. Smooth, pointed wooden

stakes were supplied for that purpose in advance, and fixed into concentric circles upon the bottom of the round pit. Meanwhile, the space between the fixed stakes was filled with bushes and leaves, so that the filling reached the height of the small encircling wall and the supporting pillar. This was done by the potters from Hotnica, while for the construction of the kilns near Pavlikeni radially arranged wooden stakes covered with straw were used instead of bushes. Well kneaded clay was applied in thin layers upon this 'framework'. The potters usually used the same clay from which they made earthenware, adding straw, burnt earth and potsherds. The straw acted as reinforcement before baking and prevented the clay from cracking, making the structure lighter to a certain extent.[34] Burnt earth and potsherds made the clay less oily and at the same time more fireproof.

Clay putty, 2—4 cm thick, was also applied on the side walls of the already formed upper chamber of the kiln. At the same time the fireplace and the duct were constructed. The fireplace was trough-like and the duct narrow in the beginning and wider inwards.

b. Kilns Half-Dug into the Ground

The difference between kilns dug and half-dug into the ground is that in the latter part of the upper chamber was above ground. The potters usually aimed at digging them as deep into the ground as possible in order to aviod sharp temperature fluctuations. The only reason for construction of kilns half-dug into the ground should be sought in the particular characteristics of the terrain (underground water, unsolid ground, etc.). In the construction of the kilns half-dug into the ground, they proceeded in the already described fashion, with some differences in making the lower chamber and especially the duct, the encircling wall, the supporting pillar and the grate.

The duct was made of pieces of tegulae and clay, heaped up haphazardly upon the wooden framework prepared in advance or of rough limestone tiles. The small encircling wall and the supporting pillar were constructed of waste materials. In some of the kilns the walls of the lower chamber were consolidated by means of big sun-dried bricks,[35] limestone tiles or imbrices set up straight and plastered on the outside with a thick coat of clay (Table VI, 6).

Water pipes were used as constructive elements for the supporting pillars of hypocaust pipes, filled up on the inside and plastered on the outside with clay.

There is also a difference in the construction of the grate. Imbrices were radially arranged on the previously prepared framework so that the narrow side could lie upon the supporting pillar and the wider one — on the edge of the small encircling wall. In some of the kilns, water pipes with small diameter were used instead of imbrices. The vents for the smoke were shaped between 'the ribs' constructed in that way and serving as frame of the grate. Layers of clay, mixed with small pieces of tegulae, were applied on the 'ribs'. The grate is thicker towards the periphery and very thin near the supporting pillar (25—12 cm). The grates of most of the pottery kilns in the ceramic centre near Pavlikeni were constructed in the same manner.

In the kilns half-dug into the ground, the construction of the second upper chamber took place after the grate had been finished. For this purpose, a framework of thin poles was prepared, plastered subsequently with a thick layer of clay. The second chamber was covered on the outside with turf and earth for better isolation. The height of the upper chamber of both types of kilns did not exceed 1 m.

c. The Working Platform

The working platform was in front of the heart of the oven.It was dug deep into the ground in the kilns dug into the ground and resembled in shape an irregular oval with steep walls. The walls of some working platforms were consolidated by means of shapeless calcareous stones.

The kilns half-dug into the ground have smaller working platforms, slightly dug into the ground. The surface of any working platform does not exceed 5 m^2. This was space enough for the potter to work freely as well as to store part of the combustibles there.

One working platform was usually used for several pottery kilns, arranged in a circle around it. One is impressed by the fact that the pottery kilns arranged around one common working platform have different measurements. The bigger kilns were designed for baking large-sized earthenware and the smaller ones for firing fine earthenware. For instance, a common working platform was used by three kilns in Hotnica, differing in size, as is the case with the majority of the kilns from Butovo and Pavlikeni. Grouped in that way, the kilns were filled with various ceramic products and at the same time serviced by fewer people. This trend for more rational use of labour was also widespread in the ceramic centres discovered in the West Roman provinces.[36] Similar cases have been noted during exploration of the ancient ceramic production in the towns of the Northern Black Sea area.

d. Protective Covers

Pottery ovens were vulnerable not only to fire but also to the moisture in the atmosphere. This compelled potters to search for ways to preserve them. Nearly all kilns discovered on the territory of Nicopolis ad Istrum were protected by light wooden structures, plastered with clay and covered with arched tegulae.

The protective shelters were high enough, so as to allow free work underneath. They were also sufficiently far off from the flames and the heat.

Large amounts of whole and fragmented tegulae and iron nails have been found on many working platforms. This gives grounds to consider that these shelters were used not only for the kilns, but they covered their working platforms as well.

2. Typology

Depending on the grate form and its support, the kilns from Hotnica, Pavlikeni and Butovo are classified in two groups: kilns with a round grate and kilns with a rectangular grate.

a) Kilns with a Round Grate

The kilns of that group are subdivided into:

Ia. Kilns with a round grate supported by one pillar (Table X, 2a).

This type of kilns has been found only in the ceramic centres near Hotnica and Pavlikeni. The kiln grate is round or pear-shaped, most often slightly elongated towards the fireplace and supported by a tongue-shaped pillar. The latter is structurally connected with the rear wall of the lower chamber. In fact, it pertains to an improved variant of ancient kiln with a partitioning wall, which in our case does not partition the entire lower chamber, but reaches up to the middle of the kiln, thus ensuring better circulation of hot gases. We should mention as an example kiln No.6 in Hotnica whose grate diameter is 1.70 m.

This is one of the earliest kilns in that site. The lower chambers of two small kilns with tongue-shaped supporting pillars have been discovered in Pavlikeni. They probably belong to some fittings used for preparation of the additional materials in ceramic production.

Kilns similar to these are often to be found on the territory of Northern Bulgaria (Novae,[37] Pet Mogili, district of Šumen[38]), as well as to the south of the Balkan Mountains (Čatalka near Stara Zagora[39]). This type of kilns is seldom found outside the limits of present-day Bulgaria.[40] This gives grounds to consider them as a local variant of the pottery kilns with a round grate and a shortened partitioning.

IIb. Kilns with a round grate and supported by one pillar (Table X, 26)

These kilns are a further development of the type of pottery kilns with one tongue-shaped supporting pillar. The 'tongue' in them is divided from the rear wall of the lower chamber and turned into an elliptical or round supporting pillar, ensuring complete circulation of hot gases. This type of kiln is commonly discovered in the ceramic centres considered, and it is to be found either dug or half-dug into the ground. Their dimensions do not differ from those of the kilns with tongue-shaped supporting pillars, their diameter being between 0.83 and 1.90 m.

The kilns with one supporting pillar of the grate are the most common in all ancient ceramic centres on the territory of the Roman Empire. Kilns identical to these have been discovered in Novae,[41] Altimir,[42] Romula,[43] Olbia,[44] in Greece,[45] Gallia,[46] Germania, [47] etc.[48] Kilns of this type have also been depicted on the Corinthian tablets dating from the 6th century B. C.[49]

b) Kilns with a Rectangular Grate

The growth of ceramic production necessitated improvement of the facilities for earthenware firing. The aim of the potters apparently was to increase the efficiency of their production and to produce more and better-quality earthenware with fewer instruments and in less time. This was achieved by increasing the dimensions of the kilns. The rectangular shape of the grate turned out to be the most suitable here. In some of the kilns the grate corners are slightly rounded and in others they are almost rounded off, thus turning the rectangular grate into an ellipse.

Depending on the support of the grate, in this group of kilns one could distinguish:

IIIa. Kilns with a rectangular or elliptical grate with two tongue-shaped supporting pillars (Table X, 2C).

Only kiln №.7 in Hotnica belongs to this type. The same development is observed in this case as in the kilns of Ia, with one exception: the two supporting walls are shortened, and turned into two tongue-shaped supporting pillars, ensuring better circulation of hot gases (Table III, 1). Parallels to this type of kilns are known from the West Roman ceramic centres.[50]

IIIb. Kilns with a rectangular grate lying on two supporting pillars (Table X, 2d).

This type is a further development and improvement of the kilns with two tongue-shaped supporting pillars of the grate. They are found in the centres near Hotnica and in Butovo. There is only one example from Hotnica (kiln №.2, which is one of the latest on this site), while a considerable number of the kilns discovered in Butovo are precisely of that type. Their dimensions vary from 1.54×2.00 to 1.80×2.00 m. These kilns were used from the end of the 2nd

upto the beginning of the 4th century. The kilns from Olbia (type II) are completely analogous to them (dated to the lst century B. C. — lst century A. D.).[51]

IIIc. Kilns with a rectangular grate on a sophisticated vault system (Table X, 2e).

They belong to the receptacles designed for baking bricks and tiles, but sometimes they were also used for firing earthenware of larger size. The big rectangular grate of the kiln is supported by a sophisticated vault system, consisting of a main duct connected with lateral semi-arches. Kilns of this type are to be found often on the territory of Nicopolis ad Istrum — three in Pavlikeni, two in Bjala Čerkva and one in Butovo. The kilns in Bjala Čerkva and Pavlikeni were used for baking tegulae, while the kiln in Butovo was used only for baking earthenware of larger size. Grounds for such a hypothesis are provided by the great amount of discarded products — large vessels discovered both in the kiln and on the working platform. Similar examples are also known from other ceramic centres.[52]

The observations on the kilns from the ceramic centres in Hotnica, Pavlikeni and Butovo prove that most of them belong to the kilns with a round grate and one supporting pillar — the most widespread type during the Roman era. They are a further development of the kilns with a partitioning wall, shortened here in the form of one tongue-shaped supporting pillar. This type of kiln is typical of Thracia and Moesia Inferior (Čatalka, Novae and the village of Pet Mogili, district of Šumen).

The other type of kiln, also widespread in the three centres under consideration, is the kiln with a rectangular grate lying upon two supporting pillars. This type is not to be found in the West Roman provinces. The only parallels for the time being are to be found in Olbia, dated about two centuries earlier than our finds. It could be assumed that this type of kiln emerged under the influence from Asia Minor, but the lack of any explored ceramic centres in the East Roman provinces makes this statement hypothetical.

The observations on building equipment and building materials used in the construction of the facilities for firing of ceramics, have revealed a great difference between the kilns from Hotnica, on the one hand, and those from Pavlikeni and Butovo, on the other. A marked primitivism is to be noticed in Hotnica, both in the construction of the kilns and in the choice of building materials. For instance, calcareous stone was used on a mass scale. It is most abundant in this region, but not at all suitable for construction of equipment exposed to the direct influence of fire. This is the only plausible explanation for the great number of pottery kilns near Hotnica, which had been damaged already at the time of the firing and were subsequently turned into garbage pits. At the same time, the majority of the kilns in Pavlikeni had solid grates, constructed of radially arranged imbrices and water pipes.

Towards the end of the 2nd century a certain improvement of the pottery kilns is noticed in the ceramic centre near Hotnica. Two kilns were built then, completely imitating those from Pavlikeni and Butovo.

III. BASIC MATERIALS FOR PRODUCTION

Clay, water and combustibles are the basic raw materials in ceramic production. Good-quality clay, suitable for earthenware moulding, as well as power sources used in firing of ceramic production, are more rarely found in

nature, unlike water sources which exist almost everywhere. That is why, in order to build their workshops the potters had made their way to places located near clay deposits.

1. Clay

The ceramic centres explored near Hotnica, Pavlikeni and Butovo are situated in areas rich in deposits of good-quality clay. Clay has been formed by gradual weathering and disintegration of rock material containing felspar. The turning of felspar rocks into clay is mainly due to mechanical and chemical factors. If clay remains in the place where it has been formed, it is called primary clay. However, clay had usually been washed away by water or blown by winds and precipitated for the second time at some other places. In this case it is called secondary or deposited (precipitated) clay.[53]

In Hotnica, the clay is in the immediate vicinity of the ceramic centre. The potters near Pavlikeni used the deposited clay found on both sides of the Vărbovsko Dere ravine. Four clay-pits, exploited and then turned into garbage pits already in ancient times, have been discovered here so far. One of the pits lies on the southwestern site, the other — between the pottery kilns and the western site, a third pit was found in the inner courtyard of the villa and a fourth one lies east of the brick-kilns. The raw material for the production of earthenware in Butovo was dug out near the very workshops, where rich deposits of secondary clay are still to be found.

Clay was usually dug in autumn, using spades and hoes for the purpose. An iron casing of a wooden spade was found near Vărbovsko Dere in Pavlikeni, an iron hoe was also found in Butovo (Table IX, 1 and Table XIII, 1). Natural grinding of the clay was achieved by repeated freezing and de-freezing, which also led to its increased plasticity.

Apart from useful soluble minerals, natural clay very often contains rock particles of larger grain, calcium carbonate, iron pyrites, organic substances, etc., which affect mostly fine ceramics. Especially harmful are the limestone particles, which after firing of the earthenware, turn into quicklime. It is highly hygroscopic and causes peeling, cracking and in greater amounts even complete destruction of the ceramic products. All this forced the potters to seek some new ways of removing the harmful particles. The most effective way to purify clay turned out to be to rinse it and to deposit it in special basins.[54] The basins, being at least three, were built in succession on slightly slanting ground in the vicinity of running water, which had been deviated by gravitation so that it could flow into them. The clay was transferred from the pit to the first basin, where it was soaked to its complete mechanical decomposition. Afterwards, the easily mobile turbid liquid entered the second basin, where the heavy clay particles fell to the bottom. Only fine clay suspension was allowed to pass into the third basin, where it was left for a long time to drain, the surplus water evaporated or was sucked into the soil. Special sifters, placed between the second and the third basin, were used for removing lighter organic additives like roots, dry leaves, etc., which had not settled in the second basin. Fragments of clay sifters were found near the Vărbovsko Dere ravine, where these basins for clay rinsing had probably been situated (Table XI, 91).

The clay prepared by freezing and rinsing was not yet sufficiently good to work with, that is why it was subjected to additional processing in the potter's workshop. Regular distribution of the solid particles and the water was achieved here by careful and continued kneading. This was the way to obtain 'the dough' — to use a contemporary term. Dough processing continued to the moment

when it could easily be moulded without sticking to the hands.[55] Sometimes the potter deliberately added sand or crushed brick in order to decrease the plasticity of clay. Similar additives functioned as a reinforcement of the vessel, making easier the process of its firing. This technology was generally applied in ordinary greyish-black earthenware and in the big vessels (amphorae, dolia, etc.).

2. Water Sources

The potters from Hotnica used the never-drying Karst spring Kaja Bunar and the waters of the Bohot River; the demand for water in the ceramic centres near Pavlikeni and Butovo were satisfied by the Vărbovsko Dere ravine and the Lomija River.

In Pavlikeni and Butovo more water, necessary for the ceramic production, was supplied from special wells dug up in the neighbourhood of the claypits.[56] This was the usual practice in most ceramic centres during Roman times (Aquincum[57], Weissenau[58], etc.).

In some potter's workshops discovered in Butovo water was supplied through ducts constructed of tegulae and bricks.

3. Combustibles

Timber was the only combustible used for firing earthenware in the ceramic centres explored so far. This is evidenced by the great amount of coals discovered in the very pottery kilns. Some coals are from hard tree species like hornbeam and oak, as well as trees with softer wood (linden and willow). In Bulgaria these trees grow in the low-mountain regions at a height of up to 700 m. Vast forests of oak, hornbeam, ash and linden have been preserved up to the present in the vicinity of Hotnica and Vărbovka. Timber for firing the ceramic production was sometimes supplied from these forests.

However, similar favourable conditions were not always available in the other ceramic centres. Most ofthen timber had been missing, which forced the potters to supply it from more remote places. For instance, the timber for the potter's workshops in Graufesenque (Southern Gallia) was transported from the forests of the Central French massif down the Tarn River.[59] The use of lower-calory heat sources was not excluded, e. g. vine-twigs and plant stems, which could develop temperature of up to 800—900° C.[60]

IV. SPECIALIZATION OF PRODUCTION

Great variety on the production list of each ceramic centre was established during the long study of the ceramic material found on the territory of Nicopolis ad Istrum. The tendency to a relative differentiation and specialization of production has been established through detailed examination of the finds from each potter's workshop. This tendecy is, above all, expressed in the production of the two basic groups of ceramics: thin-walled and greyish-black earthenware used in everyday life. The former was mainly produced near Pavlikeni and Butovo, while the latter had remained the basic production of the centre near Hotnica.

Various earthenware, lamps, trays, terracotta and different objects related to construction (water-pipes, tubulae, etc.) were made of fine clay. This varied production was manufactured mainly in the specialized potter's workshops. For instance, in the workshops situated in the eastern and southwestern section of the ceramic centre near Pavlikeni, only fine earthenware was turned on a

potter's wheel (the majority of them being decorated by the Barbotine technique). Meanwhile, potter's workshops were discovered in the western part of the same site, which had used the potter's wheel for making only ordinary vessels of fine clay with no decoration — jugs, amphorae, pots, etc.

The specialization in ceramic production is best noticed in the Butovo ceramic centre, where specialized workshops producing trays, lamps, terracotta and ordinary fine ceramics have been discovered (workshops for trays have been discovered east of the square, workshops for lamps — near the road to Pavlikeni). There were also separate workshops for the production of clay moulds. This is confirmed by the fact that all lamps, terracotta and trays discovered in the different workshops are identical, as if they have been made in the same moulds. The potter's tools, manufactured in the specialized centre by qualified masters, satisfied not only the needs of the local workshops but they were also exported far beyond the borders of these provinces.

All the same, the differentiation of production in the explored ceramic centres is not so clearly discernible as in the big terra sigillata workshops in the West Roman production centres. That is why in most workshops producing mainly undecorated fine ceramic vessels, a few moulds used by the craftsmen for making clay lamps, children's toys, appliquéed ceramics, etc., have been found in limited quantities.

V. THE PRODUCERS

The basic and most difficult operations in ceramic production were performed by the master-potter and his assistants. However, there are many moments in the sophisticated technological process, where participation of more people was required. Less qualified workers were usually employed for the primary processing of clay (digging and primary rinsing), as well as for applying the glaze on the earthenware or transferring the vessels to the kiln for firing.

The participation of many people in the production is testified by the presence of different human fingerprints on the surface of the fine earthenware (Table XIV, 1). It has been established from the dactyloscopic investigations that together with rough men's fingerprints on the ceramic material from Hotnica, Pavlikeni and Butovo, small fingerprints are also to be found, probably women's or children's. This is entirely explicable by the fact that most of the potter's workshops are situated in the courtyards of private owners, which include their lodgings as well. The observations made during the archaeological excavations show that some members of the family were directly engaged in pottery-making and the others in farm work, but at certain times they all had helped in the production of earthenware. Women and children also participated in the making of clay lamps and children's toys — products on which their fingerprints are most numerous.

Considering the archaeological finds discovered in the first place during the complex exploration of the ceramic centre near Pavlikeni, one comes to the conclusion that the makers of this various ceramic production were owners of one-family houses, where objects used in everyday life, as well as expensive metal works like bronze statuettes, lamps and ornaments, were found. It is obvious that the inhabitants were not slaves, but free people with their own initiative, standing higher than slaves in the social scale of the slave-owning society.

VI. MODELLING

The various ceramic production from the centres near Hotnica, Pavlikeni and Butovo widely and rationally illustrates the use of the potter's wheel not only for earthenware modelling, but also for making the handles of smaller vessels, single moulds for earthenware, models for lamps and various objects, related to construction and potter's handicraft.

A completely preserved potter's wheel from Roman times had not yet been discovered; only separate parts have been discovered in Arretium[61], Lesoux[62], and other West-Roman ceramic centres.[63] Some scholars have succeeded in restoring the principal structure of the potter's wheel from this era[64], taking into consideration the archaeological finds mentioned above and compared to the images depicted on the Corinthian tablets from 6th century B. C.[65], as well as some contemporary etnographic parallels. The wheel apparently consisted of a vertical wooden shaft ending in its lower part with an iron point, fitting into a bed which had previously been dug into a quartz stone fixed into the ground. Similar stones bearing traces of the rotating movement of the shaft have been discovered in many ceramic centres.[66]

Two discs of baked clay were fixed to both ends of the wooden shaft. The lower one, being bigger and solid, served as a flywheel providing the rotating movement, while the upper disc served directly for moulding. The upper disc was usually turned on a potter's wheel. Fragments of similar discs have been discovered in Pavlikeni, reaching up to 20 cm in diameter, with an opening in the centre for the upper end of the wooden shaft.

Remains of a potter's wheel have been found in Hotnica in the very workshop: the wheel was placed in the southern part on an elliptical platform of rammed pebbles so as to get more sunlight. Iron points, probably of the vertical wooden shaft of a potter's wheel, were also found in the potter's workshops discovered in the western part of the site in Pavlikeni.

Discs from a potter's wheel, either of clay or marble, have been found in Greece and in the West Roman provinces.[67] There had been a tendency for the lower and upper discs to become heavier in order to ensure constant and continued rotation, which would not be affected by the irregular pressure applied during the modelling.

The process of modelling did not differ considerably from modelling in any contemporary potter's workshop. The potter set the lower disc in motion with his foot, meanwhile putting his two thumbs into the core of the clay ball, and started raising the walls of the vessel, gradually making them thinner and giving them the required shape.

A characteristic feature of the ceramics is Butovo in the thinness of the walls of the vessels, achieved during the first modelling on the potter's wheel. This is not to be noticed with the ceramic production of Pavlikeni. On the contrary, coarser and thick-walled earthenware is typical of this centre. This is probably a result of the individual abilities of the craftsmen from Pavlikeni, in contrast to those from Butovo, who had been masters of pottery handicraft. Certainly, this statement should not be taken at its absolute value, because there are some traces of the skill of good masters in Pavlikeni as well, but they never reached the standards achieved in Butovo.

VII. ADDITIONAL PROCESSING

Nearly all fine earthenware, as well as a small part of the greyish-black ceramics used in everyday life, had been subjected to additional processing — bottom shaping, scraping and clipping of the walls, additional sticking of the neck in some of the vessels, applying of additional ornaments and retouching the defects.

Before that, however, the earthenware was left to dry and it was carefully watched for the moisture not to evaporate completely, i. e. the ceramic had to be not overdried. After overdrying, any additional operation on the ceramic products became impossible.[68]

a) Bottom Shaping

After modelling, the clay vessel was removed from the potter's wheel by means of a thin thread, leaving concentric, arch-shaped, drawn-out circles upon the vessel. The thread traces are usually best preserved on the bottom of the earthenware and the tops of the lids of greyish-black ceramics. The reason for this is the presence of large-sized sand grains in the clay, which made difficult the further processing of this type of ceramics. This is not the case with fine earthenware, where the bottom had been additionally modelled by scraping and sticking of the pre-shaped feet.

Shaping was done in the following order: the craftsman put the vessel on the potter's wheel upside down, fixing it with clay (Table XV, 4, 8). Afterwards he started shaping the flat bottom with his fingers, forming the ring-shaped foot and the centre hollow. A relief spot was formed here during the modelling of the still wet clay, looking like a cone-shaped growth on the inside of the vessel.

Another method (scraping of the flat bottom) was used for shaping of the base ring of most cups produced in the ceramic centres near Hotnica, Pavlikeni and Butovo. For the purpose the ancient cpaftsmen used universal implements (Table XIII, 2).

The earthenware with narrow mouths and tall necks (amhporae, jugs, etc.) was also sujected to additional processing. The articles were attached to the potter's wheel by clay bases, i. e. implements with a cone-shaped upper part, standing on a widening foot with a hole in its centre (Table XV, 7). The implements were fixed to the potter's wheel with clay and the vessel neck was placed on the cone-shaped part of the base (Table XV, 5, 8).

The vessel bottom was also modelled by sticking a high hollow cylindrical foot, previously turned on the potter's wheel. Clay censers were made in that way, and their production was mastered in the potter's workshops near Hotnica, Pavlikeni and Butovo (Table XVI).

b) Scrubbing and Clipping of the Walls of the Earthenware

A charasteristic feature of the earthenware from the three ceramic centres is the thinness of their walls. Thus, for example, the average thickness of the small earthenware is 2—3 mm, and in larger-sized earthenware 3—6 mm. This effect was achieved by the ancient craftsmen already while turning the vessel on the potter's wheel, but on small earthenware only; reduction of wall thickness of the big and shallow dishes and bowls was done additionally by scrubbing and clipping with special tools (Table XV, 1, 2, 3). In fact, this method is a continuation of bottom shaping in the technological cycle of ceramic production.

This operation had been done with sharp wooden and metal tools, the traces of which are preserved on the fine surface of the earthenware and especially in those cases when hard particles had come in front of the tool nib, leaving behind unevenly outlined furrows. Traces of the tool were also left by the additional scrubbing of the unevenly dried-up earthenware. Radial relief lines are usually observed in this case. Very often the thickness of some vessels was reduced by wall clipping by means of a sharp object. This method was used for the inner walls of the tall clay bases of censers and lamps, turned on a potter's wheel.

c) Additional Neck Sticking

Earthenware of quite large sizes, with tall and narrow necks, was produced near Hotnica, Pavlikeni and Butovo. The most significant feature observed during their study is the place on the inner side of the vessel where the body ends and the neck begins (Table XVII, 2). Quite a coarse wall thickening marks the place where the neck has been attached to the body. This clearly shows that this type of earthenware was made in two stages. The body and the neck were modelled separately. After slight drying of the two parts, the neck was stuck to the body on the slowly rotating potter's wheel (Table XVII, 1, 3, 4, 5).

What actually made the ancient potters resort to this method in making amphorae and jugs? According to the author, the first but not most significant reason was the large size of the earthenware for which more clay was required and the potters probably found it difficult to model it in one piece. However, the main reason for introducing this method should be sought in the fact that it had been difficult, even impossible, to retain the massive neck on the wide body whose walls were thin and still raw. All this forced the ancient craftsmen to model separately the body and the neck of this type of earthenware.

d) Making and Fixing of Clay Handles

A considerable part of the earthenware produced in the ceramic centres near Hotnica, Pavlikeni and Butovo have their handles additionally fixed. According to the way of making, handles are classified into handmade handles, handles turned on the potter's wheel or handles made in single moulds.

The flat, round or twisted handmade handles belong to the first type. One could presume that for the purpose the potter took quite a large piece of clay which he fixed firmly to the working table. Then he started drawing the handle with his left-hand fingers, supporting the movable end with his right-hand thumb. Depending on the pressure of the hand, two kinds of handles were obtained: flat handles with grooves or handles with a round cross-section (Table XVIII, 1).

The so-called twisted handles were shaped from the round one, but they are to be found comparatively more rarely. For the purpose the craftsmen used a grooved pattern. When run over the handle, it formed deep grooves, which turned into spirals when slightly twisted.

Single round handles are very rare. They are usually stuck in pairs. Stuck together with one twisted handle, they form the so-called triple handle. The latter was only used for large-sized earthenware. Separate fragments of these have been found in Hotnica, Pavlikeni and Butovo.

The handles were attached to the vessel in the following fashion: both ends of the handle being wet in advance in order to achieve better cohesion, one of them was stuck to the rim, the other to the body of the vessel. The craftsman pressed its lower end several times with his forefinger, leaving concave elliptical fingerprints (Table XVIII, 2, 3).

The horseshoe-shaped handles of jars and some wide shallow dishes were also handmade. They have semi-circular section and they were attached to the upper part of the vessel.

In his ambition to rationalize production, the ancient craftsman also used the potter's wheel for making clay handles. For that purpose he drew tall cylindrical vessel necks with deep flutes on the outside, which were cut out horizontally into narrow strips. The handles of all smaller vessels were made in that way. The same clay strips were also stuck to the deliberately thickened edge of some dishes, forming crimpled ribbon-like handles (Tables XVIII, 4, 9, XXXI, 37).

The third group includes handles made in single clay moulds. Here, the imitation of the metal vessels with relief ornaments is most clearly expressed. These handles are usually to be found on the shallow dishes and they are designed for decoration (Table XVIII, 15 and 16).

VIII. DECORATION

a) Incising with a Sharp Object

The incised line is the most widespread decoration upon fine ceramics. Usually, it encircles once or twice the upper part of the vessel. This was done already on the potter's wheel and it was the final stage of earthenware modelling.

Pointed wooden, bone or metal tools were used for this purpose. The concentric incised lines are most often to be found in combination with broken lines incised in the upper part of the vessels.

In the process of modelling the earthenware was decorated not only by means of some sharp tool, but with fingers as well, thereby obtaining wide and shallow parallel furrows. Vertical deep cuts were also made additionally by means of a sharp tool on some of the earthenware from Butovo, decorated with wide furrows. Concave spots, forming stylized grape clusters, most often in combination with other ornaments, were also carved on the wet vessel by means of a sharp tool (Table XIX, 1).

Earthenware decorated on the upper part by means of a comb are very often to be found. Decoration was done before taking down the vessel from the potter's wheel. A bone comb, used in the practice of pottery-making, has been found in Pavlikeni. It is made of an animal costal bone: small teeth, arranged at different intervals, are carved on the two edges of the comb (Table XIII, 2).

Additional decoration was also applied on the earthenware after taking it down from the potter's wheel. Small elliptical holes or wide furrows on the upper cylindrical part of the deep bowls were carved by means of special tools with a flat and rounded point. In other cases, stylized twigs were carved in combination with vertical lines all over the surface of the vessel. Vessels with such an ornament are often to be found in Hotnica and Pavlikeni. Small deep holes in combination with other ornaments — concentric rings and stamped rosettes — were used for making cylindrical cups in Pavlikeni and Butovo (Table XIX, 6). This type of decoration is an imitation of glass vessels.

The insised decoration is an essential feature of the fine earthenware products from Hotnica and Pavlikeni, and is rarely to be found on the products from the ceramic centre in Butovo. Although similar decoration could also be found on kitchen earthenware, it consists only of simple incised lines on the upper part of the vessel.

Earthenware with incised decoration is to be found in many ancient sites in Bulgaria.[69] It is one of the most widespread methods of decoration, used in all potter's workshops during the Roman era.[70]

b) Incising with a Cogwheel

The decoration obtained by means of a cogwheel is one of the easiest techniques and it was most used in ancient times in all potter's workshops.[71] A small movable cogwheel mounted to a wooden or metal handle had only to touch the still wet rotating vessel in order to produce stripes of small short lines arranged crosswise. Small cogwheels have been discovered in a number of West Roman ceramic centres. They were used for decorating both fine ceramics and moulds in which terra sigillata was made.[72] The small cross-line is most often narrow and sharply cut off, but there are also triangular segments or small concave rectangular holes.

In our ceramic workshops this type of decoration is to be found as single or double encircling line on the bottom of the shallow dishes. The whole upper cylindrical part of the deep bowls was decorated by means of a cogwheel. The whole inside of some small semispherical bowls from Butovo are thus decorated (Table XX, 2). Single or double stripes, drawn with a cogwheel, are to be found on the upper part of the earthen jugs and amphorae from Hotnica, Pavlikeni and Butovo. The cogwheel supplemented the relief decoration of the clay censers (Table XVIII, 6).

Usually only fine earthenware was decorated with a cogwheel, but under its influence this method was also used for decorating some vessels of greyish-black ceramics used in everyday life. For example, deep dishes used in religious rites, the bottoms of which are decorated with spirally arranged stripes, were executed in this technique (Table XLIV, 7).[73]

c) Stamping

The stamping of earthenware made on the potter's wheel by means of special seals was a widespraed technique during the Roman era. Initially, earthenware stamping simply had a practical purpose intended to show the name of the owner of the workshop or the craftsman who had made a particular piece. This is a usual phenomenon in the early Roman ceramics from Pergamum or on the terra sigilata produced in the Western workshops.[74] The name was most often included in a symbol representing a rectangle with rounded edges, human footmark, *tabula ansata,* ring, etc. Later on, the original meaning of the seal was forgotten — the name disappeared and stamping attained a simply decorative character.[75]

This technique for additional decoration was also used in the ceramic centres near Hotnica, Pavlikeni and Butovo, where six clay seals were found (Table XXI, 3, 6). They are cylindrical in shape, their lower base being elongated and the upper one round. A human footmark, a stylized rosette or a rhomboid form are depicted on the lower base, and a stylized rosette on the upper one. Similar seals have also been discovered near Mihailovgrad.[76] Usually deep dishes were stamped. These were made in the first half of the 2nd century and they had a cylindrical rim curved outwards (Tables XXVI, 2, 3, 6;

XXVII, 1). They were stamped mainly with single or double human footmarks. The stamp is in the centre of the vessel. One or two concentric rings are additionally drawn around it by means of a cogwheel.

Stamping was applied not only to the bottom of the earthenware, but on the whole surface as well, at which human footmarks were combined with multipetal rosettes (Table XXI, 4). Additional decoration by stamping is also to be found on the bases for small lamps. This technique for earthenware decoration had a particularly wide application in the ceramic centres discovered so far on the territory of Nicopolis ad Istrum in the second half of the 2nd century.

d) Squirting (Barbotine Technique)

Shaping of relief ornaments by squirting of liquid clay on the still wet earthenware surface is a technique widely used in nearly all Roman workshops known so far and dating from the second half of the 2nd up to the middle of the 4th century.[77] Actually, it was used as early as the Hellenistic period when the potters skilfully combined squirting with other techniques.

During the second half of the 2nd century the so-called Barbotine technique was introduced to the ceramic centre near Pavlikeni and towards the beginning of the 3rd century the ceramic centre in Butovo also started using it. A rich collection of earthenware decorated with squirted relief ornaments was discovered, originating from these centres, as well as the very tools by means of which this technique was applied. All this provides an opportunity to follow the development of squirted ornamentation and at the same time to clarify further some aspects of its technical realization.

Clay and special tools were required for squirting.[78] The ancient masters from Pavlikeni and Butovo used the same clay from which the rest of the ceramic production had been made, but it was subjected to additional processing by rinsing and filtering. Fine clay suspension was obtained in that way, devoid of any harmful organic or inorganic additives. It had to be neither too thick, nor too liquid, so that it could easily be squirted, and the relief ornament obtained had to remain intact on the earthenware.

Two narrow pipes were discovered in the centre near Pavlikeni through which squirting had been done (Table XIII, 2). One of them is made of a copper sheet, its one end thinner, the other one wider and curved outwards. The other narrow pipe is made of a femoral bone of a stork, its ends being cut off and polished by means of a sharp object. A funnel-shaped bag of textile or leather was fastened to one end of the pipe.

Squirting was done in the following way: the potter filled the bag with liquid clay, folded several times its open end and took it in his left hand. Then he levelled the bag at the slightly dired vessel prepared for decoration with his right hand, rhythmically pressing and releasing it, while turning slowly the potter's wheel. Slightly drawn relief ornaments were thus obtained.

The pipe was of great importance for the quality of the relief ornament. The potters from Pavlikeni used wider pipes; this is why the relief ornaments obtained there were larger than those found in Butovo, and moreover they had better outlined elements. The end of the narrow bone pipe being thinned out and obliquely cut off, it ended with a small point. In the process of squiring this point touched the clay drop and by dragging it left behind small concave stripes. The squirted ivy-leaves on the earthenware in Pavlikeni were formed in that way (Table XXII, 2).

Only plant ornaments were used for decoration in this technique in the centres near Pavlikeni and Butovo, the craftsmen from Pavlikeni preferred to squirt stylized ivy-leaves or small relief 'periwinkles' upon the inverted rim of the deep bowls and dishes and on the upper part of the cylindrical or greatly bulging cups (Table XXII, 1, 6).

The variety in Butovo is greater. The stylized ivy-leaves, rhythmically succeeding each other on the outside vertical edge of the deep bowls, are prevalent there. Quite often vine twigs with stylized grape clusters are to be found on the small cups, as well as successfully imitated pine cone scales on the entire outside surface of the vessel or arranged in chess-board order (Table XXII, 4). Squirted ornaments are also to be found on clay lids of fine thin-walled earthenware discovered near Pavlikeni and Butovo (Table XXIV, 4—6). Sophisticated combinations of various stylized ornamens, achieved in different techniques, are often seen on the same earthenware (Table XXII, 2, 4).

Squirting had been widely applied in Pavlikeni and Butovo. It represents a not always successful imitation of the embossed ornaments on the metal vessels. The reason for the failures can be sought, above all, in the clay, which cannot be processed as metal can be, and also in the individual skills and abilities of the craftsmen.

Earthenware with squirted ornaments, made in Pavlikeni and Butovo, are to be found on the territory of Nicopolis ad Istrum, as well as in Novae and to the north of the Danube.[79] This type of decoration on the earthenware is very seldom to be found in Southern Bulgaria. Separate fragments have been found in Serdica.[80]

e) Appliquéing

Appliquéing as a technique for applying an additional plastic decoration on the wheel-turned earthenware was widely used in Butovo and Pavlikeni and to a lesser extent in Hotnica. It was done by means of one or more single clay moulds. Clay moulds were found during the archaeological exploration in the ceramic centres, as well as in part of the discarded ceramic production manufactured in them; all this afforded an opportunity to follow and restore the whole production process of making appliquéed decoration.[81]

The moulds represent single negative prints, usually obtained either from metal, marble or ceramic objects with relief ornaments, or made from models produced by the potters themselves. The former are characterized by high artistic qualities and they are probably the work of skilled craftsmen, but they might have been imported as well. For example, there is a mould with the image of a Gorgon (Table XXIII, 4), found in Butovo, which differs considerably from the other moulds. It has been executed with greater diligence and on its exquisitely shaped handle there is a hole for stringing together with other moulds (Table XXIII, 5).

A clay mould was discovered in Pavlikeni with the image of Silenus, which has yielded the relief image appliquéed on a vessel made there (Table XXIII, 6). This image repeats an image of Silenus which was widespread as early as the Hellenistic era,[82] and it had most probably been copied from a metal vessel with a relief shape. Traces of the metal original of the models have distinctly been preserved on a single clay mould from Butovo with the image of a Gorgon (Table XXIII, 7). The greater part of the moulds found in Hotnica, Pavlikeni and Butovo were copies from models made by the craftsman himself, all of them bearing witnes of the work of someone unfamiliar with the canons of ancient art.

The copied mould was subjected to a number of additional processings before being judged to be suitable for work. Some of the elements of the relief ornaments were most often enhanced, retouched or additional decoration was applied.

The production of clay moulds for appliquéing was subjected to the same technological process as the rest of the earthenware, with one difference: glazing was not additionally applied on them. They were fired in the same pottery kilns and at the same temperature, which resulted in the same light brown colour.

Relief decoration was usually applied on the upper part of the vessel, the result being an uninterrupted ornamental band. This was achieved by the use of many moulds in the following way: the craftsman took with one hand the mould filled up with clay in advance and pressed it to the wall of the newly-made vessel. At the same time he had to support the inside of the vessel, leaving his fingerprints on the still wet clay. The same operation was repeated with the other moulds as well until the space designed for decoration was filled up. After some time, the well baked and dry clay moulds absorbed part of the water contained in the wet clay and came off very easily.

These moulds are the most striking illustration of what has been said so far. Two single moulds for a relief band on the upper part of the vessels originate from Butovo. A billy-goat was depicted on one of them and a satyr on the other. There is a part of a palmette in front of the two figures, which forms a whole relief ornament on the vessel when the two moulds are pressed to each other. A similar clay mould with the image of an animal (fawn) was also discovered in Hotnica. The image on the mould is rather disproportionate, the legs and the hooves being emphasized. It is odvious that the mould was made by an undistinguished craftsman who made his models himself.

A fragment of a small vessel from Butovo, decorated with a band of relief figures and rosettes, is also of interest. Only one figure and two rosettes were preserved during the baking process and the rest had come off, only their beds are to be seen (Table XXIII, 9).

The process of production of appliquéed ceramics is very clearly illustrated by a fragment of a vessel, discovered in an ancient settlement located between Butovo and the village of Vărbovka. The vessel produced most probably in Butovo, is made of fine clay on the potter's wheel. It belongs to one of the most common types in these ceramic centres: it has a lower conical and an upper cylindrical part, both ending with a widened and slightly turned outward rim (Table XXIV, 2). The relief image on the fragment from Butovo — Vărbovka is rather daubed as a result of a poor-quality mould in which it had been made, as well as thick, additionally applied glaze. Still it is not difficult to recognize in it the head of Dionysus — a rather frequently occurring image on the relief ceramics from Butovo.

Fragments of earthenware with relief decoration have also been discovered in Pavlikeni. The images of Dionysus and Heracles are prevalent among them. Plastic snakes, shaped by hand, have been additionally arranged round these moulded images (Table XXIV, 4).

A fragment of a vessel discovered on the territory of Hotnica is of particular interest. It was found in the ruins of an ancient settlement located 8 km northeast of the ceramic centre near Hotnica and is now kept in the local museum collection. It was wheel-turned, of fine purified clay, which had become light brown in colour after the firing. The fragment is coated with light brown glaze which has partially come off. A round medallion with a relief image

of Hercules is preserved on the fragment (Table XXIV, 7). A metal vessel with embossed decoration was probably used as a model for the mould, but lack of skill is apparent both in making the mould and appliquéing it on the vessel. This is more evident from the medallion which is rather distorted, with many of the details in the relief of the original daubed and worn off. All this would have made interpretation difficult if we did not have a votive tablet from Madara.[83] It is dated to the 2nd century and most probably originates from a local workshop. To the same century we could also date the medallion from Hotnica, which is undoubtedly from a vessel made here. Its artistic value is much higher compared to the relief from Madara. It is perfectly possible that a mould had been used for its making, copied from a metal vessel with embossed decoration — probably a work of some East Greek toreutikos.

Medallions on earthenware are also to be found in Pavlikeni and Butovo, depicting not only scenes from the mythology, but erotic scenes as well. We should mention as an example a clay mould for medallions discovered in Butovo (Table XXIV, 3). Here one could also notice the skill of the average craftsman, aimed at achieving a form and at the same time completely underestimating the quality of the relief image. It is evident that the mould from Butovo had also been copied from a clay image, the latter being too different from the original. A similar erotic scene is also depicted on a clay mould dating from the 2nd-3rd century and found in Gorsium near Balaton.[84]

The earthenware with relief decoration from Hotnica, Pavlikeni and Butovo represents a continuation of the Greek and Hellenistic traditions in this production in Roman times. They are an imitation of the expensive metal vessels and are designed for a wider circle of consumers.[85]

Earthenware with relief decoration was produced in the way described above in almost all ancient ceramic centres during the Hellenistic and the Roman epochs. As regards quantity, this type of ceramic objects represents an insignificant part of the whole earthenware production of a potter's workshop.[86] The techniques of making any additional plastic decoration on the wheel-turned earthenware proved to be rather unproductive, and this is probably why they were more reraly used.

Except for Hotnica, Pavlikeni and Butovo, production of earthenware with relief decoration in Bulgaria has been found so far only in Novae.[87] Such vessels were used only for religious purposes, which is confirmed by the relief images. Dionysian scenes or the feats of Hercules are usually depicted on the earthenware. The cult of these deities and especially of Dionysus had in ancient times been very widespread on the territory of Nicopolis ad Istrum.[88]

IX. DEFECTS BEFORE BAKING

Defects are to be found on some of the studied earthenware, which, according to the author, had occurred before the process of baking, but had been eliminated by hand by the potter himself. For instance, when a larger-sized solid particle came under the polishing tool during the process of scrubbing, it dragged, leaving behind a deep furrow. The potter had to eliminate this defect by smoothing the furrow down by means of some sharp tool. Cracks resulting from irregular drying of the ceramic production were filled up with clay. Naturally, covering up of this kind of defects is possible only when the earthenware was not yet completely dry (Table XXV, 2, 3).

Sometimes, when carrying the finished earthenware from the potter's wheel to the place of their primary drying, damages were caused to the rims, which the potter hid by fixing a handle to the bent place. Even faulty earthenware, unfit for use, was baked and offered on the markets as *'bon marché'* or as grave offerings. This is confirmed by the faulty earthenware discovered in a number of ancient necropolises, which had been produced in the ceramic centre in Butovo.

X. GLAZING AND WHITEWASHING

There was a certain decline with the Romans who in many respects accepted the cultural heritage of the Greeks in the production of ceramics. In contrast to the Greek earthenware, Roman ceramics were no longer essential in everyady life and became an imitation of the expensive metal and glass dinner sets. The so-called terra sigillata[89] had become typical of the Roman epoch, continuing the Hellenistic traditions in earthenware. Its most typical features are the red colour and the fine glossy glaze, the composition of which is not yet completely known.[90] During the Roman era all potter's workshops started to imitate the terra sigillata by using an additional coloured coating, which, however, never attained the quality of the shining glaze.[91]

The additional coloured coating on part of the earthenware produced in Hotnica, Pavlikeni and Butovo, was investigated by V. Načeva. In her opinion, the additional coating on the Roman earthenware has different names in the publications written so far: firniss, matt and glossy glaze. However, the name *glaze* gives the most correct definition. The author cited above attributes this name to the ordinary coloured clays melting at a temperature of 900—1250° C. These clays contain considerable quantities of quartziferous sand, felspars, iron oxides and calcium carbonate, which interact at the temperature mentioned above and form a glassy melt of auburn-reddish colour. However, V. Načeva accepts and uses the name *firniss* instead of *glaze*, because in many scientific publications, both in Bulgaria and abroad, the word *firniss* has established itself for denoting the coloured coating in the Greek and Roman ceramics. However, the author thinks that there is a difference between the Greek *firniss* and the coloured coating on the provincial Roman earthenware,[91a] which is rather a *glaze* coating. This term has already found confirmation in many scientific studies, especially on the ceramics from the workshops in Asia Minor. That is why, this term is also accepted here for denoting the coloured coating on the fine earthenware production.[92] It fulfilled two main functions: to give a beautiful and glossy appearance to the earthenware and at the same time to make it waterproof. Depending on the temperature reached during the process of baking, the colour of the glaze changed from light orange-reddish, brown-reddish to dark grey.

The glaze was achieved by repeated purifying of the clay. All organic residues, larger-sized rock particles, potassium carbonate, mica and, above all, the quartziferous sand, were removed during this process.[93]

The glaze was applied at the so-called 'leather hardness'(a term known in production), i. e. this is the moment when the vessel is not yet completely dried. Overdry, as well as wet products are not suitable for further processing. The coloured coating peals when the vessel is over-dried and in the case when it is still wet it leads to deformations; this is why, the Italic and Gallo-Roman earthenware, completely coated with firniss, are considerably thicker. In their case the coloured coating had been apllied twice.[94]

Techonology in the provincial ceramic centres was different. According to our observations, the vessel was taken by the foot and dipped into the glaze solution only once; the glaze thus covered the inside and to a certain extent the outer visible part of the vessel, after which it was upturned and placed on its dry foot. In this position, however, it often happened that part of the glaze which had not been absorbed in the vessel walls oozed down in thick wide stripes. The potter himself left his fingerprints on the article (Table XXV, 1).

Two aims were pursued by using this much faster method: to prevent the bending of the vessels during drying and their sticking during the baking process. All this was imposed by the demand for faster and more effective methods for creating cheaper and fine ceramic production which would be accessible for the populace.

The glaze in these ceramic centres is apparently very similar to the coloured coatings on the earthenware from the centres in Asia Minor and the Northern Black Sea coast, but it had not attained the fineness of the glaze from the workshops producing the terra sigillata in the West Roman ceramic centres.

A small part of the fine ceramic production, mainly funerary censers, was covered with lime.

XI. DRYING, STORAGE AND FIRING

After modelling and glazing, the ceramic production was left to dry. According to the author, this was done on wooden shelves, fixed on the walls of the potter's workshop. As it has already been pointed out, definite temperature with no sudden draughts was required for the normal course of the drying. After drying, the production was arranged in the pottery kilns.

The discarded earthenware found inside the potter's workshops in the explored centres testify to the way the ancient ceramic production was arranged and provide also first-hand information about this important moment in the production. Moreover, there is an abundance of comparative material from other ancient centres.[95] The images depicted on the Corinthian tablets also offer information (seven centuries older that our kilns). In addition to all this are the observations made by the author on the ethnographic material related to the production of earthenware.[96] All this leads to some well-founded conclusions about the arrangement of the raw ceramic production. It was done by several people. The earthenware was brought in through a special opening, used at the same time as a vent for the smoke. The earthenware had been arranged in advance around the kiln for firing, but the biggest vessels were placed on the grate first and the smaller ones were arranged in them, the tendency being to use every free space as rationally as possible, without covering the vents for the smoke on the grate. The potter even arranged some of the earthenware upside down, with the aim of using the whole space of the kiln and thus creating an impression of disorder, which is also to be observed on the image of one the Corinthian tablets.[97]

The kiln was not filled up. The remaining space of about 15—20 cm was packed with pieces of discarded fine ceramics, stored in a special place by the working platform. 'Auxiliary warehouses' of this kind have been discovered in Pavlikeni and Hotnica. They represent conical pits dug in the immediate vicinity of the working platform.

The fine, thin-walled and glazed earthenware was arranged one on top of the other, alternating the glazed and unglazed parts in order to avoid sticking of the vessels together (Table XXV, 4—7). Additional bases and stems were not

necessary for this process, in contrast to those used in the firing of the Italic terra sigillata.[98]

During the Roman epoch, firing of the ceramic production was done in two types of kilns: kilns with open flame passing, and radiating kilns.[99] The kilns belonging to the first type are the most widespread ones. They are to be found in a number of varieties, but all of them are based on the same principle, i. e. free passing of the flame and smoke from the hearth through perforations of the grate into the upper chamber, heating the arranged production and going out through the upper vent. The structure of this type of kilns is such that there is inevitable alternation of reducing and oxidizing medium in the chamber.

The kilns belonging to the second type are very rarely to be found and they were used only for firing fine terra sigillata. A characteristic feature of these is the complete isolation of the atmosphere in the chamber containing the raw production, the flames being led into special pipes.

The other kilns discovered in Bulgaria, as well as those in the ceramic centres near Hotnica, Pavlikeni and Butovo, are related to the first type (Table X, 1). Two types of ceramics were fired in them: fine earthenware and earthenware used in everyday life, which were fired separately in the same kilns, but under different conditions.

The temperature at which greyish-black ceramics were fired in the explored centres reached up to 800°, while 800—1100° C was required for the firing of the fine earthenware.

The clay from Pavlikeni is the most easily meltable of all the clays to be found in the vicinity of Hotnica, Pavlikeni or Butovo. The silicate analysis shows presence of a great percentage of $CaCO_3$ which explains the greater amount of discarded production in this ceramic centre.[100]

XII. DEFECTS DURING FIRING

Defects occurred as a result of disturbing the mode of firing of the ceramic production. This usually happened after the required temperature was exceeded and this resulted in partial or complete destruction of the production. The ceramic vessels arranged in the front part of the kiln in the immediate vicinity of the smoke vents, were usually subjected to the destructive effect of the fire.

A number of defects have been registered in the ceramic centres considered here, varying from the least significant ones, such as changing of the colour of the core and the glaze, to turning of the whole production into a shapeless glazed mass.

In the first case, the earthenware was sold, while in the second case the kiln, together with the ruined ceramic production, was abandoned and turned into a garbage pit. A kiln from Pavlikeni (Table VI, 1) is an indicative example, in which the grate, together with the glaze production, had collapsed into the lower chamber. Similar cases are also to be found in the centres near Hotnica and Butovo, as well as in a number of other ancient ceramic centres.

Defects during firing occurred when small particles of organic or inorganic origin got into the clay dough. The organic particles burnt completely, leaving shapeless pores, while the inorganic particles, being most often small calcareous formations, turned into quicklime. After the firing, it absorbed moisture from the atmosphere and turned into slaked lime, which had a catastrophic effect on the walls of the earthenware.

NOTES TO CHAPTER TWO

[1] BLÜMNER H., 1879; DECHELETTE J., 1904; CHENET G. et G. GAUDRON, 1955; FREMERSDORF Fr., 1922; KUZSINSZKY B., 1932; CUOMO di CARPIO N., 1971—72, vol. 11, 317—462; PICON M., 1973, 2

[2] LOESCHKE S., 1912, 44 ff.

[3] ГАЙДУКЕВИЧ В. Ф., 1934.

[4] FLOCA O., F. ŠTEFAN et L. MARGHITAN, 1970; BICHIR Gh., 1973; POPILIAN Gh., 1976; HENNING J., 1977, 181—206

[5] ZIOMECKI J., 1965

[6] ДИМИТРОВА Ал., 1961, 27—33

[7] ДЖОНОВА-МИТОВА Д., 1966,38—44

[8] СУЛТОВ Б., 19726, 21—29

[9] The technological analysis of the red firniss-glaze from the Roman centres in Butovo, Hotnica and Pavlikeni were made by Veselina NAČEVA — Unpublished materials.

[10] СУЛТОВ Б., 1969а, 16, обр. 8

[11] ZIOMECKI J., Op. cit., 21—22, rys. 15, 17; FORRER R., 1911, 24, Abb. 5

[12] COMFORT H., 1940, 1351

[13] CUOMO di CARPIO N., Op. cit., 371

[14] IBIDEM, 372, tav. I, 2

[15] IBIDEM, 372, tav. I, 3

[16] FREMERSDORF Fr., Op. cit., 18—19, Abb. 19

[17] IBIDEM, 23, Abb. 22—24

[18] According to the calculations made by the Italian expert on ancient kilns, N. CUOMO di CARPIO, the partitioning wall bore 200 kg/m ^{2} on the average; Cf. Op. cit., 376, note 13

[19] ZIOMECKI J., Op. cit., 28, rys. 23

[20] HENNING J., Op. cit., 193—194, Abb. 7

[21] МОВША Т., 1971, 228—234

[22] ZIOMECKI J., Op. cit., 25—26, rys. 20

[23] FREMERSDORF Fr., Op cit., Abb. 19; KUZSINSZKY B., Op. cit., fig. 43

[24] ZIOMECKI J., Op. cit., 15, rys. 4

[25] IBIDEM, 85

[26] IBIDEM, 19, rys. 9

[27] BLÜMNER H., Op. cit., 27, Abb. 4; POPILIAN Gh., Op. cit., 139 ff., Pl. LXXXII; ГАЙДУКЕВИЧ В. Ф., Op. cit., 25 сл.

[28] ZIOMECKI J., Op. cit., 57 ff., rys. 47, 48, 49

[29] IBIDEM, 25, rys. 18

[30] KUZSINSZKI B., Op. cit., 139

[31] КОЗУБ Ю. П., 1966, 22 сл.; kilns isolated with stone are found in the ancient centre for ceramics near Hotnica

[32] SITTL K., 1895, 177

[33] ГАЙДУКЕВИЧ В. Ф., Op. cit., 35

[34] The clay prepared for the building of the kilns seldom contains sand

[35] For the use of adobe, Cf. ГАЙДУКЕВИЧ В. Ф., 1934, 99 сл., with literature

[36] LAUTIER R.,

[37] Unpublished materials from the archaeological exploration of Novae

[38] АНТОНОВА В. и Г. АТАНАСОВ, 1979,

[39] The archaeological exploration of the Roman *villa* near Čatalka, Stara Zagora District came by two kilns with tongue-shaped supporting pillars. For this unpublished information, the author is obliged to his colleague, Senior Research Associate D. NIKOLOV

[40] JONSTON D. E., 1969, 75, fig. 2, 4, 7

[41] ДЖОНОВА-МИТОВА Д., 1966, 39, обр. 3г

[42] НИКОЛОВ Б., 1961, 51—52

[43] POPILIAN Gh., Op. cit., 140, Pl. LXXXII

[44] КОЗУБ Ю. П., 1966, 11 и 22—23, kilns 1—8, T. 1, 3, 6а, 7, 8а

[45] ZIOMECKI J., Op. cit., 19, rys. 9

[46] DUHAMEL P., 1974, 60—66, fig. 5

[47] SCHORR H., D. BAATZ, 1967, 33—34, fig. 1

[48] FLOCA O., F. STEFAN, L. MARGHITAN, Op. cit., 45, fig. 19

[49] ZIOMECKI J., Op. cit., 75, rys. 51

[50] DUHAMEL P., Op. cit., 63, fig. 6

[51] КОЗУБ Ю. П., Op. cit., с. 11 и 23 — kilns 9, 12, Т. 1, 1; 12

[52] Cf. note 30

[53] ПЕЕВ В., 1966, 23—24

[54] Author's personal observations in the ceramic centre in Rosier near Graufesenque

[55] ГЕРАСИМОВ Е. и С. БЪЧВАРОВ, 1977, 46—47

[56] In the ceramic centre near Pavlikeni two wells were found on the eastern site; some traces of wells were also found south of the square in Butovo

[57] KUZSINSZKY B., Op. cit.

[58] FREMSDORF Fr., Op cit., 15

[59] VERNHET A., 1979, 16

[60] ПЕЕВ В., Op. cit.; ГАЙДУКЕВИЧ В. Ф., Op. cit., 39—40

[61] ZIOMECKI J., Op. cit., 14

[62] DECHELETTE J., 1904, 338

[63] RIETH A., 1939, 70, Abb, №.1, 2

[64] WIHR R., Op. cit., 17 sqq., Abb. 4, 5; PICON M., Op. cit., 32 sqq, fig. a, b, c.

[65] ZIOMECKI J., Op. cit., 91—93, rys. 55—58

[66] CHENET G. et G. GAUDRON, Op. cit., 33, fig. 9—i, k, m. p.

[67] RICHTER G. M. A., 1956, 261, fig. 238

[68] НАЧЕВА В., Cf. note 9; also author's personal observations in Oreše

[69] АЛАДЖОВ Д., 1956, 95, обр. 15, 6 и Табл. А, III, 4, 1; БУЮКЛИЕВ Хр., 1962б, 54, обр. 14; БАЦОВА-КОСТОВА Е., 1970, 31, обр. 14а; МИКОВ В., 1932—34, 108—121, обр. 103а, 104а, 105а.

[70] GOSE E., 1950 (1975), 350, 351—352; BOJOVIĆ Dr., 1977, Т. XXVII, 264, Т. XXVIII, 265; POPILIAN Gh., Op. cit. Pl. LX, 740—742

[71] BLÜMNER H., Op. cit., 37 ff.

[72] COMFORT H., Op. cit., 1339

[73] One of the reasons for not applying this technique on earthenware is the rough fabric of the vessels, containing large sand grains.

[74] LUTZ M., 1977, Pl. 12; CHENET G. et G. GAUDRON, Op. cit., 103, fig. 46; LOESCHKE, Op. cit., Abb. 6

[75] Stamped inscriptions have never been found either in Hotnica or in the other two ceramic centres

[76] ДИМИТРОВА Ал., 1961, 31—32, фиг. 7, 8, 9

[77] COMFORT H., Op. cit., 1338

[78] FARNOUX B. C., 1963 256—261

[79] Unpublished materials from archaeological excavations; POPILIAN Gh., Op. cit., Pl. XVIII, 218—222, Pl. XIX, 223—233, Pl. XX, 234—240; ДИМИТРОВ Д. П. et al., 1964, 234, рис. 19.

[80] БАЛКАНСКА А., 1964, 137—149, обр. 7б

[81] СУЛТОВ Б., 1972б, 21—29

[82] A similar mould for appliquéing relief ornaments has been found in Çandarli.

[83] ФИЛОВ Б., 1911, 85 сл., обр. 1

[84] A similar tablet is kept in the Szekesfehervar Museum in Hungary — author's personal observations

[85] ЗАБЕЛИНА В. С., 1968, 119—124; БЛАВАТСКИЙ В. Д., 1953, 248 сл; КНИПОВИЧ Т. Н., 1955, 373 сл.

[86] LOESCHKE S., Op. cit., 385 ff.; COMFORT H., Op. cit., 1343; VERTET H., 1969, 93—133

[87] ДЖОНОВА-МИТОВА Д., 1970, 5—8, обр. 1, 2

[88] Two votive tablets from Suhindol are dedicated to Dionysus and Hercules depicted together — Cf. MIHAILOV G., 1958, Nos. 696—697; One votive tablet with Hercules fighting the Nemean lion has been found in Bjala Čerkva — IBIDEM, No. 700. Many monuments dedicated to Dionysus were found on the territory of Nicopolis ad Istrum. Dionysus and his *thias* are represented on ancient monuments from Gradina village (unpublished), from Pavlikeni — IBIDEM, No. 699, from Nicopolis ad Istrum — IBIDEM, No. 673, from Momina Krepost, near Veliko Tărnovo — IBIDEM, No. 721, as well as from Pčlište — IBIDEM, No. 723. Besides the inscription featuring the members of the Dionysian *thias* from Butovo — Cf. ГЕРОВ Б., 1950—51, inscription No. 397, there is also another unpublished inscription containing the name Pautalus, son of Cornitus — priest of Dionysus.

[89] ШЕТЦЕР Л., 1962, 12.

[90] PICON M., Op. cit., 37 sqq.

[91] НАЧЕВА В., 1981, 1—7

[92] КНИПОВИЧ Т. Н., 1955, 290 сл.

[93] НАЧЕВА В., Op. cit.

[94] IBIDEM.

[95] CHENET G. et G. GAUDRON, Op. cit., 104; KUZSINSZKY B., Op. cit., fig. 42; for the mode of arranging, Cf. ГАЙДУКЕВИЧ В. Ф., Op. cit., ц. 89 сл., with literature

[96] In the course of our work we had the opportunity to see the ceramic production as represented in its various stages at the Museum of Arts and Crafts in the town of Trojan, etc. and to profit from the skills of the older potters

[97] ZIOMECKI J., Op. cit., 75, rys. 51

[98] BROWN P. D. C., 1971, 95—96, Pl. XXIXb

[99] CHENET G. et G. GAUDRON, Op. cit., 84 sqq.; PICON M., Op. cit., 55 sqq.

[100] НАЧЕВА В., Op. cit.

CHAPTER THREE

CERAMIC PRODUCTION AND ITS CHRONOLOGICAL AND TYPOLOGICAL CHARACTERISTICS

The greater part of the production of the ceramic centres near Hotnica, Pavlikeni and Butovo is made of fine, well purified clay, while the other part — mainly the coarser kitchen earthenware — is made of clay with sand additives. On the basis of these features, the ceramic production is conventionally divided into two groups: fine thin-walled earthenware and greyish-black earthenware used in everyday life.

I. Fine Thin-Walled Earthenware

Fine earthenware represents the basic part of the production in Pavlikeni and Butovo and a insignificant part of the production in Hotnica. The earthenware was usually either wheel-made or modelled in special moulds and then coated with glaze. Fine earthenware was produced here as an imitation of the red-glaze ceramics which has been widespread during the Roman epoch.

This type of earthenware appeared as early as the mid-2nd century B. C. in Asia Minor and in the Eastern Mediterranean islands. Continuing the Hellenistic tradition, it found its most clear manifestation towards the end of the ist century B. C. in the production of the ceramic workshops in Arretium, the so-called Arretine-type vessels. These were the standard dinner sets made of fine clay covered with a brilliant reddish-brown glaze, the bottoms of which were very often stamped with the name of the potter or the owner of the potter's workshop. The earthenware richly decorated with relief ornaments and made in moulds, known as terra sigillata, are also related to this group. [1]

The production of ceramics in Arretium had almost died out towards the end of the rule of Emperor Tiberius — (14—37 A. D.), but new varieties of the ordinary fine earthenware continued to appear. Meanwhile, under the influence of Arretium, production of terra sigillata started in many ceramic workshops of the West Roman provinces. [2] The ceramic centres in Southern Gallia were the earliest 'successors' of the traditions of the Arretine industry. [3] Production of this earthenware started in Central and Eastern Gallia [4], Germania [5], Britannia [6], Pannonia [7] and other Roman provinces. [8] Moulds for making terra sigillata have also been discovered in Bulgaria, which presupposes some local production. [9]

The production of fine earthenware continued in other eastern provinces as well. The closest imitations of the earthenware from Arretium were produced in the workshops of Asia Minor, but none of them bore close resemblance to the Italic relief earthenware. [10] The potters from Asia Minor had adopted only the basic forms of the ordinary fine ware, considerably changing them. They contrasted the earthenware with sophisticated ornamental elements to the simple vessels with a clear shape, and replaced the tall ring-footed sharp-edged base with a wide short foot. [11]

Instead of the thick glossy glaze, covering the whole surface of the Italic sigillata articles, the craftsmen from Asia Minor applied glaze only on the upper part of the earthenware. [12]

The features typical of the earthenware originating from the workshops of Asia Minor are to be seen in the earthenware from the centres explored near

Nicopolis ad Istrum. The shapes here are also rather complicated and not so distinctly enhanced. The bottoms are additionally scrubbed and shaped as a short ring-foot with rounded edges. The glaze is unevenly applied, covering only the visible surface of the vessel and its colour repeats the range of colours found in Asia Minor — light-brown to bark-brown shades on the same vessel, as a result of the abnormal conditions of firing in an ordinary two-chamber pottery kiln.

1. Dishes

The wheel-made, glazed dishes represent a considerable part of the production list of the ceramic centres discovered so far on the territory of Nicopolis ad Istrum. An important and typical feature of most of the dishes is the thinness of their walls, achieved by additional scrubbing with a sharp tool which was on the potter's wheel (Table XLII, 2). In the rich collection of dishes discovered in these centres, one could notice imitation of ceramic forms which had been widespread at that time in the Eastern Greek and Western Roman workshops. The dishes are classified into the following types:

Type 1

In the second half of the 2nd century, the workshops near Hotnica, Pavlikeni and a little later in Butovo started mass production of flat shallow dishes with slightly inclined walls, sharply turning into a vertical rim, enhanced on the outside by double parallel relief lines. The dishes have a tall foot, additionally shaped on the potter's wheel. Their diameter is 16—25 cm and their height — 4—7 cm.

The dishes are to be found in three variants:

Variant **a** (Table XXVI, 1). Two or three circles are drawn on the flat bottom by means of a cogwheel.

Variant **b** (Table XXVI, 2). A footmark is stamped on the bottom encircled with short lines arranged crosswise.

Variant **c** (Table XXVI, 3). Two footmarks (*planta pedis*) are stamped on the bottom, symmetrically located between two circles drawn by means of a cogwheel and a pointed object. This type resembles the shape of the type 21 earthenware in Olbia[13] and type 7 (M) from Mirmekion, which is dated to the ist century.[14]

T. Knipovitsch refers this earthenware to the third group from Asia Minor, which unifies the ceramic products from different centres in Asia Minor, including the centres in the vicinity of Pergamum.

Actually type 21 from Olbia and type 7 from Mirmekion are considered by Knipovitsch as variants of types 19 (Olbia) and 6 (Mirmekion), respectively. They are completely analogous to the earthenware of type 1, discovered in Çandarli and dated by S. Loeschke to the period succeeding the rule of Augustus.[15] This type of earthenware represents a remodelling of an earlier type from Asia Minor, made under the influence of Italic models.[16]

The names of the manufacturers or the owners of potter's workshops are quite often to be found stamped in Greek on the bottoms of the earlier types from Asia Minor.[17] This tradition continued later as well, then its original function was lost, attaining a purely decorative character. One or two schematic human footprints appeared instead of the names of the owners. At the same time the vessels became deeper, their lower part passing smoothly in a rim which is slightly turned outward. One of these late variants of this type from Asia Minor served as a model to the craftsmen from Hotnica, Pavlikeni and

Butovo. Similar cases are also the earthenware of type 9 (T) and 9A (T), discovered in Tyritake.[18]

Fragments of earthenware produced in workshops on the territory of Bulgaria have been found during the archaeological exploration of Novae[19] and Nicopolis ad Istrum.[20] Earthenware resembling these in shape have discovered in burials near Sliven (together with coins dating from the time of Emperor Antoninus Pius),[21] Enija (present-day Mladinovo. near Svilengrad),[22] the village of Prosenik, district of Burgas,[23] Svilengrad railway station[24] and tumulus No. 1 near Plovdiv.[25]

Type 2

(Table XXVI, 4)

Shallow dishes are among the most widespread types of earthenware from Hotnica, Pavlikeni and Butovo. Their inclined walls end with a rounded rim, emphasized on the outside with an incised line. The bottom, together with the lower external side, is additionally scrubbed, forming the ring-foot. There is a circle of lines arranged crosswise on the inner surface of the bottom, drawn by means of a cogwheel. The same decoration is also to be found on the rounded edge of some other earthenware. Dishes of this type differ in size. Their diameter varies from 18 to 29 cm. Small dishes were usually produced near Pavlikeni, while the craftsmen in Butovo preferred the large ones. Similar earthenware was found in the barrow graves in the Kalvaka locality, near Butovo, together with coins dating from the time of Antoninus Pius (138—161 A. D.), as well as in Novae, Nicopolis ad Istrum and other ancient settlements in present-day North Bulgaria.[26]

Similar vessels are discovered in Mirmekion (type 17, drawings 5, 2, 3),[27] and in its corresponding type 26 from Çandarli, dated to the end of the 1st and the beginning of the 2nd centurry. This is one of the most preferable forms in Çandarli. S. Loeschke describes the two varieties of this type — an earlier variety (type 26a) and a later one (type 26b).[28] There are stamped inscriptions in Greek on the early ceramics and on the later ones there are stamped palmettes, rosettes, concentric circles, etc. After the time of Tiberius, this type underwent a series of alterations. T. Knipovitsch claims firmly that this type belonged to the group from Pergamum.

Type 3

(Table XXVI, 5)

A deep dish was found in the necropolis in the Kalvaka locality, near Butovo. It has a base-ring, a wide bottom and inclined walls, the rim of which is emphasized on the inside by an incised line. The vessel is thick-walled and rough, its bottom being decorated with two circles with incised small lines arranged crosswise. The diameter reaches 16.3 cm and the height 7.4 cm. It was discovered together with coins dating from the mid-2nd century. The production of this type of earthenware has so far been proved only by a few fragments in the ceramic centre near Pavlikeni. Earthenware similar in shape was discovered in the Athenian Agora[29] and dated to the 1st century.

This is a very rare type, having remote parallels with the earthenware produced in the West Roman workshops.[30]

Type 4

Towards the middle of the 2nd century the ceramic centre near Pavlikeni started production of shallow dishes with slightly oblique walls and a wide, arch-shaped edge curving outward and decorated with squirted stylized plant

ornaments. Additional decoration is also to be seen on the bottom and on the inside. According to this, the following four variants are distinguished:

Variant **a** (Table XXVI, 6). A human footmark is stamped on the bottom, encircled by two concentric circles consisting of short lines arranged crosswise, drawn with a cogwheel.

Variant **b** (Table XXVII, 1). In contrast to variant **a**, there are two human footmarks stamped on the bottom and encircled by one concentric circle of small lines arranged crosswise.

Variant **c** (Table XXVII, 2). Four symmetrically arranged 'commas' are additionally squirted on the wide out-turned arch-like rim.

Variant **d** (Table XXVII, 3). The walls are very oblique and three concentric circles consisting of short lines arranged crosswise are drawn on the flat bottom. Four symmetrically arranged 'commas' are squirted on the arch-shaped rim. Dishes of the kind produced in the ceramic centre near Pavlikeni are to be found in the barrow graves in the Kalvaka locality near Butovo, together with coins dating from the time of the Emperors Antoninus Pius and Marcus Aurelius. The diameter of the dishes reached 18 cm and their height 4 cm.

This type of dish is an imitation of the terra sigillata produced in the second half of the 1st and the first half of the 2nd century in the West Roman workshops (Drag. 36).[31] The only difference is in the base-ring, which is shorter here, massive and with no sharply outlined and pointed edges.

Parallels to this type of earthenware are to be found in Novae,[32] Succidava,[33] Singidunum[34] and other towns along the middle and lower course of the Danube.[35]

Similar earthenware in not to be found among the ceramics from Asia Minor.

Type 5

(Table XXVII, 4)

Deeper dishes with flat bottoms were found in the ancient necropolis in the Kalvaka locality near Butovo. They have arched walls, ending in a wide horizontal rim, cut short by a vertical strip on which two small ribbon-like handles are fixed. The lower external side is additionally scrubbed and a small concave foot is shaped. These dishes are made of fine clay, coated with glaze which differs from that in Hotnica, Pavlikeni and Butovo, its colour varying from yellowish-coral to light brown. This colour is typical of the ceramics from Asia Minor. As a result of the additional firing at a higher temperature, the colour of the glaze changed from dark brown, smoky grey to shining black. The diameter of these vessels reaches 18 cm, their height — 3 cm. This type of earthenware is to be found in graves, together with coins dating from the time of Emperor Antoninus Pius.

The production of a similar type of earthenware (significantly larger in size) started in the ceramic centre in Butovo towards the beginning of the 3rd century (Refer to type 6).

Type 6

(Table XXVII, 5, 6, 7; Table XXXVIII, 1)

Mass production of big shallow dishes started towards the end of the 2nd century only in the ceramic centre in Butovo. Their walls rise smoothly and end in a horizontal thickened rim which is sophisticated in shape. The back of the bottom is additionally scrubbed and a short base-ring is formed. Relief rings or

circles made by cogwheel are drawn on the inside of the bottom. Their diameter reaches 33.5 cm and their height — 5.5 cm.

Two symmetrically fixed decorative handles are additionally stuck to the rim with sophisticated shape of most of these vessels. Some of the handles represent folded strips, retouched by hand, while others represent small relief plates, made in single clay moulds. There are also decorative handles, ornamented with relief loops and small centred circles, as well as combinations of floral and figural motifs (cockfight amongst a stylized rosette, flanked by two palm twigs) (Table XXVIII, 2, 3).

The earthenware of this type is a development of type 5. Single fragments are often to be found during the archaeological exploration of Novae,[36] and in different sites on the territory of Nicopolis ad Istrum.[37]

A close parallel is type 4 in Çandarli, which is related to some of the more recent forms.[38]

Type 7

(Table XXVIII, 4)

During the second half of the 2nd century production of shallow dishes started in the ceramic centre in Butovo. Their walls rise gradually and end in a slightly out-turned rim. The back side of the bottom is additionally scrubbed and a wide base-ring is formed. The diameter of the vessel reaches 28 cm.

This type is an imitation of the sigillata forms.[39] A similar type of earthenware is attributed by J. W. Hayes to the late African ceramics (Form 18).[40] This is a type which is widespread in Northern Bulgaria[41] and along the Lower Danube.[42]

Type 8

(Table XXVIII, 5)

Deeper dishes with a thinned rim, slightly curved inwards, were made in the ceramic centres near Hotnica, Pavlikeni and Butovo. The bottom ends in a ring-base which is additionally modelled on a potter's wheel. Their diameter reaches 26 cm. The production of this type started in the second half of the 2nd century. Similar vessels are to be found on the territory of Novae and Nicopolis ad Istrum.[43] Earthenware of a similar form is to be seen from Succidava,[44] although the bottom is not additionally scrubbed. Obviously they originated from some local potter's workshops.

Type 9

(Table XXVIII, 6)

A deep dish-tray with a wide and flatly cut base. The lower part is semiconical and the rim is curved inwards. Its diameter reaches 20 cm, the height 6 cm.

This type of vessel was produced only in Butovo since the second half of the 2nd century. The centres near Hotnica and Pavlikeni produced only imitations in greyish-black. We find close parallels in Germania,[45] Pannonia,[46] Moesia Superior[47] and Dacia.[48]

Fragments of type 9 were also discovered during the archaeological exploration of Novae and on the territory of Nicopolis ad Istrum.[49]

2. Bowls

These are deep vessels of various shapes and sizes. They are made on a potter's wheel, their back part being additionally scrubbed, thus forming the foot. The bowls produced in Hotnica and Butovo have a cylindrical upper part and those produced in Pavlikeni are semispherical in shape.

They are classified into the following types:

Type 1

(Table XXVIII, 7)

One of the most widespread types in the explored ceramic centres are bowls, the lower part of which is conical and the upper part cylindrical, ending with a slightly rounded rim, emphasized on the outside by a deeply incised line. The bottom stands on a wide ring shaped foot. The vessels reach a height of 9—14 cm, their diameter being from 18.5 to 27 cm. Small double arched handles whose upper cylindrical part is appliquéed, are to be found on some of this earthenware.

This type of bowl is to be found on almost all ancient sites in Bulgaria[50] and along the Danubian *limes*,[51] together with coins dating from the second half of the 2nd to the beginning of the 4th century.

Similar in form is type 29 from Olbia, which T. Knipovitsch included in group 'D' from Asia Minor.[52] Additional decoration has been applied upon the upper cylindrical part of many earthenware vessels of this type (variant 1 **b**). Deep vertical furrows, imitating the decoration of terra sigillata, were most often made with a chisel. Bowls with similar decoration were produced during the second half of the 2nd century in the ceramic centres near Hotnica and Pavlikeni (Table XIX, 3, 5). Other vessels were decorated with parallel lines of segments arranged crosswise, drawn with a cogwheel. The small cross-segments in the ceramic centre near Pavlikeni are triangular in shape, while in Butovo they are rectangular (Table XXVIII, 8).

The whole cylindrical part of the third group of earthenware (variant 1 **c**) is decorated with squirted ornaments: usually alternating ivy-leaves or combinations of leaves and twigs. This type of decoration is more often to be seen on earthenware from the ceramic centre in Butovo and very rarely in Pavlikeni (Table XXIX, 1).

Bowls with additional decoration, produced there, have been found on the territory of Nicopolis ad Istrum, Novae[53] and Succidava.[54] Analogous earthenware with a similar decoration have been found in Serdica,[55] Emona[56] and other ancient sites. This is actually a Roman form which is often to be found.[57]

Type 2

(Table XXIX, 2, 3)

Towards the mid-2nd century only the workshops in Pavlikeni started mass production of deep semispherical bowls with a typical out-tuned arch-shaped rim, upon which additional decoration of stylized ivy-leaves and twigs was very often squirted. Great variety in size is observed in this type. The diameter reaches up to 42 cm, and the height varies from 9 to 12 cm. Parallel circles incised with a cogwheel are comparatively more rarely drawn on the bowl bottom. Similar decoration is also applied on the out-turned rim (Table XXIX, 4)

This type of earthenware imitates the semispherical bowls of the terra sigillata type[58] produced in the West Roman provinces, and espacially from the workshops in Graufesenque (Southern France).[59] They are to be found in Novae,[60] Succidava,[61] Singidunum,[62] Emona,[63] etc., and they are dated to the second half of the 2nd century.

Type 3

(Table XXIX, 5)

Semispherical bowls whose rim is thickened and emphasized on the outside by means of an incised line. The bottom is additionally formed as a low foot-ring. Two 'periwinkles' are squirted on the upper part of the vessel, imitating handles. They were produced only in the ceramic centre near Pavlikeni after the second half of the 2nd century. Fragments of this type are rarely to be found in settlements on the territory of Nicopolis ad Istrum and Novae.[64]

Type 4

(Table XXIX, 6)

Deep semispherical bowls and in-turned rim. They are usually to be found as small bowls whose bottom had additionally been shaped as a grooved foot-ring. Their diameter reaches up to 12 cm. Their production was mastered in the wokshops near Pavlikeni during the second half of the 2nd century. Together with these small bowls, larger-sized bowls, up to 22 cm in diameter, were produced in limited quantities.

Semispherical bowls were produced in the Western production centres[65] already at the time of Augustus, their foot being taller and the edges pointed. The earthenware from Pavlikeni imitates the shapes from Asia Minor and especially those from Çandarli 20,[66] Olbia 32,[67] Mirmekion 13.[68] On the territory of Bulgaria they are to be found in Novae,[69] Nicopolis ad Istrum,[70] etc.,[71] as well as along the Danubian border (*limes*).[72]

Variant **a** (Table XXX, 1). Decoration consisting of four symmetrically arranged stylized ivy-leaves is comparatively more rarely squirted on the upper part of the bowls, curved inwards. Vessels similar to those described are not known from other sites for the time being. Apparently, this is a local variant.

Type 5

(Table XXX, 2)

Thin-walled semispherical bowls with a small grooved foot-ring shaped by additional scrubbing. Their diameter reaches up to 15.7 cm, and their height up to 8 cm. They were produced in all the centres discovered so far on the territory of Nicopolis ad Istrum as an imitation of metal vessels. Separate fragments of this type are also known from Novae.[73]

Type 6

(Table XXX, 3)

By the beginning of the 3rd century, production of semispherical bowls had started only in Butovo. They have a ring-foot, additionally scrubbed together with the lower part of the vessel. The rim is curved outwards and is emphasized by means of a deep incised line. The bowls reach a height of up to 8 cm, their diameter being 12.5 cm.

Type 7

(Table XXX, 5)

These are tall slender bowls with a conical lower part and a cylindrical upper one, standing on a small foot-ring, with their rim thickened and sophisticatedly shaped. Stylized ivy-leaves and twigs are squirted on the cylindrical part of these bowls. Their diameter varies from 17 to 24 cm and their height from 15 to 22 cm.

The production of this type of vessels started in the second half of the 2nd century only in the ceramic centre near Pavlikeni. As far as shape is concerned, these bowls resemble the deep krater-like vessels (Table XXX, 5), as well as the bell-chaped vessels on a high hollow foot.

3. Cups

While studying the ceramic material from the considered area, one is impressed by the great amount of fragments and intact cups of varying shapes

and sizes. These are mainly small vessels, having either a straight rim, curved in the form of an arch, or a rim of sophisticated shape, with a flattened bottom or an additionally shaped concave foot.

The cups are classified into the following types:

Type 1

(Table XXX, 6)

Cone-shaped cups, their bottom and lower part being additionally scrubbed on the potter's wheel. The rim is slightly rounded off. Cups of this type greatly differ in size, reaching a height of 4.1-5 cm and a diameter of 10-11.2 cm. Their production was mastered in all ceramic centres on the territory of Nicopolis ad Istrum. They are to be found in large numbers in the necropolis in the Kalvaka locality, near Butovo, together with coins dating from the time of the Emperors Hadrian and Antoninus Pius, as well as in Novae,[75] Nicopolis ad Istrum[76] and on other ancient sites.[77]

Type 2

(Table XXXI, 1)

Cups, similar to type 1, but with slightly concave walls, slightly out-turned rim and emphasized on the inside by an incised line. They reach a height of up to 3.8 cm, their diameter being up to 9.9 cm. The cups were produced in all three centres, together with the cups of type 1. Similar earthenware is discovered in the West Roman provinces.[78]

Two dented handles were very rarely formed by means of a comb on the out-turned rim.

Type 3

(Table XXXI, 2)

The lower semiconical part rises from the flat bottom of the cups of this type, smoothly going outwards in the upper end, forming a bulging edge and passing to the upper cylindrical part to end in a rounded-off rim, emphasized on the outside by means of a small incised line.

This is a simplified variant of a basic type of earthenware produced in early Roman times in the Western workshops for sigillata,[79] as well as in the Eastern Greek ceramic centres, and in particular on the Island of Samos.[80] These cups have a small foot-ring which disappeared later and their bottom became additionally smoothed on the potter's wheel. This later variant was still produced and exported at that time.[81] What is more, it was used as a model by many provincial craftsmen.[82]

The production of cups of this later variant was mastered only in the ceramic centre near Pavlieni towards the mid-2nd century. Their diameter is 8.7 cm and their height is 4.3 cm.

Entirely similar cups are to be found in the necropolis of the Kalvaka locality near Butovo, together with coins dating from the time of Emperor Antoninus Pius (138—161 A. D.).

Similar cups are very rarely to be found on the territory of Bulgaria.[83]

Type 4

(Table XXXI, 3)

Tall cups with a slightly bulging middle part and a rounded-off rim, emphasized on the outside by one incised line. The vessel stands on a small groove-footed bottom, additionally modelled on the potter's wheel. The production of these cups started in the middle of the 2nd century only in the centre near Pavlikeni; they reach a height of 7.7—8.9 cm, their diameter being

from 7 to 8. 4 cm. Vessels of this type have not been discovered for the present in other ancient settlements and necropolises.

Type 5

(Table XXXI, 4)

Semispherical cups with additionally modelled groove-foot. The rim is first bent outwards at right angles, after which it turns inwards, forming a vertical, slightly concave band. Two flat strap handles were very often stuck to the vertical rim for decorative purposes. The cups reach a height of up to 4.2 cm, their diameter being up to 9.4 cm. Their production was first mastered only in the ceramic centre near Pavlikeni, but towards the mid-2nd century they began to be produced in Butovo as well. Entirely similar cups are quite often to be found in the ancient necropolis in the Kalvaka locality near Butovo, together with coins from the Emperors Hadrian and Marcus Aurelius.

This type of cup is a variant of the semispherical earthenware, produced at the end of the ist century in the workshops of Pergamum.[84]

Type 6

(Table XXXI, 5)

Semispherical cups with a out-turned arch-shaped rim. The tall concave foot was additionally modelled on the potter's wheel. The walls are rather massive. These cups are to be found in different sizes, their height varying from 4.1 to 5.1 cm and their lip diameter being from 8.8 to 10.5 cm.

Variant a (Table XXXI, 6). Four symmetrically arranged 'commas' are squirted on the arched rim.

This type of cup is very often to be found in the necropolis of Kalvaka, near Butovo, together with coins starting with emperor Traianus to Marcus Aurelius. Their production was mastered only in the centre near Pavlikeni. They are an imitation of the terra sigillata cups[85] which, together with the shallow dishes, were produced in the Western sigillata workshops since the second half of the lst until the middle of the 2nd century. Similar cups have been discovered during the archaeological exploration of Novae[86] and Succidava.[87]

Type 7

(Table XXII, 1)

Tall slender cups put on a small concave foot, additionally scrubbed on the potter's wheel, originate from the ceramic centre near Pavlikeni. These cups are decorated with incised concetric lines and small elliptic pits cut out with a sharp tool. They are discovered together with coins issued by Emperor Marcus Aurelius in the necropolis of the Kalvaka locality near Butovo. They reach a height of up to 12.7 cm. Similar vessels are discovered along the Danubian border (*limes*)[88] and in the West Roman provinces.[89] Big vases resembling this type of cups were also produced in the same centre, but the decoration was more varied: elliptic holes and leafy rosettes alternate between incised lines. This type of earthenware entirely imitates the glass vessels produced at the same time.

Type 8

(Table XXXII, 2)

Two-handled cups are very rare among the ceramic finds from the centre near Pavlikeni. They have a conical lower part and a cylindrical upper one, the walls of which are slightly curved inwards. The rim is slightly rounded off and emphasized on the outside by one incised line. The bottom is concave and

together with the lower part it is additionally scrubbed on the potter's wheel. They reach a height of up to 9.5 cm, their diameter being up to 10.4 cm.

Type 9

(Table XXXII, 3)

One cylindrical fragment has been discovered in the ceramic centre in Butovo, thrown away into a garbage pit as a discarded product. The cup was with a concave foot, additionally modelled on the potter's wheel. The walls are decorated on the outside with ribs, limiting a broad space filled out with relief human figures and rosttes, all made in advance in single moulds. Two figures and one rosette had come off during the firing. The figure of a bearded man in a long garment and one rosette are the only decorations remaining on the earthenware fragment. Most probably, a frieze with a Dionysian scene had been depicted on the cup.

The cup from Butovo was made as an imitation of the cylindrical cups[90] which had beed widespread in the West Roman provinces. However, a different technique was used for making the cup, namely appliquéing of a relief image made in advance and not in a clay mould.

4. Jugs

Clay one-handled jugs are vessels which are most often to be found in the ceramic centres near Hotnica, Pavlikeni and Butovo. They resemble deep cups in shape. Usually they have no decoration, but there are some jugs with Barbotine decoration.

Type 1

(Table XXXII, 4)

Jugs with a spherical body and a small neck, slightly outturned and limited at the base with a plastic ring. Their bottom is flat and additionally smoothed on the potter's wheel. The handle is wheel-made and it has a round section. These jugs are different in size, their height varying from 5.6 to 10.3 cm, and their diameter from 6.6 to 13.1 cm. They are distinguished by the thinness of their walls and by the good quality metallic glaze.

Similar vessels have been discovered in the necropolis of the Kalvaka locality, near Butovo,[91] Nicopolis ad Istrum[92] and Novae.[93] They are dated to the first decades of the 2nd century up to the second half of the 3rd century. The one-handle jugs discovered in ancient necropolises and settlements in Thracia,[94] Moesia Inferior and Superior,[95] Dacia,[97] and Achaia[98] originated at the same time.

Entirely similar earthenware has been discovered in Olbia (Type 39), which T. Knipovitsch refers to third group E.[99] They originate from the ceramic workshops of Asia Minor, as well as from the potter's workshops of Pergamum. We should mention as confirmation of this the one-handled jugs discovered in Çandarli (Type 13)[100] and written about by S. Loeschke.

Variant **a** (Table XXXII, 5). Additional Barbotine decoration, filling out almost the whole earthenware, was applied on some jugs produced only in the ceramic centre in Butovo since the end of the 2nd century. Squirted cone scales are most often to be found, as well as stylized vine-twigs and ivy-leaves or combinations of pinecone-shaped ornaments and ivy-leaves.

Fragments of jugs with Barbotine decoration similar to those produced in Butovo, are discovered in Nicopolis ad Istrum[101] and Novae.[102] Two completely preserved one-handled vessels, decorated with ivy leaves and a pine-cone-shaped ornament, have been discovered near the Roman station Dimum, which is near the present-day Belene.[103]

Type 2

(Table XXXII, 6)

A clay jug from the necropolis of Kalvaka near Butovo has a slender body, a small concave foot and a vertical neck ending with a rounded-off rim emphasized by one incised line. A handle with round section is fixed to the neck base and the middle part of the jug.

The jug is thin-walled, of fine clay and coated with light-brown glaze. It was discovered together with a coin from Emperor Hadrian (117—138 A. D.).

An exact parallel of this type of earthenware has not been found so far in the production centres explored. This proves that it originated from another workshop. It seems that under the influence of this form, towards the middle of the 2nd century the ceramic centre in Pavlikeni started mass production of similar jugs (variant 2 a, Table XXXII, 7). They have a conical lower part and a heavily bulging middle, getting slightly narrower and turning into a neck which is slightly bulging outwards. The vertical rim is emphasized on the outside by one incised line. The small concave foot is additionally scrubbed. An unusual handle is fixed onto the most bulging part dezigned for hanging up rather than for holding.

Jugs of this type reach a height of 10–12 cm.

Additional Barbotine decoration of stylized ivy-leaves and twigs was applied on the protruding part of some jugs produced in Pavlikeni (variant **b** (Table XXXII, 8, 9).

Earthenware of this variant is very rarely to be found in the ancient sites on the territory of Nicopolis ad Istrum.[104]

5. Pitchers

The District Historical Museum in Veliko Tărnovo possesses a large collection of various shapes and sizes of pitchers. They originate from necropolises and ancient settlements on the territory of Nicopolis ad Istrum. Part of the pitchers were produced in the ceramic centres near Hotnica, Pavlikeni and Butovo, but production of other workshops is also to be found.

Type 1

(Table XXXIII, 1)

Pitchers with a slender body and a wide neck, separately made and additionally fixed together; the rim is thickened and slightly out-turned, the bottom is concave and additionally shaped on the potter's wheel. They are thin-walled, made of fine clay and their upper part is coated with glaze. Their handles are flat and fluted. They reach a height of up to 35 cm. Additionally drawn incised lines or circles, made with a cogwheel, are sometimes to be found on the upper part of the pitchers.

The production of this type was mastered in all three ceramic centres. Similar vessels have been discovered in ancient settlements both in the East[105] and West Roman provinces[106] dating from the end of the 5th century to the Late Antiquity.

Type 2

(Table XXXIII, 2, 3)

A completely preserved pitcher has been found in the necropolis of Kalvaka, near Butovo. Its semi-conical lower part lightly turns into a tall neck with a ring-shaped rim; the neck itself is widened at the base and narrowed in the upper part. The bottom is concave and additionally shaped on the potter's wheel with a relief protuberance. A flat fluted handle is fixed to the neck and the upper part of the body. The pitcher which reaches a height of 38 cm was

made of clay mixed with chamotte of fine sand grains and after firing it acquired a brick-brownish colour. Traces of resinous matter are preserved on the inside of the vessel. The burial in which it has been discovered is dated to the third decade of the 2nd century. Entirely similar pitchers are to be found in the same necropolis: in burials, together with coins dating from the second half of the 2nd century, but now made of fine clay with a glaze. Their production was adopted only in the centre near Pavlikeni. The potters had preserved the old form, but they produced greater variety in size, preferring the smaller pitchers.

Similar earthenware are very often to be found in funerals mainly in Southern Bulgaria: Enija,[107], Gara Svilengrad and Mezek,[108] the village of Sveti Kirilovo,[109], Kadin Most,[110] Sliven, [111] Nova Zagora,[112] Serdica,[113] Stara Zagora,[114] Čatalka.[115] the villages of Prosenik and Gledka, district of Kărdžali.[116] The only pitcher made of coarse clay in Northern Bulgaria has been discovered in a burial near the village of Snežina, district of Varna.[117] Vessels of the same type filled with resin have been dinscovered near the city wall of Serdica.[118]

This type of pitcher is to be found in the towns of the Northern Black Sea area.[119] Similar pitchers are not known from the West Roman provinces. All this shows that their origin should be sought in the potter's workshops in Asia Minor. The pitchers were mainly used as shipping containers for carrying olive oil and other oily liquids, remains of which were often preserved in the pitchers (Gara Svilengrad, Brezovo and Plovdiv[120]). Pitchers were also definitely used in the funerary ceremony.

The majority of authors date this type of pitchers to the second half of the 2nd and the beginning of the 3rd century. The find from Kalvaka, which undoubtedly was brought from abroad, is dated two centuries earlier.

Pitchers of fine clay which are entirely similar to those produced in Pavlikeni, have been discovered duing the archaeological explorations in Novae,[121] as well as in funerals dating from the second half of the 2nd century in the neighbourhood of Succidava.[12 2]

Type 3

(Table XXXIII, 4)

Small one-handled pitcheres with a broad foot-ring, additionally scrubbed on the potter's wheel, were found in the necropolis of Kalvaka. The body is tall, slender, gently turning into a narrow neck, which ends with a thickened ring-shaped rim.

This type is a reduced in size variant of type 2, reaching a height of up to 22 cm. The production of this type of pitchers has been established for the present only near Pavlikeni and it is very rarely to be found in other necropolises. Similar small pitchers were discovered in Aquincum, but were made less carefully and are of a rougher fabric.[123]

Type 4

(Table XXXIII, 5)

The pitcheres with a rounded body and a broad foot-ring have been discovered in one of the burials on Kalvaka near Butovo. The neck is rather typical — slightly narrowing near the base and widening upwards, ending with a rounded rim. Incised concentric lines are drawn on the external side of the neck. The handle is flat and fluted. The pitchers are made of fine clay with glaze. They reach a height of up to 21 cm. Separate fragments of this type are to be found only near Pavlikeni, where their production started in the second half of the 2nd century.

Similar earthenware is to be found in the West Roman provinces.[124]

Type 5

(Table XXXIII, 6)

One-handled pitchers were found in the necropolis of Kalvaka. Their body is slender, the bottom being with a foot-ring, additionally modeled on the potter's wheel. The neck is wider at its base and gradually gets narrower in the middle, then widens again and ends with a slightly out-turned rim. There is a relief ring on the narrowest part of the neck. The handle is flat and fluted. The pitchers are made of fine clay and are covered with glaze. Their production started in the centre near Pavlikeni during the second half of the 2nd century.

Similar pitchers with a funnel-like neck have been dicovered in Succidava together with coins from the time of Emperor Alexander Severus (222—234 A. D.),[125] as well as in the West Roman provinces.[126]

Type 6

(Table XXXIV, 1)

One-handled pitchers with a broad foot-ring. The body is slender, the neck is narrow, cylindrical and decorated on the outside with deep concentric furrows. The rim ends with a plastic ring. They are made of fine clay and covered with glaze, reaching a height of 18.6 cm. These pitchers are very rarely to be found, only in the necropolis of Kalvaka near Butovo, together with coins from the time of the Emperors Antoninus Pius and Marcus Aurelius. The production of this type of pitchers was adopted only in the ceramic centre near Pavlikeni.

Type 7

(Table XXXIV, 2)

Around the middle of the 2nd century the workshops near Pavlikeni and a little later in Butovo started mass production of one handled pitchers with broad foot-ring, additionally scrubbed on the potter's wheel. Their body is spherical or slightly elongated, with a small cylindrical neck, and ending with a typical doubly flattened conical rim. Their heigt varies from 12 to 22 cm.

This type of pitchers is very ofthen to be found in the necropolises on the territory of Nicopolis ad Istrum[127] and Novae[128], together with coins from the 2nd- 3rd centuries.

Similar earthenware has also been discovered in other parts of Bulgaria.[129] The name Pergamion is scratched on a pitcher from Plovdiv, which gives grounds to assume an eastern origin of this type of earthenware.[130]

Pitchers of this type are widespread along the whole Danubian basin. No doubt, some of them originated from the three centres discussed, while the other rougher pitchres, with no additionally shaped foot, were made by local craftsmen.[131]

Pitchers with a funnel-like mouth of a more elongated and rough shape were also produced in the West Roman provinces.[132]

6. Amphorae and Amphora-like Earthenware

A significant part of the production of the ceramic centres near Hotnica, Pavlikeni and Butovo represent the large and small earthenware with a cylindrical neck and two handles.

Usually, the large vessels stand on a concave foot shaped before the complete drying of the vessel, white the small amphora-like earthenware have a broad foot-ring, additionally scrubbed with a sharp tool.

The large earthenware were used in everyday life for storing liquids and the small amphora-like ones were mainly deisigned for cult purposes.

Type 1

(Table XXXIV, 3)

Two-handled large earthenware, their lower semi-conical part resting on a small concave foot. A cylindrical neck is stuck to the upper bulging part which had been separately made on the potter's wheel. The rim is thickened and slightly turned outwards. Usually the handles are flat, with fluting, although cable-handles with a round section are also to be found. They are of fine clay, their upper part being not covered with glaze and sometimes decorated with deep incised furrows or circles of lines arranged crosswise made with a cogwheel. They are thin-walled and well fired.

Amphorae of this type reach a height of up to 58 cm.

During the second half of the 2nd century their mass production started near Hotnica, Pavlikeni and Butovo.

Similar earthenware were produced in many Roman provincial workshops.[133] They are often to be found in the ancient sites on the territory of Nicopolis ad Istrum.[134] Novae,[135] as well as throughout Bulgaria in burials from the first centuries A. D.[136]

Amhorae of this type are an imitation of the metal vessels dating from the same era.[137]

Type 2

(Table XXXIV, 4)

Amphora-like earthenware with a slender elongated body, standing on a broad foot-ring. The small cylindrical neck ends with a widened mouth, the rim of which is emphasized with a vertical band. Two small handles are stuck to the upper part of the vessel and the neck. This type of earthenware reaches a height of up to 20 cm and a diameter of 11.5 cm. Their production in large quantities had started already in the first years after the setting up of the ceramic centre near Pavlikeni.

Earthenware entirely similar in shape is discovered in the necropolis of Kalvaka near Butovo, together with coins from the time of emperors Antoninus Pius and Marcus Aurelius.

At the beginning of the 3rd century the production of amphora-like earthenware was mastered by the potters in Butovo as well, but their forms here were slightly changed: the tall elongated body became more rounded and the foot was considerably reduced (variant a, Table XXXIV, 5), there was also a change in the mouth, which was simplified, the vertical band disappeared and the rim was almost straightened or slightly out-turned.

Similar earthenware is often to be found in funerals near Hotnica,[138] Novae,[139] Razgrad,[140], Koriten, district of Tolbuhin,[141] Aleksandrovo[142] and Măgliž, district of Kazanlăk;[143] Sliven;[144] Obručište;[145] district of Stara Zagora. The vessels are dated to the first decades of the 2nd- 4th centuries.

This type of earthenware spread in the West Roman provinces after the 1st century.[146]

Type 3

(Table XXXIV, 6)

An amphora-like vessel with a spherical body, the cylindrical neck of which ends with a widened mouth emphasized on the outside with a vertical band. Two small fluted handles are stuck to the upper part of the vessel and the neck. Incised concentric lines are drawn below them. The bottom is concave with no foot-ring, additionally shaped on the potter's wheel.

The vessel is made of fine clay and covered with glaze. It was found together with a coin from the mid-2nd century in the necropolis of Kalvaka in Butovo. On the basis of the clay composition and its workmanship, one could determine that it belonged to the ceramic production of the centre near Pavlikeni.

Similar earthenware from other ancient production centres and sites are not known and this fact gives grounds to the author to consider this type of earthenware as a local form created in the centre near Pavlikeni.

Type 4

(Table XXXV, 1)

In the last decades of the 2nd century the potters from Butovo gradually abandoned the production of amphora-like earthenware with a widening mouth and a vertical sharply off-set im, starting mass production of amphora-like earthenware with a funnel-like neck.

This type of vessels is a development of an earlier less elegant type of plain shape and a sophisticated biconical mouth. The shape is rather clear, the workmanship being fine and of high quality. Two variants are to be found. Both of them have a funnel-like neck, an evenly cut off rim and a small foot-ring. Two flat handles are attached to the neck and the upper part of the vessel.

The difference between the two variants is only in the shape of the body. In the first case it is heavily bulging in its lower part and in the second case it is ball-shaped. The two variants are to be found together, made of the same fine purified clay which had acquired a light-brick colour after the firing. In their upper part the vessels are coated with a light-brown glaze which usually oozed down in stripes towards the bottom. They were sold not only on the territory of Nicopolis ad Istrum[147] and Novae[148] but in the neighbouring urban territories[149] as well, even exported to the north of the Danube.[150] A completely preserved earthenware of this type is known from the excavations of the Roman villa near the village of Prisovo,[151] discovered together with coins from the mid-3rd century.

Together with the two variants from Butovo, there is also a third variant of two-handled vessels which is to be found on the territory of Nicopolis ad Istrum. These do not differ considerably from the earthenware of the first two variants, only their mouth is slightly widened and ending with a ring-shaped rim. The difference is rather to be noticed in technical execution. The clay is still fine, well purified, but the fineness of the thin-walled, clinking and well fired earthenware from Butovo is lacking; instead of the good-quality, almost transparent light-brown glaze of the pottery made in Butovo, there appears a thick dark-brown layer of fine clay matter. Such vessels have been discovered in the necropolis between Samovodene and Hotnica, together with some materials which bear the marks of an era when ceramic production was already on the decline.[152] Probably they originated from still undiscovered potter's workshops on the territory of Nicopolis ad Istrum.

7. Two-Handled Earthenware

The broad-mouthed and two-handled earthenware (large and small in size) were used for religious purposes, the larger ones especially as urns. They were produced on a large scale in the ceramic centres near Hotnica, Pavlikeni and Butovo, where we found intact vessels and a great amount of fragments.

Type 1

(Table XXXV, 2)

Large vessels with a conical lower part and a cylindrical upper part, ending with a thickened rim sophisticatedly shaped. The fluted straphandles are stuck to the upper part. The bottom ends with a short foot-ring. They reach a height of up to 17 cm, and a diameter of up to 21 cm. This type of ware was produced only in the centre near Pavlikeni and in limited quantities in Hotnica since the middle of the 2nd up to the beginning of the 3rd century.

Variant **a** (Table XXXV, 3). Two-handled earthenware, decorated with vertical lines incised with a flat iron tool. Their production has been established for the present only in Hotnica.

Similar earthenware with incised lines has been discovered in the necropolis near Enija (present-day Mladinovo[153]), Plovdiv,[154] Meričleri[155] and Obručište.[156]

Variant **b** (Table XXXV, 4). Earthenware decorated in the Barbotine technique. These vessels were produced in Pavlikeni and were discovered in the necropolis near Butovo, together with coins of the Emperors from Hadrian to Marcus Aurelius.

Variant **c** (Table XXXV, 5). Large earthenware, the upper cylindrical part of which is decorated with appliquéed medallions with mythological and erotic scenes (made in single clay moulds). The appliquéed decoration is usually combined with other ornaments, most often hand-modelled plastic snakes. The snakes are symmetrically arranged on both sides of the earthenware. They entwine the handles several times and come above them. These vessels reach a height of up to 40 cm. Earthenware with a similar type of decoration is known from some ancient sites in Dacia,[157] Pannonia,[158] Gallia,[159] Asia Minor,[160] etc.[161]

On the handles of some earthenware of the afore-mentioned variants there are tablets in relief, made in advance in single clay moulds as imitation of some metal vessels having similar handles.

Similar pottery is discovered in Novae[162] and Burgas.[163]

Type 2

(Table XXXV, 6)

Two-handled spherical earthenware are very rarely to be discovered in the centres near Hotnica and Pavlikeni. The bottom stands on a ring-foot and the short neck is slightly bulging and decorated on the outside with incised parallel lines. No additional plastic decoration had been applied on this type.

Similar earthenware were used as funerary urns.[164] They are found together with coins dated to the 2nd-3rd century.

Type 3

(Table XXXVI, 1)

A two-handled vessel was found in the necropolis of Kalvaka near Butovo, discovered together with coins of Emperor Marcus Aurelius (161—180 A.D.). The vessel is biconical in shape. The bottom stands on a foot-ring and the rim is sophisticatedly shaped. Two cylindrical protuberances are additionally stuck to the handles. The upper part of the vessel is decorated with furrows made with a flat iron tool. They form stylized coniferous ornaments in combination with vertically arranged lines. This type of earthenware reached a height of up to 18.3 cm. Its production has been established for the present only in the ceramic centres near Hotnica and Pavlikeni, where a great number of fragments have been discovered.

Similar vessels are not known from other sites.

Type 4

(Table XXVI, 2)

Two-handled earthenware with a slender body, the lower part of which is spherical and the upper one cylindrical. The rim is sophisticatedly shaped. The bottom stands on a small foot-ring. The vessels reach a height of up to 18 cm and a diameter of up to 16.7 cm. This type was produced in very small quantities only in Pavlikeni.

Similar earthenware is discovered in Novae,[165] Succidava[166] and Singidunum.[167]

Variant **a** (Table XXXVI, 3). There is a relief decoration of stylized ivy-leaves on the upper cylindrical part of the body. Similar to this type is type 39 from Olbia, which is referred by T. Knipovitsch to group E from Asia Minor, the only difference being that the vessel from Olbia is decorated with incised plant ornaments[168] instead of relief ones.

Type 5

(Table XXXVI, 4)

The production of earthenware with a conical lower part and a cylindrical upper one stopped in the first decades of the 3rd century. A new type of earthenware appeared on the market, repeating the ealier shape, but beginning to introduce a new elment — the middle bulging part. The mouth is broad, as in the vessels of type 1, the rim being sophisticatedly shaped. The upper part usually has no decoration. These vessels reach a height of up to 18 cm and a diameter of up to 25 cm. On the handles of some of this earthenware, clay tablets, having relief decoration, made in single clay moulds, were additionally stuck (similar to type 1, variant *b*).

This type of earthenware is discovered in necropolises and it was used as a funerary urn.[169] A similar vessel has been discovered in a tumular burial in Čatalka, dated to the end of the 1st century.[170]

Type 6

(Table XXXVI, 5)

Two-handled small vessels, the lower semi-conical and upper cylindrical parts of which are identical in size. The rim is emphasized on the outside with an incised line. The bottom is concave, additionally scrubbed on the potter's wheel. They reach a height of up to 7.5 cm and a diameter of up to 9.5 cm. This type was produced on a large scale in the centre near Hotnica. It has been discovered in the necropolis of Kalvaka, together with coins from the Emperors Antoninus Pius and Marcus Aurelius.

Variant **a** (Table XXXVI, 6). Similar earthenware, the upper part of which is larger than the lower one, were produced in limited quantities in Pavlikeni. They reach a height of up to 10 cm and a diameter of up to 10.5 cm. This type is similar to type 37 from Olbia, referred by T. Knipovitsch to Group E from Asia Minor.[171]

Type 7

(Table XXXVII, 2)

The earthenware of this type is a development ot type 6. The border between the two parts is not so distinctly outlined, but it turns smoothly into a line, slightly curved inwards and ending with a thickened and shaped rim. All vessels of this type are additionally decorated on their upper part with squirted plant ornaments. They reach a height of up to 9 cm and a diameter of up to 12.5 cm.

Type 8

(Table XXXVII, 3)

It is represented by small two-handled earthenware. The lower conical part stands on a concave foot. It gradually rises and suddenly becomes narrower, turning into a small vertical neck and a slightly rounded off rim, emphasized on the outside with one insised line. Stylized ivy-leaves are squirted upon the most bulging part of these vessels. They reach a height of up to 9 cm, their diameter being 13.3 cm.

This type was produced only in the ceramic centre near Pavlikeni about the mid-2nd century. A similar type, but with no decoration, is very often to be found in ancient necropolises, especially in Thrace.[172]

Variant **a** (Table XXXVII, 4). The neck becomes larger and the rim is emphasized on the outside with an incised line. Twisted 'periwinkles' are squirted on the bulging part.

Type 9

(Table XXXVII, 5)

Towards the mid-2nd century the centres near Hotnica and Pavlikeni started mass production of earthenware with a spherical or biconical body, ending with a slightly tilted, almost vertical neck and a straight rim, emphasized on the outside with an incised line. They reach a height of up to 8 cm, and a diameter of up to 12 cm.

This type of earthenware is to be found in the necropolis of Kalvaka together with coins dating from the first three decades of the 2nd century, as well as throughout the country,[173] along the Lower Danube,[174] the northern coasts of the Black Sea[175] and in Greece.[176]

Variant **a** (Table XXXVII, 6; Table XXXVIII, 1)

The production of earthenware of this type started later in the ceramic centre in Butovo. Stylized pine-cone scales, imbricated or in chess-board order, were additionally sguirted on the outer surface of the vessel. These vessels reach a height of up to 8 cm and a diameter of up to 9.6 cm.

This variant is most often to be found in ancient settlements, together with coins from the first half of the 3rd century. A vessel decorated with stylized imbricated ornaments is known from the Roman villa near Prisovo together with coins from the mid-3rd century.[177] Fragments of earthenware with such decoration are very often to be found during excavations in Novae and Nicopolis ad Istrum.[178]

Type 10

(Table XXXVIII, 2)

Small two-handled biconical vessels with a short slightly out-turned neck which ends with a rounded rim emphasized with an incised line. Their bottom is small, concave and additionally scrubbed on the potter's wheel. They have two handles with round section and reach a height of up to 8 cm and a diameter of up to 8.1 cm.

This type of earthenware was produced only in the ceramic centres near Hotnica and Pavlikeni. It is very rarely to be found in ancient settlements together with coins dating from the end of the 2nd up to the beginning of the 4th century.

Type 11

(Table XXXVIII, 3)

The earthenware of this type represents a reduced size of type 5 vessels, in which the new element (the middle bulging part) was slightly emphasized at first, while later it occupied a dominating position. Development and improvement are to be noticed in the rim as well, which is slightly in-turned and

sophisticatedly shaped. The small concave foot was formed additionally by scrubbing on the potter's wheel. A great difference in the size of this earthenware is not to be noticed. The height varies from 7.7 to 8.5 cm, and the diameter from 8.6 to 9.3 cm.

The production of this type of small earthenware has been registered for the present only in the centre in Butovo. Entirely similar vessels have been discovered on the territory of Nicopolis ad Istrum and Novae.[179] Similar vessels are to be found in large numbers, together with coins from the 2nd- 3rd centuries in Pannonia[180] and Dacia,[181] but they are rougher and with no additional bottom scrubbing and shaping on the potter's wheel. This obviously shows that they originated from some local ceramic centres.

Variant **a** (Table XXXVIII, 4, 5, 6, 7). An additional Barbotine decoration was very often applied on the upper cylindrical and middle bulging part — a continuous frieze of stylized ivy-leaves, vine-twigs and grape clusters. Earthenware of this variant was discovered during the archaeological exploration of Novae.[182]

Variant **b** (Table XXXVIII, 8)

One vessel originates from the necropolis of Kalvaka, decorated with stylized ivy-leaves, the middle bulging part of which is still not emphasized. It reaches a height of 9.9 cm, its diameter being 10.5 cm. According to its technological characteristics, it belongs to the production of the ceramic centre near Pavlikeni.

8. Jars

In the second half of the 2nd century the centres near Pavlikeni and Butovo started production of jars of fine clay covered with glaze. Of these, two types are known:

Type 1

(Table XXXIX, 1)

Tall, slender earthenware, the upper part of which is heavily bulging, the mouth being comparatively small and outlined by a massive horizontal rim-ring. The bottom is concave, modelled before the drying of the vessel. The height varies from 22 to 36 cm, and the diameter from 22 to 29 cm.

In a similar jar there was a collective find consisting of 3,727 Roman silver coins, discovered in one of the residential rooms in the ceramic centre near Pavlikeni. The latest coin is of Lucius Verus, joint ruler with Emperor Antoninus Pius in 161—169 A. D.

The type described above was widespread in Roman times and was produced on a large scale in almost all ceramic workshops.[183]

Type 2

(Table XXXIX, 2)

It differs only in the upper part which has a broader mouth, limited by a horizontal rim, slightly projecting outwards. Two small arched handles were usually attached to the upper part and an additional decoration of incised parallel or broken lines was applied. This type varies in height from 27 to 53 cm and in diameter from 25 to 50 cm. Similar earthenware was more rarely found in ancient sites. These vessels were used for storing foods.

9. Lids

(Table XXXIX, 3, 4, 5, 6,)

The jars and the large two-handled earthenware had special lids wheel-made of fine clay. The lids are semi-conical in shape and have a cylindrical top. The base is massive and emphasized on the inside with a massive edge. Most of

them are additionally decorated with squirted stylized ivy-leaves. Their diameter varies from 8 to 16 cm. Lids of fine clay with a plastic decoration were produced only in Pavlikeni and Butovo.

Similar lids have been discovered during excavations in Novae.[184]

10. Sifters

An insignificant amount of fragments of special earthenware were found among the ceramic material discovered in Pavlikeni and Butovo, which were used for straining of liquids. They were made only of fine clay. They are deep, perforated in the lower part and coated with glaze. Technically this was achieved after additional processing of the vessel on the potter's wheel, as well as scrubbing and smoothing of the bottom. Small holes were pierced inwards with a sharp awl and arranged in concentric circles from the bottom to the most bulging part of the vessel. The diameter of the holes is from 2 to 3 mm.

Type 1

(Table XL, 1)

Deep dishes with a wide arched out-turned rim, reaching a height of up to 6 cm and a diameter of up to 15.5 cm. The production of this type of sifters was adopted only in the centre near Pavlikeni between the first two decades and the second half of the 2nd century.

Type 2

Deep two-handled vessels. They were produced only in Pavlikeni and Butovo since the second half of the 2nd century, to the first decades of the 3rd century.

They are to be found in two variants:

Variant **a** (Table XL, 2). Sifters with a smoothly cut-off bottom, a heavily bulging middle part and a small cylindrical neck, ending with a thickened horizontal rim. The two small handles are flat and elliptical in cross-section. They reach a height of up to 10.7 cm and a diameter of up to 19.3 cm.

Variant **b** (Table XL, 3). Biconical sifters with wide and out-turned rim. The bottom is additionally scrubbed and shaped into a small foot-ring. The two handles have elliptical section. The height is up to 7.5 cm.

Earthenware sifters were made on a potter's wheel as early as the La Tène era. Sifters similar to ours have been discovered near Succidava and dated to the 2nd century[185]

11. Censers

The earthenware censers produced in the considered area could be classified into two groups depending on the place and circumstances under which they are discovered in the ancient settlements and necropolises:

A. Censers for Domestic Use

(Table XL, 4)

Medium-sized conical earthenware having a small foot-ring and a conical protuberance on the inside of the bottom. The walls are smooth on the outside, the inside bearing concentric furrows. There are holes drilled on the whole surface of the vessel, 0.5—0.7 cm in diameter and arranged radially in rows from the bottom to the thickened rim which is slightly out-turned. These vessels are made of fine clay which after firing acquired a light-brown colour. The top is coated with glaze, applied irrequlary on the upper and middle parts of the vessel. The colour of the glaze varies from light-brown, reddish-brown, brown to dark brown.

The production of censers belonging to this group in the workshops near Hotnica was quite limited, in contrast to Pavlikeni and Butovo, where some of

them were used in the ancient buildings and others were thrown away into the garbage pits as discarded products from the workshops.

Almost all of them are identical in size. Their height varies from 6.8 to 9 cm and the diameter from 13.7 to 14.7 cm.

Three similar vessels have been discovered in one of the rooms of the Roman villa near Prisovo (the beginning of the 2nd century to the mid-3rd century).[186] Coals and pine resin were preserved in one of them which has smoked walls. Traces of smoking have also been discovered on the inside of almost all fragments of similar earthenware found during the excavations of the ancient buildings. This proves that vessels of this type were used as censers in the home altars.

Essential for the complete combustion of the resin in this type of censer were the deep furrows, the conical protuberance and the radially arranged rows of holes. The furrows and the conical protuberance retained the coals and the holes, ensured constant ventilation.

Except on the territory of Nicopolis ad Istrum, fragments of similar censers have also been discovered during archaeological explorations in Novae.[187] This type of small earthenware is very rarely to be found south of the Balkan Mountains — only two of these are known from Kadin Most, district of Kjustendil.[188] T. Gerasimov reports about a similar vessel discovered in Pazardžik.[189]

Production of this type of censers is not known in other provincial workshops. This provides grounds to specify them as a local type, developed and improved on the basis of an earlier Thracian form.[190]

B. Censers Used in Funerals

Type 1

(Table XL, 5)

In form these vessels resemble the shallow cups with a conical or semi-spherical upper part, to which a tall cylindrical wheel-made foot is additionally stuck.

A characteristic feature of this type of earthenware is their plastic decoration achieved during modelling by carving of deep parallel furrows with sharp edges by pressing with fingers at intervals or cutting with short crosswise lines, drawn with a cogwheel. The rim of the earthenware ending with a vertical or horizontal band was most often decorated in that way.

The production of this type of earthenware near Hotnica and Pavlikeni started towards the mid-2nd century and continued to the beginning of the 3rd century. The shape of the earthenware remained the same, a difference being noted in the size. The vessels reach a height of 15—25 cm and a diameter of 22—35 cm.

This type is less widespread in the ceramic centre of Butovo. Its production started there as late as the second half of the 2nd century and continued to the beginning of the 3rd century.

This earthenware is usually to be found broken and thrown away as discarded products into the grabage pits in the immediate vicinity of the potter's workshops and the pottery kilns. None of them was glazed. It seems that after the firing they were immersed into whitewash, bacause in the ancient sites they have been found completely coated with a thin layer of lime.

Type 2

(Table XL, 6)

At the beginning of the 3rd century only the centre in Butovo[191] started mass production of censers similar to those of the first type. They were also wheel-made, preserving their conical shape and plastic decoration on the upper part, though changing their foot. It became shorter and more solid, being shaped simultaneously with the upper part. The censers of the second type were also made of fine, well-purified clay and were coated with a layer of diluted fine clay instead of lime-wash, which acquired a light-pink colour after the firing.

Censers of both types have been discovered only in burials. Vessels of the first type were found in the tumular necropolis of Kalvaka near Butovo, together with charred fruits (dates, figs, walnuts, hazelnuts, etc.) and coins from the mid-2nd century.[192]

Censers belonging to the second type have been discovered in the necropolis near the post-office in Butovo. The earliest burials here date from the end of the 2nd century and the latest ones from the 4th century.[193]

Vessels with a lime coating, similar to those of the 1st type (produced in Butovo and Hotnica) were mainly discovered in Northern Bulgaria in burials dated from the end of the 1st to the end of the 2nd century,[184] but they were also found to the south of the Balkan Mountains.[195] Two small censers, similar to those of the second type, originated from a burial together with a coin from Caracalla (211—217 A.D.), discovered near the village of Hadžidimitrovo, district of Veliko Tărnoo.[196]

The considered vessels of the two types are widespread in the West Roman provinces and the provinces along the middle and lower courses of the Danube.[197] They have been discovered in burials from the 1st to the 4th centuries and are specified as vessels for censing (*Raucherschalen*), as well as for food, fruit and wine, used in the funeral rite.[198]

12. Clay Objects Used in Building

Here belongs the spindle-shaped earthenware with massive walls, roughly shaped solid foot, cut off by means of a thread and a comparatively more carefully smoothed rims. They are made of fine clay, not glazed. Their production has been established for the present only in the ceramic near Pavlikeni and Butovo.

Part of these objects were used in building. They were walled-in and later an iron nail was inserted into them, holding the clay tubula; another part was used as stoppers and the third one is related to the funerary ceremony, if we judge by the presence of some of these objects in the ancient burials.[199]

II. Greyish-Black Earthenware Used in Everyday Life

Earthenware of this group is among the most frequent finds on all sites within the Roman Empire. The name derives from the greyish-black colour obtained after their firing. This type of earthenware has usually been neglected by the scholars who, at best, confine themselves to a most general description, without dwelling on separate types and variants. Only in the last years it has found its due place in the works of a number of archaeologists. The work of the Romanian scholar G. Popilian, who explored the ceramics from Oltenia,[200], deserves special attention.

Greyish-black ceramics are to be found in large quantities in Bulgaria also: in ruins of ancient towns, settlements and necropolises from the first years of the Roman rule up to the Late Antiquity. The first attempt to explore it was

made by Cvetana Dremsizova who wrote about the greyish-black ceramics from the Roman villa near the village ot Madara.[201] Later, B. Bötger and G. Bokisch studied the Roman ceramics from *Castellum Iatrus* near Krivina, in which they also included pottery of a greyish-black colour.[202]

Greyish-black ceramics are in the first place kitchen pottery,[203] closely related to the everyday life of people, as well as to their day-to-day concerns for preparing food. Its basic function posed two very important requirements to the potter producing such earthenware: to resist sharp thermal fluctuations and to hold liquids. In order to meet those two requirements, a special technology was needed, which had to be both quite simple and with a marked economic effect, i. e. to provide products for the market quickly and cheaply.

The greyish-black ceramics, as well as every other type, were made of well purified clay, with added sand and quartziferous grains, 5—7 mm in size, in some of the earthenware, resulting in a rough and uneven surface. The additives served as reinforcement in the clay 'dough' facilitating the process of firing and thus reducing the debris. This pottery was baked at a lower temperature — up to 650°C, in ordinary two-chamber kilns, where it was not necessary to observe the conditions required for the firing of fine ware. Still, this temperature was high enough to burn down all organic components in the clay. The greyish-black pottery was highly porous and this property is contrary to the second requirement: holding of liquids. The potters tried to eliminate porosity by supercharging the wessel walls with carbon. This was achieved already in the pottery kiln before taking out the earthenware, when timber was put into the kiln, discharging heavily smoking substances, which penetrated deep into the wall and filled in the pores.[204]

If the technological conditions were observed correctly and properly, the whole outer surface of the earthenware acquired a uniform black glossy colour. However, these conditions were usually disregarded one way or another: either the timber was not fed into the kiln in the exact quantity required, or the kiln was not closed tightly enough, which resulted in irregular colouring. The earthenware arranged near the vents for the smoke usually acquired light-brown or dark spots, and the rest — a smoky-mat colour.

In contrast to the fine ceramics, greyish-black earthenware is not so varied in shape. The pottery is classified into several types. The cone and the cylinder, used in combination or separately, are the basic elements of the body. The bottoms are flat, cut off by means of a thread. They are very rarely additionally smoothed on the potter's wheel or have small foot-rings added. The rim is solid, slightly out-turned to fit the lid whose edge is in-turned.

The general impression is that the vessels of greayish-black ceramics imitate the shape of the fine ceramics known in Roman times, although the imitation is rather rough. At the same time, one also notices attempts to copy metal vessels,[205] as well as some shapes typical of the local hand-made Thracian ceramics, which existed during the Roman rule as well, i. e. tall cylindrical urns and conical cups.[206]

Usually the earthenware of greyish-black ceramics has no decoration, and if any — it consists either of incised concentric lines drawn on the upper part of the vessel, or of wide and shallow furrows on the entire outer surface. Under the influence of the fine ceramics, in some of the vessels the decoration is made with a cogwheel.

As a result of his long observations on the greyish-black pottery, the author came to the conclusion that it was rather rough and plain in the first

years of Roman rule. Later its production attracted greater attention, the earthenware became more thin-walled, with mouths of sophisticated shapes and additionally smoothed bottoms, because fine-grained sand was added to the clay. The author finds the only explanation for the improved production quiality in the fact that after the disappearance of the fine ceramics which played an important role in the everyday life of people, the deficiency was compensated for by the ordinary greyish-black ware.

1. Dishes

Greyish-black pottery was produced in the ceramic centres near Hotnica, Pavlikeni and Butovo as an imitation of the vessels of fine ceramics. The variety is not great and the pottery lacks any details or additional decoration. Compared with the rest of the material, this type of production represents a small part of the general ceramic production.

According to their shape, dishes are classified in the following types:

Type 1

(Table XLII, 1)

Dishes with a broad bottom smoothly cut off, and walls gently going upwards, then curving inwards and ending with a rounded rim. They reach up to 3.4 cm in height and 21.7 cm in diameter. This type of dish is an exact copy of the dishes of type 9, made of fine clay, and it is often found in the Danubian Roman provinces.[207]

Variant **a** (Table XLII, 2). Dishes produced in Hotnica, with a smoothly cut off bottom. The walls are first bent outwards, then they become narrower inwards, widening again and ending with an in-folded rim. They are found in large numbers on the territory of Nicopolis ad Istrum and Novae,[208] with parallels in the Danubian provinces.[209]

Type 2

(Table XLII, 3)

Dishes with a conical lower part and a cylindrical upper one, their bottom being flat and additionally smoothed. The production of this type has been known for the present only from the centre near Hotnica, entirely imitating the shape of the deep dishes of fine ceramics, type 8.

Type 3

(Table XLII, 4)

Deep conical dishes having a flat bottom cut off with a thread, the rim being out-turned and decorated with incised parallel lines. This type was also created as an imitation of the fine ceramics. It was produced in Hotnica and Butovo.

Variant **a** (Table XLII, 5). Deep semiconical dishes with evenly cut off bottom, thickened and out-turned rim. They are rather large in size, up to 29 cm in diameter. These dishes functioned as the modern tins. They were used in the ceramic centre near Hotnica[210] and they also imitated the shape of the fine earthenware. Similar vessels have been discovered in Madara,[211] on the territory along the middle course of the Danube[212] and the West Roman provinces.[213]

2. Bowls

(Table XLII, 6)

One of the most widespread vessels produced in Hotnica and Pavlikeni were the deep bowls with an evenly cut off bottom and a biconical body ending with a wide, almost horizontal rim, slightly out-turned. Several concentric lines are engraved on its most bulging part. The bowls are made of clay, containing large-grained grit, and are additionally smoked. Their diameter is up to 23 cm, height — 10 cm.

This type of vessels belongs to the kitchenware, but they were sometimes used as urns as well. An entirely similar vessel to the bowls produced in Hotnica and Pavlikeni was used as urn, discovered together with a coin of Emperor Traianus in the necropolis of Kalvaka.

Similar vessels are often discovered on sites in Northern Bulgaria,[214] as well as in the Danubian and West Roman provinces, where they are generally dated to the end of the ist and the mid-3rd century.[215]

3. Pots

Ceramic pots are referred to the basic production of the centre near Hotnica. All pots discovered so far are made of clay containing sand. Prevalent are the tall slender vessels with a thickened rim, slightly out-turned and made in such a way that it could be covered by the lid edge, which is also curved.

The greater part of the pots are rough, their bottom being cut off by means of a thread with no additional smoothing. However, there are well-made pots of clay containing less and smaller sand particles, subjected to additional smoothing of the bottom and the outer surface.

This type of earthenware lacks any decoration, excert the single or double incised lines on the upper part of some pots, as well as the deep and shallow furrows on the entire outer surface of the vessel. As regards shape, we cannot find in them any direct imitation of imported models, but rather a revival of earlier hand-made forms, later improved on the potter's wheel.

The production of ceramic pots was mastered in the centres near Pavlikeni and Butovo as well. One could observe in them the same shapes, made, however, with a greater skill and diligence as regards clay processing and modelling of the production.

The rich collection of earthenware of this type comprises pots with no handles, as well as one-handled and two-handled pots. Depending on this, the following types are distinguished:

Type 1

(Table XLIII, 1)

Pots with no handles, having a tall slender body and evenly cut-off bottom. The relatively large mouth is delimited by a thickened rim, slightly out-turned and adjusted so as to be hidden under the folded edge of the lid. These are thin-walled pots, although the clay contains large quartziferous grit, and are additionally smoked, resulting in a glossy black colour. The carbon pilings burn down at a higher temperature and the earthenware acquires a greyish-black colour, varying at places to light-brown. Their height varies from 25 to 55 cm. Some of them have protuberances, probably imitating appliquéed flat handles.

The pots of this type are dated to the first decades of the 2nd up to the middle of the 4th century. The closest parallels are the finds from Prisovo,[216] Novae[217] and Nicopolis ad Istrum.[218] This type is quite often discovered in ancient sites along the lower[219] and middle course of the Danube[220] and in the West Roman provinces.[221]

Type 2

One-handled pots. They differ from the pots with no handles in that the rim, which is also thickened and slightly out-turned, is now adjusted for lids with a straight edge. The small strap-handle is below the mouth. This type of earthenware is rather thick-walled and roughly made, reaching a height of 17—38 cm.

Variant **a** (Table XLIII, 2). In the ancient ceramic centre near Hotnica, one-handled pots with a rounded, almost spherical body were also made. They were modelled from better purified clay and their entire outer surface was covered with wide incised furrows. They were not smoked much, as a result of which they are brown in colour.

Variant **b** (Table XLIII, 3). One small pot discovered in Butovo, with biconical body and a rim slightly projecting outwards. The bottom is flat, additionally smoothed and better made, with one strap-handle stuck below the mouth. The vessel is made of clay containing fine-grained grit and it is additionally smoked. After the vessel was modelled, the name Aurelius List was scratched below the mouth. The diameter and the height of the vessel are the same — 17×17 cm.

Type 3

(Table XLIII, 4)

Two-handled pots. They are completely similar in shape to the pots described above, the handles being two small ones instead of one. There is no considerable difference in size, the height being between 11 and 35 cm.

Their production has been established for the present only in Hotnica and Pavlikeni. They are comparatively more rarely found on ancient sites.[222]

Variant **a** (Table XLIII, 5). Low shallow two-handled pots with a biconical shape were produced in the centre near Pavlikeni. Their bottom is evenly cut off and the rim is out-turned. Their upper part is decorated with wide and shallow furrows.

4. Lids

Almost all earthenware were with lids. They are conical in shape, with a cylindrical handle fixed on top. They were cut off from the potter's wheel by means of a thread. The lids were made of the same clay and additionally smoked. There are two types of lids, depending on the earthenware they had been designed for. The first type (Table XLIII, 6. 7; Table XLIV, 1—3) has a straight edge and is adjusted to go into a rim which projects outwards in the case of pots with handles and the deep bowls. The second type has an in-turned edge, designed to cover the rounded rim of the pots without handles (Table XLIV, 4). The sizes of the lids are rather varied, with prevalence of the small ones, their diameter being from 14 to 22 cm and the height from 6 to 9 cm. There are lids for large vessels reaching up to 40 cm in diameter. They have been discovered in large numbers, in all ancient sites on the territory of Nicopolis ad Istrum.[223] Similar lids are also to be found on other sites, both in present-day Bulgaria[224] and in the other Roman provinces.[225]

5. *Oenochoe* from Butovo

(Table XLIV, 5)

Among the varied ceramic material of greyish-black ceramics, there are also vessels with a tall narrow neck ending with a widened trifoil mouth.

Especially typical is a vessel discovered in the ceramic centre in Butovo, its height being 25 cm and its diameter — 17.7 cm. The bottom is evenly cut off, the body is biconical, smoothly turning into a narrow neck and a broad mouth, pinched with fingers. One handle, elliptical in cross-section, is attached to the neck and the middle part of the body.

This type of earthenware is an exact copy of the copper and bronze vessels produced in the same era. The imitation of the metal form is to be felt even in the sharply cut-off line of the vessel. Similar bronze vessels have been discovered in burials in tumulus No. 6 in Čatalka,[226] and copper vessels in the neighbourhood of Stara Zagora,[227] which have been dated to the end of the 1st and up to the beginning of the 2nd century.

6. Earthenware for Religious Purposes

A. Three-Legged Earthenware

(Table XLIV, 6)

An interesting three-legged vessel originated from the ceramic centre near Hotnica. It is wheel-made of clay mixed with fine-grained grit and is additionally smoked. It is bell-shaped, the bottom is flat and additionally smoothed, the rim is rounded and slightly out-turned. Three cylindical hand-made legs are additionally stuck to the lower part. Other two cylindrical legs, broken off from a similar vessel, have been discovered not far from this find.

In comparison with the other earthenware discovered here, this one differs in its fine workmanship and better clay quality. Together with the legs it reaches a height of 25.5 cm (18.5 cm without the legs), being 25 cm in diameter.

This vessel is a rare phenomenon not only for the ceramic centre near Hotnica, but for the Bulgarian lands in general. Similar three-legged vessels are more often to be found in the West Roman provinces,[228] in the lands along the middle course of the Danube (Aquincum,[229] Emona,[230] Singidunum[231]). They were placed right into the hearth, the legs replacing the iron tripod, to be used mainly for religious purposes.[232]

B. *Kernos*

(Table XLIV, 7)

A deep dish with an evenly cut-off bottom and greatly inclined, almost vertical walls originated from the necropolis discovered between the present-day ceramic plant and the courtyard of the cooperative farm in Butovo. Two conical earthenware cups, made on the potter's wheel in advance, were additionally stuck onto the thickened slightly out-turned rim.

The vessel is made of clay containing sand grains and is additionally smoked. The inner part of the bottom is decorated with a spiral of short lines drawn with a cogwheel. The vessel is 19.8 cm in diameter, the whole height being 6.8 cm (3.5 cm without the cups).

Fragments of a similar type of vessel are discovered near Hotnica and Butovo, where their production started. Entirely similar finds are usually to be found either as grave offerings or in the lodgings. They most probably had a religious purpose.[233] These vessels have been discovered together with coins from 2nd-3rd century.

7. Earthenware for Food and Liquids

(Table XLV, 1)

These are large vessels with an elongated shape, small bottom and a broad mouth, delimited by a massive rim. They are decorated with relief cord-like

ornaments, drawn at intervals on the outside of the vessel. These vessels reach a height of up to 80 cm and a diameter of up to 60 cm. This is an old Thracian form whose manual production had been replaced by the potter's wheel.

Hand-made earthenware of a similar shape existed as early as the La Tène era.[234]

8. Hand-made Earthenware and Earthenware Manufactured on the Potter's Wheel

As has been pointed out many times, the ceramic centres near Hotnica, Pavlikeni and Butovo were created over the ruins of older Thracian settlements, some of which had not ceased to exist during the Roman era also. Many finds dating from that era have been discovered, including ceramics, which will be the subject of a special exploration.

Only two ceramic forms are included here, whose production started in the newly-created ceramic centres.

One of the vessels is a deep semiconical cup with one or two vertically fixed handles, the other one is a tall cylindrical urn.

Semiconical cups (Table XLV, 4) are discovered in large numbers in the lands along the Lower Danube and mostly in Oltenia.[235] This has provided grounds for the Rumanian scholars to accept that cup as a local Dacian form, created in the last decades B. C. and remaining in everyday use till the 4th century. A.D.

All earthenware cups discovered on Rumanian territory are only hand-made, the cups from the earliest era being decorated with a relief cord-like ornament, which later is either very rare or has disappeared completely.

This type of cups has not merited much attention in Bulgaria, although they are very frequent finds during archeological excavations.[236]

Plenty of cups have been discovered on the territory of Nicopolis ad Istrum.[237]

It seems that the demand for such earthenware had been so great that it became necessary for the local potters to start production on a potter's wheel also. This is a fact which has not been established so far to the north of the Danube. Certainly, the production process was rationalized by the potter's wheel, but, on the other hand, with this the form was simplified and formalized, and some additional details disappeared; mostly the relief cord-like decoration. Their height varies from 6 to 9.6 cm, the diameter from 16 to 24 cm (Table XLV, 5, 6).

The second earthenware found together with the cups considered has semiconical lower part which slightly widens upwards, then gently becomes narrower, ending with a slightly out-turned rim.

This type of earthenware is usually decorated with a plastic cord-like ornament and it was used as urns.[238] (Table XLV, 2).

The same hand-made urns have been discovered in the ceramic centre near Pavlikeni, in the same cultural layer as the fine ceramics.

What is more, two earthenware urns were used as supporting pillars in the small kilns designed for preparing the auxiliary materials in the ceramic production.[239]

The production of this type of earthenware started only in the ceramic centre near Hotnica. A great collection originated from there, consisting of tall

rough wheel-made earthenware with no decoration, reaching a height of up to 20—22 cm and a diameter of up to 11—12.5 cm (Table XLV, 3)

These types suggest that this pottery cannot be attributed to only one ethnic group, because it has been found on a vast territory, athough any particular development was achieved on the territories on both sides of the Lower Danube. The author considers that the influence of the ceramic production from the South had been greater (this is to be noticed in fine ceramics), but he is far from the thought of denying the presence of local production of fine ceramics as well on the territory of present-day Rumania.

The archaeological finds show that a considerable part of the products of these three ceramic centres, together with the articles produced by the West Roman potters, was marketed to the north of the Danube as well. This is very clearly suggested in the study of the ancient ceramics from Oltenia,[240] carried out by G. Popilian, with whom the author had the opportunity to work together on the problems of Roman ceramics from Moesia Inferior and Dacia. In the newly created ceramic centres for production of fine ware in *Provincia Dacia* the conventional forms were imitated. They were adopted from abroad in the ceramic centres of Moesia also, but here these forms were additionally decorated, using various techniques, while this phenomenon is very rarely observed on the earthenware produced in the ceramic centres to the north of the Danube.

The influence of earlier Thracian forms on the new production of these centres is also to be seen, as it has already been pointed out, in the large greyish-black ware used for storing food and liquids.

Everything which has been said so far is in support of the author's statement that the tradition in the pottery production created by the local master-potters did not fade, but continued to exist in the Bulgarian land of today[247] during the Roman rule as well.

III. Chronological and Typological Characteristics

In order to acquire a comprehensive idea of the overall production in the ceramic centres near Hotnica, Pavlikeni and Butovo in a chronological and typological aspect, it would be expedient to add the most characteristic features of the remaining various ceramic products discovered in the Bulgarian lands to the materials already considered. Only the comparison between finds of imported ware and pottery produced in the considered centres (discovered, however, together with ceratain dating materials in the different necropolises and ancient settlements on the territory of Nicopolis ad Istrum) allows us to work out an accurate chronological scheme of the overall production, following the stages of its development and improvement, as well as to reveal the process of substitution of the imported goods by local imitations.

The ceramic production considered in the present study and subjected to the specified method of comparison, has shown that the development of the pottery production in the centres near Hotnica, Pavlikeni and Butovo followed four stages, clearly distinguished by the production itself and exactly dated by a great number of coins discovered during the archaeological excavations.

The first stage coincided with the rule of Emperor Hadrian (117—138 A.D.) and continued to the middle of the 2nd century. The second stage began from the last years of the rule of Emperor Antoninus Pius (138—161 A.D.) and ended towards the last decade of the 2nd century.

The third stage is dated to the rule of the Severi and ended one decade after their domination, i. e. about the middle of the 3rd century.

The fourth stage included the second half of the 3rd century.

The ceramic centres near Hotnica and Pavlikeni were set up during the first stage, the ancient settlement in Butovo was already in existence and continued to use the necropolis in the area of Kalvaka. Among the prevalent pottery grave offerings there were products of the East Greek ceramic workshops and imitations of the West Roman sigillata workshops. The most frequently occurring grave offerings were flat dishes (Table XXVI, 2); deep cups and bowls, ending with a rim of sophisticated shape and coated with glaze, typical of the pottery from Asia Minor; semispherical bowls and dishes with a side out-turned rim in the form of an arch, similar in shape to the earthenware produced in the West Roman workshops. Their production started in the ceramic centre near Pavlikeni as early as the mid-2nd century (Table XLVI, 2, 3, 5, 6; XLVII, 1, 2).

From the group of large vessels made of fine clay, deep bowls (Table XLVI, 9), discovered together with coins from the rule of Hadrian, are most often to be found in the necropolis of Kalvaka. Towards the middle of the 2nd century their production started in the ceramic centres near Hotnica and Pavlikeni, and a little later in Butovo as well. Actually, this is one of the most widespread types of earthenware in all centres. Varied decoration has been applied upon the upper cylindrical part of the bowls, using all techniques: stamping, squirting, appriquéing, etc.

Deep bowls with embossed decoration, produced in Butovo, are often to be found in Novae, Nicopolis ad Istrum, Succidava and other ancient sites in Northern Bulgaria. Jugs originating from East Greek potter's workshops have been discovered in the ancient necropolis of Kalvaka, together with coins from Antoninus Pius. The production of similar jugs started in the ceramic centre near Pavlikeni as early as the mid-2nd century.

Towards the end of the first stage of the development of the ceramic production, the centres in Hotnica and Pavlikeni started production of censers with a tall cylindrical foot found in large numbers in the necropolis of Kalvaka. Later, censers were also produced in Butovo, the shape being preserved, but using a simplified process. The hollow foot was substituted by a small cylindrical base. This type of earthenware was widespread in the West Roman provinces and on the territories along the lower course of the Danube. For the present it is difficult to find out under whose influence their production had started in these ceramic centres. Similar censers are often to be found on the territory of Nicopolis ad Istrum and Novae. Their presence is less frequently established in Southern Bulgaria.

In connection with the funerary cult, mass production of jugs with a spherical body and a typical double conical mouth started towards the end of the first stage (Table XLIX, 9). This is a type of earthenware frequently found within the whole Roman Empire, especially in its Western provinces and along the Middle and Lower Danube. They are more rarely to be found in Southern Bulgaria. The production of jugs of this type had started initially only in the ceramic centre near Pavlikeni and a little later in Butovo as well; they are to be found in large numbers in burials on the territory of Nicopolis ad Istrum and Novae.

Deep greyish-black earthenware for everyday use were produced during the first stage in Hotnica and Pavlikeni, used as urns in the necropolis of Kalvaka. Mass production of one-handled jugs had started by that time in Hotnica and Pavlikeni, and a litte later in Butovo as well (Tale XLVII, 8, 11).

They are an imitation of the jugs produced by the ceramic centres in Asia Minor, part of them being additionally decorated with Barbotine ornaments. They were marketed on the territory of Nicopolis ad Istrum and Novae. The production of amphora-like earthenware started at the same time in Pavlikeni. These were jugs with a cylindrical neck and a broadened mouth emphasized with a vertical band (Table XLIX, 3).

The production of semiconical cups and tall greyish-black earthenware for everyday use also started towards the end of the first stage near Hotnica and Pavlikeni, imitating the hand-made earthenware cups and stoups (Table L, 7) and found in large numbers to the north of the Danube.

Clay lamps are often to be found in the ancient necropolis of Kalvaka as grave goods. Part of them, discovered in the earlier burials together with coins from Emperor Traianus (98—117 A. D.), belonged to the so-called *'Firmalampen'*, and originated from the Western workshops, another part being undoubtedly of Eastern origin (Table LII, 2).

Towards the end of the first stage the production of lamps started in the ceramic centre near Pavlikeni and a little later in Butovo, using imported clay moulds for the purpose. Thus both imported lamps and lamps produced by the local potters using imported moulds have been discovered in the burials in Kalvaka. Gradually the import of clay lamps and lamp moulds stopped and was subsitituted by locally produced lamps and moulds (Table LII, 1, 3—12).[242]

The second stage of the development of the ceramic centres is related to the final consolidation of ceramic production on the territory of Nicopolis ad Istrum. A ceramic centre was created in Butovo, but it still had limited potentialities. Its production was marketed in the neighbourhood. At the same time, the ceramic centre in Pavlikeni flourished, but towards the 'seventies of the 2nd century it had endured certain cataclysms connected with the invasions of the Costoboci, which had an adverse effect on its further development.

The ceramic centre near Hotnica continued to produce ordinary pottery used in everyday life. A certain improvement was noticed in the quality of production. The earthenware became more thin-walled and the sand grains were finer. Traces of additional smoothing and scrubbing of the bottom on the potter's wheel are seen on some of the vessels.

The imported ceramic material used for cult purposes in the burials in Kalvaka almost disappeared during the second stage. Only earthenware produced in our ceramic centres were found here. These are mainly two-handled krater-like vessels, with a conical lower part and a cylindrical upper one, decorated with incised and relief plant ornaments (Table XLVIII, 9). Produced in the ceramic centre near Pavlikeni, they were used as urns on the territory of Nicopolis ad Istrum and Novae. Jugs with a spherical body and a typical semi-conical neck were produced at the same time. Their production started in Pavlikeni and was also found in burials on the territory of Nicopolis ad Istrum and Novae, together with coins from Marcus Aurelius (161—180 A. D.) (Table XXXIII, 5).

All techniques for applying additional decoration on the wheel-made earthenware were used on a mass scale during this stage: incised ornaments, Barbotine decoration, cogwheel and especially the appliquéed decoration. Appliquéed vessels are typical of the production near Pavlikeni and Butovo, but they were not produced in large numbers in the ceramic centre in Hotnica. The additional decoration was most often applied on the upper cylindrical part of the deep bowls or two-handled krater-like ware, as well as on the flat bottom of the shallow dishes.

Technology of ceramic production was improved in Butovo towards the end of the second stage. Side by side with the small two-chambered round kilns, there appeared large rectangular ones, their grates being supported by two pillars. This increased the production which gradually gained reputation on the markets in Novae, Succidava and other urban centres along the Lower Danube. The production of deep bowls, cups, one- or two-handled jugs continued: they became more thin-walled and their glaze was of better quality. An improvement is noticed in the ceramic production itself. Additional processing of the vessels on the potter's wheel was used more often. Decoration became more varied, the Barbotine technique being preferred to older techniques. The small one- or two-handled vessels, designed for religious purposes, were mainly decorated with ivy-leaves and vine-twigs, the former being most frequent on the territory of Nicopolis ad Istrum, Novae, Succidava, etc. (Table XLVIII, 5, 6, 8, 12).

Towards the end of the second stage, mass production started of clay lamps using moulds made by the craftsmen themselves. The models for the clay moulds were wheel-made and additionally decorated by means of various tools (Table LII, 10).

The third stage of development of the ceramic centres generally included the rule of the Severi and was related to the highest achievements in pottery production in Butovo. At the same time, the ceramic centres near Hotnica and Pavlikeni continued to function. The centre near Hotnica still produced earthenware used in everyday life, for the needs of those working in the stone quarries, for the neighbouring settlements, as well as fine ceramics, although the latter were inferior to the fine earthenware produced in Nicopolis ad Istrum and did not compete successfully on its market.

The ceramic centre in Pavlikeni also produced greyish-black ware for everyday use. Apparently the old claftsmen had thus found a way to challenge the competition of the ceramic centre in Butovo whose basic production consisted of fine ceramics.

The production in Butovo expanded and all existing techniques for applying additional decoration were being used. However, the craftsmen definitely preferred the Barbotine technique and the cogwheel. Stylized ivy-leaves and vine-twigs were still squirted on the earthenware, and successfully imitated pine-cone scales also appeared, used separately or in combination with other ornaments (Table XLVIII, 6, 8).

The cogwheel which had been used quite sparingly until then for drawing narrow stripes of short lines arranged crosswise, began to be used quite often, the short lines arranged crosswise occupying both the outer and the inner side of many vessels. Relief ornaments were also appliquéed, made in advance in single clay moulds. This type of decoration became more varied. Side by side with the erotic scenes and the image of Dionysus, other representatives of the Greek-Roman pantheon also appeared: Zeus, Hermes, Artemis, Kybele, Orpheus, etc. (Table XXIV, 1—7).

During the third stage the necropolis near the present-day post office in Butovo began to be used, in which ceramic burial finds have been discovered, produced exclusively in this ceramic centre.

During the third stage the centres in Hotnica, Pavlikeni and Butovo started production of semiconical earthenware, the walls of which were radially pierced with holes. This type of earthenware was designed for domestic censers. This is a local form, unknown in the other Eastern and Western production centres (Table L, 4).

Meanwhile, only Butovo started to produce large shallow dishes with sophisticatedly shaped rim, on which decorative handles had been appliquéed. These dishes were found in Novae, as well as in the ancient sites around Nicopolis ad Istrum. They are an imitation of earlier forms from Asia Minor (Table XXVIII, 1, 2, 3).

At the beginning of the 3rd century the ceramic centre in Butovo started production of earthenware trays for religious purposes, made in single clay moulds, modelled by the craftsman himself. The rim and the handles were decorated with relief plant and animal ornaments. Round, elliptical and rectangular, they are a barbarized imitation of the expensive metal vessels with embossed decoration rather than an imitation of the West Roman terra sigillata. Exact parallels to our trays have been discovered in Novae,[243] Succidava[244] and other towns along the Danubian border (*limes*).[245] To the east they have been traced as far as the village of Gorsko Ablanovo, district of Tăgrovište[246] (Table LI, 1, 2, 3).

During the third stage the centre in Butovo started mass production of terracotta and votive tablets made by hand in clay moulds. They copied some monument or imported marble statuettes. Prevalent among the statuettes are figures of Venus, busts of soldiers, figures of foals, kids, etc., the votive tablets bearing the images of Dionysus, Heracles, Zeus, etc.[247] (Table LI, 4, 5, 7).

For the requirements of conctruction, the centre in Butovo started producing special cylindrical objects used in the sophisticated vaulted constructions and tubulae, designed for the heating systems (Table XLI, 1—6).

The fourth stage is related to the invasions of the Goths which did not interrupt life in the ceramic centre in Butovo, but nevertheless dealt a serious blow to it. Production continued, though on a more limited scale. The products became coarser, the glaze lost its quality and turned into a dark-brown turbid mass. The earthenware was no longer subjected to additional processing.

The ceramic centre in Pavlikeni stopped its production.

The ceramic centre near Hotnica also restricted to a minimum the production of pottery for everyday use.

The attempt of the potters from Hotnica to adopt the production of fine ceramics remained a sporadic phenomenon — a moment of its development.

It is evident from what has been set forth so far that the ceramic centres near Hotnica, Pavlikeni and Butovo started to manifest an activity as late as the second half of the 2nd century, reaching their culmination by the beginning and in the first three decades of the 3rd century, after which they gradually began to decline and stopped functioning one after the other in the course of less than 70 years.

Thus the situation described fully corresponds to the economic development in the area between the Danube and the Balkan Mountains during the 2nd- 3rd centuries.

Towards the end of the 2nd century the ceramic centres near Pavlikeni and especially in Butovo turned into large-scale producers of Roman provincial ceramics, which gradually established itself on near and distant markets in Moesia and Dacia, whereas Hotnica remained a small-scale producer of greyish-black ceramics for everyday use for the requirements of the neighbouring populace.

The production of Butovo was in great demand in Novae. These ancient settlements were in close economic relations, which are evidenced not only archaeologically but in epigraphic records as well. The production of Butovo is

quite often to be found along the Lower Danube from Succidava to Transmarisca. Earthenware from Butovo is comparatively more rarely found in the eastern half of the territory of Nicopolis ad Istrum, as well as in the town itself. Most probably the reason for this should be sought in the greater initiative and competitive power of the local craftsmen.

The production of Butovo has not been found in Thrace. Other earthenware of a similar shape has been found there, altogether different in the manner of execution and clay composition. Most of the vessels lacked additional stylized decoration. If there was decoration, it consisted of incised stylized geometrical and plant ornaments. It is obvious that the pottery south of the Balkan Mountains was supplied from the Eastern workshops, as well as from local centres, created later and substituting the import by local imitations. Such centres had existed near Cabyle and probably near other urban centres as well.

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[119]. ГАЙДУКЕВИЧ В. Ф., 19 1952 рис. 161, 169—169
[120]. ВЕЛКОВ Ив., 1937, 117 сл., note 2; 1938, 260—261, obr. 6869; БОТУШАРОВА Л., 1950, 106, обр. 13
[121]. Unpublished materials from Novae
[122]. POPILIAN Gh., Op. cit., Pl. XLI, tip. 1 (418—435)
[123]. POCZY K. Sz. 1956, T. VIII. 9
[124]. GOSE E., Op. cit., T. 30/365
[125]. POPILIAN Gh., Op. cit., Pl. XLIX, 521—522
[126]. GOSE E., Op. cit., T. 30/367
[127]. СУЛТОВ Б., 1968, 43 сл., T. II/2 и 5
[128]. ВЪЛОВ В., 1965, 29, обр. 7
[129]. ДЖОНОВА Д., 1962, 30 сл., обр. 7а, б и 10 а,б (dated in general from the 2nd to the 4th century); БАЦОВА Е., 1964, 55 сл. обр. 10б; ВЕЛКОВ Ив., 1925, 250, обр. 65; ДЕТЕВ П., 1971, фиг. 16
[130]. БОТУШАРОВА Л., 1956, 121—123, T. I/2а, б, в и III/3
[131]. POPILIAN Gh., Op. cit., Pl. XLVII, tip. 7 (497—508)
[132]. GOSE E., Op. cit., T. 31/373
[133]. IBIDEM, T. 34/395
[134]. СУЛТОВ Б., 1964, 55, обр. 7д
[135]. Unpublished materials from Novae
[136]. ДРЕМСИЗОВА-НЕЛЧИНОВА Цв. и Ив. БАЛКАНСКИ, Цит. съч., 58, обр. 4/1
[137]. Similar bronze vessels were found in some interments in Tumulus No. 6 in Čatalka near Stara Zagora, as well as in its environs. Cf. also НИКОЛОВ Д. и Хр. БУЮКЛИЕВ, Op. cit., 21, обр. 28а, б, в
[138]. Unpublished materials from the District Historical Museum in Veliko Tărnovo
[139]. Unpublished materials from Novae
[140]. ЯВАШОВ Ан., 1930, 55 сл., фиг. 49, 2 и 3 фиг. 50, 1
[141]. ТОНЧЕВА Г., Op. cit., 58, обр. 11а
[142]. ГЕТОВ Л., 1969, 41, обр. 11а
[143]. ПАК ТАМ, 44, обр. 19
[144]. БАЦОВА-КОСТОВА Е., 1970, 27, обр. 10
[145]. БУЮКЛИЕВ Хр., 1962а, 50—51, обр. 4б и 54, обр. 14а
[146]. GOSE E., Op. cit., T. 38/413
[147]. СУЛТОВ Б., 1968, 41 сл., T. I
[148]. More than fifty amphora-like, two-handled small vessels come from the necropolis of Novae, lying south, west and east of the town, as well as from its more distant territories. In general, they are dated from the end of the 2nd to the mid-4th century. A significant part of these finds was made in the Butovo workshops, while the rest is the product of some other craftsmen — Unpublished materials from Novae. Cf. also ВЪЛОВ В., 1965, 29, обр. 7
[149]. ВЕЛКОВ Ив., 1940-42, 214
[150]. The author has had the opportunity to get acquainted with most of the ceramic material found on the territory of Succidava and Romula. Among the other finds there are some made in the Butovo workshops.
[151]. Unpublished materials from the District Historical Museum in Veliko Tărnovo.
[152]. СУЛТОВ Б., 1968, 48—49
[153]. МИКОВ В., Op. cit., 116, обр. 103а
[154]. БОТУШАРОВА Л., 1956, 122, табл. IV, 1 и V, 7
[155]. АЛАДЖОВ Д., 1965, 95, обр. 15/6 и Т. А. III, 4/1
[156]. БУЮКЛИЕВ Хр., 1962а, 54, обр. 14
[157]. BENEA D., 1977, 161—168
[158]. KUZSINSZKY B., Op. cit., 218—245, fig. 231—249
[159]. VERTET H., 1969, 124—126
[160]. LOESCHKE S., Op. cit., 385 ff.
[161]. ВЕЛКОВ Ив. Хр. М. ДАНОВ, 1938, 446—447, обр. 243
[162]. Unpublished materials from archaeological excavations

[163]. БАЛАБАНОВ П., 1979, 24—27. обр. 8
[164]. БУЮКЛИЕВ Хр., 1973, 42 обр. 14; 1962а. 52, обр. 8б; ГЕТОВ Л., Op. cit., 42, сбр. 13 и 44, обр. 18
[165]. MAJEWSKI K. et. al., 1964, fig. 78
[166]. POPILIAN Gh., Op. cit., 92, Nos. 399—407
[167]. BOJOVIĆ Dr., Op. cit., T. XXXV/317
[168]. KNIPOWITSCH T., Op. cit., T. III/39
[169]. БУЮКЛИЕВ Хр., 1962а, обр. 11б и 12
[170]. НИКОЛОВ Д. и Хр. БУЮКЛИЕВ, Op. cit., 1967, 14, обр. 11б
[171]. KNIPOWITSCH T., Op. cit., T. III/37
[172]. БУЮКЛИЕВ Хр., 1962а, обр. 2 и 6а, и 8а; 1973, обр. 14
[173]. ДИМИТРОВ Д. П., 1931-34, 84, обр. 15
[174]. POPILIAN Gh., Op. cit., 108, tip. 1, Pl. LVIII (685—687)
[175]. КНИПОВИЧ, Т. Op. cit., 304, тип 16 /М/, рис. 5, 1
[176]. HAYES J. W. 1973, Pl. 80/240
[177]. СУЛТОВ В., 1964, 54, обр. 9в
[178]. Unpublished materials;
[179]. Unpublished materials for the archaeological map of the District of Veliko Tărnovo
[180]. PÓCZY K. Sz., Op. cit., T. X, 1—5
[181]. POPILIAN Gh., Op. cit., 109, Nos. 698—699
[182]. Unpublished materials; Cf. also ДИМИТРОВ Д. П. et al., 1964, 231, рис. 19
[183]. GOSE E., Op. cit., T. 58/357—358; POPILIAN Gh., Op. cit., 746
[184]. СТЕФАНОВ Ст., 1928-29, 324, обр. 188, 7
[185]. POPILIAN Gh., Op. cit., 125—126, Pl. LXXI, 882
[186]. СУЛТОВ Б., Op. cit., 1968, 55, обр. 9г
[187]. Unpublished materials from archaeological surveys
[188]. ИВАНОВ Й., Op. cit., 188, сл., обр. 52 и 53
[189]. ГЕРАСИМОВ Т., Annual report on the archaeological exploration in the District of Pazardžik, presented at the 6th Annual Conference of the Institute of Archaeology in 1960
[190]. Cf. hand-made and wheel-made vessels in the text
[191]. Production of this type of ware has not been established yet for the centres near Hotnica and Pavlikeni
[192]. Unpublished materials from the District Historical Museum in Veliko Tărnovo
[193]. СУЛТОВ Б., 1972, 179, сл., обр. 3, 4 и 5
[194]. ВЪЛОВ В., Op. cit., 33, обр.10б; a similar vessel, found in Gigen village (=the ancient Oescus) is now in the District Historical Museum in Pleven
[195]. According to the information, kindly given by our colleague H. Bujukliev, similar vessels are found in Augusta Traiana and are now kept in the District Historical muzeum in Stara Zagora
[196]. СУЛТОВ Б., 1968, 44—45. T. II, 9, 10
[197] GAVELLE R., 1952, 17 ff.; KUZSINSZKY B., Op., cit., fig. 339; VOJOVIĆ Dr., cit., T. LIX, L (525—538); POPILIAN Gh., Op., cit., Pl. LXI, LXII (748—760)
[198]. Rarely the bottom of some vessels is pierced with holes for ventilation. A similar vessel is found in Nicopolis ad Istrum — Unpublished materials.
[199] БУЮКЛИЕВ Хр., 1962б, обр. 3; MAJEWSKI K. et al., 1962, 108, rys. 97; KUZSINSZKY B., Op. cit., 344, fig. 353
[200]. POPILIAN Gh., Op. cit.,
[201]. ДРЕМСИЗОВА-НЕЛЧИНОВА Цв., 1971, 21—30
[202]. БЬОТГЕР Б., 1978, 26—32
[203]. HILGERS W., 1969
[204]. PICON M., 1973, 55 sqq.
[205]. SULTOV B., 1980, 384, fig. 11c
[206]. IBIDEM, fig. 11d
[207]. PÓCZY K. Sz., Op. cit., T. IV, 18; BOJOVIĆ Dr., Op. cit., T. XLIII, 395—397; POPILIAN Gh., Op. cit., Pl. LXIX (848—849)
[208]. СУЛТОВ Б., 1964, 53—54, обр. 7, 3; Unpublished materials from the District Historical museum in Veliko Tărnovo.
[209]. POPILIAN Gh., Op. cit., tip. 5 (850—855), Pl. LXIX
[210]. Cf. Tabl. XXVIII, 6
[211]. ДРЕМСИЗОВА-НЕЛЧИНОВА Цв., Op. cit., 22—24, обр. 2, 1
[212]. PÓCZY K. Sz. Op. cit., T. IV, 19
[213]. GOSE E., Op., cit., T. 4./482
[214]. ДИМИТРОВ Д. П. et al., 1964, 229, рис. 17; ДРЕМСИЗОВА-НЕЛЧИНОВА Цв., Op. cit., 22—24, обр. 1,1 и 2,6

[215]. GOSE, E., Op. cit., T. 48/501: PÓCZY K. Sz., Op. cit., T. IV, 1; POPILIAN Gh., Op. cit., Pl. LXV (787-792)

[216]. СУЛТОВ Б., 1964, обр. 7и.

[217]. Unpublished materials from archaeological excavations.

[218]. Unpublished materials from archaeological excavations

[219]. POPILIAN Gh., Op. cit., tip 4 (344—346), Pl. XXXV

[220]. PÓCZY K. Sz., Op., cit., T. V, 11

[221]. GOSE E., Op. cit., T. 53/532

[222]. Author's personal observations

[223]. СУЛТОВ Б., 1964, 54, обр. 9а as well as unpublished materials for the archaeological map of the District of Veliko Tărnovo

[224]. ДРЕМСИЗОВА-НЕЛЧИНОВА Цв., Op. cit., обр. 3, 14, 15

[225]. GOSE E., Op. cit., T. 57/555—565; BOJOVIĆ Dr., Op. cit., T. LXXI, 621—636; POPILIAN Gh., Op. cit., Nos. 898—936

[226]. НИКОЛОВ Д., и Хр. БУЮКЛИЕВ, 1967, обр. 9а и 25в

[227]. БУЮКЛИЕВ Хр. 1973, 42, обр. 15

[228]. HILGERS W., Op. cit., 82, fig. 74, 75

[229]. PÓCZY K. Sz. Op. cit., Abb. 10/7,8

[230]. PLESNIČAR-GEC L., Op. cit., T. 7 (19—21)

[231]. BOJOVIĆ Dr., Op. cit., T. III, 470

[232]. Cf. supra note 228

[233]. ЯВАШОВ Ан., Op. cit., 56, фиг. 50,2; ПЕТРОВ Т., 1950, 251, обр. 188; ВЕЛКОВ Ив., 1940-42, 214—215, обр. 306; ГЕОРГИЕВА С., 1952, обр. 261; МАШОВ Сп., 1975, 44—46, обр. 7 а-б; ОВЧАРОВ Д., 1979, 42, обр. 11б.

[234]. In the ceramic centre near Hotnica hand-made vessels with a cable-like ornament were found.

[235]. CRIŞAN I. H. 1969, 153—161, Pl. XLVI—XLVII, fig. 66—68; POPILIAN Gh., Op. cit., 133, Nos. 937—942; BABEŞ M., 1980, 7—23

[236]. Four cups are kept in the Museum in Svištov. They have been found during archaeological excavations of the local *kale* (fortress), near the present-day town, as well as in Novae. Only one of these has been published. One small cup has been found on the Carevec hill in Veliko Tărnovo — unpublished. Cf. also ТОНЧЕВА Г., 1962, 56—57, обр. 7а; ОВЧАРОВ Д., 1965, 35—36, обр. 3

[237]. Unpublished materials

[238]. In the stores of the Museum in Svištov some intact as well as fragmentary vessels of this type are kept, discovered during archaeological explorations of the fortress and on the site of Novae — unpublished.

[239]. BLÜMNER H., 1879, 95—96, Fig. 16, 17

[240]. POPILIAN Gh., Op. cit., 23, ff. 56ff.

[241]. SULTOV B., 1984, 184—190

[242]. Unpublished materials;

[243]. ДИМИТРОВ Д. П. et al., 1965, 43 ff., рис. 15; IDEM, 1974, 168—169, обр. 35 as well as unpublished materials from Novae.

[244]. POPILIAN Gh., Op. cit., 23 sqq.

[245]. Fragments of similar ware are found in the ancient Transmarisca, near the present-day town of Tutrakan. Unpublished materials. The author is obliged to his colleaque Račo Zmeev for this information.

[246]. ОВЧАРОВ Д., 1972, 47, обр. 4,5

[247]. Unpublished materials

CONCLUSION

The main task set in the present dissertation work was to explore the ceramic production on the territory of Nicopolis ad Istrum on the basis of complex archaeological explorations in the ceramic centres near Hotnica, Pavlikeni and Butovo, discovered by the author during the last two decades. Research has proved that the appearance of the ceramic production was closely connected with the setting up of Nicopolis ad Istrum and coincided with the general economic upsurge in the area between the Danube and the Balkan Mountains, which set in after of the wars of Emperor Traianus against the Daci at the beginning of the 2nd century and continued for more than 150 years.

The three ceramic centres were built over the ruins of older Thracian settlements, some of which continued to exist after the coming of the Romans, expanding into bigger settlements. This is confirmed by the concrete historical material discovered in the older necropolises of Pavlikeni and Butovo, which had still been used by the native Thracian populace after the establishment of Roman rule.

The location of the ceramic centres was propitiously chosen in the vicinity of large consumer settlements, near important roads and in the presence of all necessary conditions for creating a reliable production, i. e. water sources, deposits of good-quality clay and forest massifs.

The three ceramic centres did not function simultaneously. The centre near Hotnica was established first, prompted by the growing demands for pottery used in everyday life, which was necessary for those working in the quarries of Nicopolis ad Istrum. Meanwhile the ceramic centre near Pavlikeni was also created on the site of the villa of a rich landowner. Limited production of fine earthenware started there as an imitation of the ceramic production imported at the time from other workshops. Most probably the fine ceramics quickly gained popularity, which necessitated the search for new methods to facilitate its mass production. Attention was directed towards the rich deposits of clay near Butovo, where a big ancient settlement — Emporium Piritensium — had already existed. Separate potters' quarters were set apart in its southern outskirts, some of which (later destroyed) were included in the settlement after its new expansion.

On the basis of the archaeological exploration and the investigation of the available comparative material, the intricate mechanism and the technology and organization of ceramic production were clarified in the discovered centres, with no claim that the problems have been completely exhausted.

Many potter's workshops, together with the tools of the ancient craftsmen, were discovered during the long archaeological excavations. The workshops were usually small buildings (consisting of one to three rooms), detached or forming a part of the poters' lodgings. The space which seems small at first sight was used very rationally. The potter's wheel was mounted in the most suitable place in the southern part of the workshop, the shelves for drying the ceramic production were arranged along the walls. The roofs were supplied with special ventilating facilites. The presence of a pottery kiln for firing the new production in the workshop is not a rare phenomenon.

Archaeological explorations revealed the structure of the pottery kilns in detail, as well as the stages of their construction and improvement; they

supplied the basis for the typolody of the different kilns proposed here. According to it, the basic structure of the pottery kilns is the same: they are two-chambered and do not differ from other kilns known in Antiquity. Most preferred kilns were the small ones, having a round grate and one supporting pillar, because of their easy maintenance, large capacity and more adequate use of the thermal effects. However, kilns with a round grate are to be found, typical only of the Roman provinces of Moesia Inferior and Thracia, as well as kilns with a rectangular grate and two supporting pillars which, according to the author, had been created under the influence from Asia Minor.

Out of the 102 kilns discovered, 86 have one supporting pillar, four have one tongue-shaped pillar and five have two supporting pillars.

It was established that the kilns had not functioned simultaneously; earlier kilns have been found, destroyed already in ancient times; some of them were turned into garbage pits, new ones being constructed over others. The kilns with a tongue-shaped supporting pillar are the earliest and therefore imperfect ones, the latest being the kilns with two supporting pillars. The latter have been found mainly in Butovo and are connected with the improvement in pottery production, caused by the growing demand for cheaper production, accessible to the populace.

One to three kilns were usually used in the production of one workshop. As a rule, several kilns with different capacities were grouped around a common working platform. These kilns served for firing earthenware of different sizes and amounts. This testifies to a rational use of the labour and to a striving for better organization.

Through the brief survey of the technology of pottery production, an attempt was made to clarify fully some already known or poorly studied aspects of the intricate technological process, connected with the additional processing and decoration of the earthenware, as well as the manner of arrangement of the raw production for firing in the kiln.

The ceramic material and its archaeological context of discovery also give grounds for the statement that a specialized production of terracotta, lamps and trays existed in many potter's workshops, as well as production of moulds for their making. The clay moulds were an object of trade not only in the ceramic centre in Butovo, but in other ancient centres as well, e. g. Romula in Dacia.

The detailed study of the ceramic material and of the character of the pottery production gives grounds to speak of some differentiation of labour in the potter's workshops. According to the author, several people worked in a workshop: a master-potter and 2 or 3 assistants, but in different moments more people became also involved, most probably members of the craftsman's family. The sophisticated operations: modelling, additional processing, decoration, arrangement and firing, were performed by the master, the secondary ones: clay kneading, glazing, engobe and keeping up the fire, were done by his assistants. The appearance of many fingerprints on the earthenware and mainly on the articles made in moulds suggests that the labour of children and women was used in their production.

The complex consideration of the ceramic material from the explored centres and the material imported before their setting up, allowed to follow the intricate mechanism in the substitution of the imported goods for local imitations, which did not happen at once, but in the course of a comparatively long period of time. At first, ordinary ceramic articles were substituted and their

import was stopped after their production by the local masters started; thus, local imitations completely substituted the imported goods.

A great variety of shapes and decorations used by the ancient craftsmen can be found among the ceramic material. Side by side with the forms proper to the Asia Minor traditions in pottery, others are also to be seen, originating from the West Roman workshops, which had not some directly but through mediation from Asia Minor. Some western forms are also to be found here, directly adopted by the local craftsmen, especially specimens from the production of the workshops in Southern Gallia. This means that after the decline of the Arretine production centres, their former markets were conquered by the products of the ceramic centres in Southern Gallia, whose production is to be found not only in the West Roman provinces, but also in the regions of the East Mediterranean to the Northern Black Sea towns. This production, modern for those times, became a target for imitation in our ceramic centres as well, and especially in Pavlikeni. The stylistic analysis of the ceramic material has revealed that the craftsmen were not only ordinary imitators or executors of already popular forms; they manifested artistic understanding and created forms typical only of our centres.

The various production discovered contains both fine and greyish-black ware. The former includes earthenware made of fine clay with a glaze cover, belonging to the red-glazed ceramics, widespread in Roman times. These are vessels mainly used as grave goods and for the cult of Dionysus, which was particularly popular in this area.

The pottery of the first group represents the basic production of the centres near Pavlikeni and Butovo. Deep bowls were mainly produced in Pavlikeni, as well as two-handled urns, amphorae and censers. The production list of Butovo is characterized by a greater variety. Shapes were more sophisticated there and with additional details. Shallow dishes were prevalent, as well as the small two-handled earthenware and the amphora-like jugs with the typical funnel-like mouth. A significant part of this pottery was additioally decorated by stamping, appliquéing and squirting.

The second group includes the pottery for everyday use — kitchenware (*Vasa coquinarie*) made of clay, mixed with sand and additionally smoked.

The ceramic material, classified into types and accurately dated, discovered in chronologically distinguishable context in homogeneous ensembles, could be used for comparisons in the study of similar ceramic finds.

The creators of this production, mainly craftsmen from Asia Minor, were part of the general stream of settlers who found favourable grounds for making a living in the newly-created Roman provinces on the Balkans. As has already been noted, their presence is registered epigraphically. They had to establish a new production which was to change and at the same time to compete with other goods, taking into account the taste of the native population. This is most clearly manifested in the varied production of the ceramic centre in Butovo.

The athor is deeply convinced that one should not consider the role of the settlers from Asia Minor to be absolute and eliminate the participation of the local Thracian craftsmen. Quite natural in this connection is the question: who supplied the native populace with ordinary ceramics for everyday use before these ceramic centres were set up? However, the existence of earlier Thracian production is confirmed by the kiln for firing grey Thracian pottery, discovered not far from the Roman quarries near Hotnica. The fact that all ancient centres, discovered so far, lie over the ruins of earlier Thracian settlements and that a

great amount of grey Thracian ceramics has been discovered under debris from Roman times, which in its fineness, wall thinness and complex technological processing is not inferior to the Roman pottery, makes us think over whether the creators of this ceramics had ceased their production after the coming of the Romans or had joined the stream of craftsmen immigrating from the other Roman provinces.

The author accepts that the ancient Thracian craftsmen had not ceased working, but had simply reorganized their production according to the 'fashion' of time; and if this reorganization is most clearly to be noticed in the fine earthenware where one clearly feels the general tendency to imitate the Roman ceramics, the ordinary ceramics for everyday use reveal a sort of tranference of the Thracian forms, made by hand on the potter's wheel. The time and the demand for cheaper goods compelled the potters to 'rationalize' the ceramic production and at the same time to simplify the earthenware, hand-made until that time with great diligence and in many respects with a marked artistic taste.

The ceramic production was designed in the first place to satisfy the needs of the populace from the neighbouring area. A considerable part of it had been marketed in more distant settlements. This refers mainly to the production of Butovo and partially to that of Pavlikeni, which is to be found in many ancient sites on the territory of Nicopolis ad Istrum, Novae and to the north of the Danube.

During the Roman era the potters were tradesmen at the same time, because the practice was to sell the goods where they were produced. Most probably markets for exchange and sale of goods were periodically set up near these centres. The great amounts of stored ceramic production confirm this assumption of the author, as well as the remains of cartwright's/smitheries and cattle-sheds in Pavlikeni and Butovo, and the vast vacant meadows around the ceramic centres.

The exploration of the ceramic production near Hotnica, Pavlikeni and Butovo is an important moment for throwing light over the economic life and development of the crafts in the Bulgarian lands during Antiquity, as well as upon the economic history of the Roman Empire within whose borders these centres existed — the unique for the present, comparatively well-preserved and explored producers of pottery within its eastern part during those times. And if the West Roman ceramic centres have been explored for more than a century now, and a number of scientific works have been written about them, the present study is only a modest contribution to the Eastern production group.

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СУЛТОВ Б., 1969б — Один ремесленний центр в Нижней Мезии (One artisan's centre in Moesia Inferior) — Actes du 1er Congrès International des Etudes Balkaniques et Sud-Est Européennes, II, Sofia

СУЛТОВ Б., 1972а — Глинени кадилници от Бутово и Хотница (Clay censers from Butovo and Hotnica) — ИАИ XXXIII

СУЛТОВ Б., 1972б — Производството на релефна керамика в Долна Мизия (Production of relief earthenware in Moesia Inferior) — ИОМВТ V

СУЛТОВ Б., 1976 — Античные центры керамика в Нижней Мезии (Ancient ceramic centres in Moesia Inferior) — София

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ABBREVIATIONS

ГМПО	—	Годишник на музеите в Пловдивски окръг
ГМСБ	—	Годишник на музеите в Северна България
ГНМ	—	Годишник на Народния археологически музей, София
ГПлНМ	—	Годишник на Пловдивския археологически музей
ГПНБМ	—	Годишник на Пловдивската народна библиотека с музей
ГСУФИФ	—	Годишник на Софийския университет. Философско-исторически факултет
ГСУФФ	—	Годишник на Софийския университет. Филологически факултет.
ИАИ	—	Известия на Археологическия институт при БАН
ИБАД	—	Известия на Българското историческо дружество
ИБАИ	—	Известия на Българския археологически институт
ИВАД	—	Известия на Варненското археологическо другество
ИМСЗБ	—	Известия на музеите от Северозападна България
ИБЮБ	—	Известия на музеите от Южна България
ИНМВ	—	Известия на Народния музей в Варна
ИОМВТ	—	Известия на Окръжния музей във Велико Търново
ИНМК	—	Известия на Народния музей в Коларовград /Шумен/
ИНМР	—	Известия на Народния музей в Русе
ИПр.	—	Исторически преглед
ИОМТ	—	Известия на Окръжния мзей в Търново /само т. I/
ИРАИК	—	Известия руского археологическото института в Константинопле
МАДАРА	—	Сб. Мадара. Разкопки и проучвания
МИА	—	Материалы и исследования по орхеологии СССР
МПК	—	Музеи и паметници на културата
МСб	—	Сборник за народни умотворения, наука и книжнина
ОБАД	—	Отчет на българското археологическо дружество
РП	—	Разкопки и проучвания
СА	—	Советския археология
ТВПИКМ	—	Трудове на Великотърновския педагогически институт „Кирил и Методий“

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ABBREVIATIONS

AAHung	Acta Archaeologica Academiae Scientiarum Hungaricae
An. Brit. Sch. Rome	Annal of the British School at Rome
AM	Mitteilungen des Deutschen archäologischen Instituts
BCH	Bulletin de Correspondance Hellénique
BJ	Jahrbuch des Vereins von Altertumsfreunden im Rhinland
Bon Jahrb	Bonner Jahrbücher
CRTGR	Centre de recherches sur les techniques gréco-romaines. Université de Dijon, Faculté des scienses humaines
FA	Folia archaeologica
Intercisa II	Archaeologia Hungaricae. Disertationes Archaeologicae Musei Nationalis Hungarici
RE	Raul-Wissowa Rael-Encyclopädie der classischen Altertumswissenschaft
OCAM	
RCRF	Rei Creatiae Romanae Fautorum
SCIV	Studii şi cerčetări di istorie veche
ZFA	Zeitschrift für Archäologie

ILLUSTRATIONS

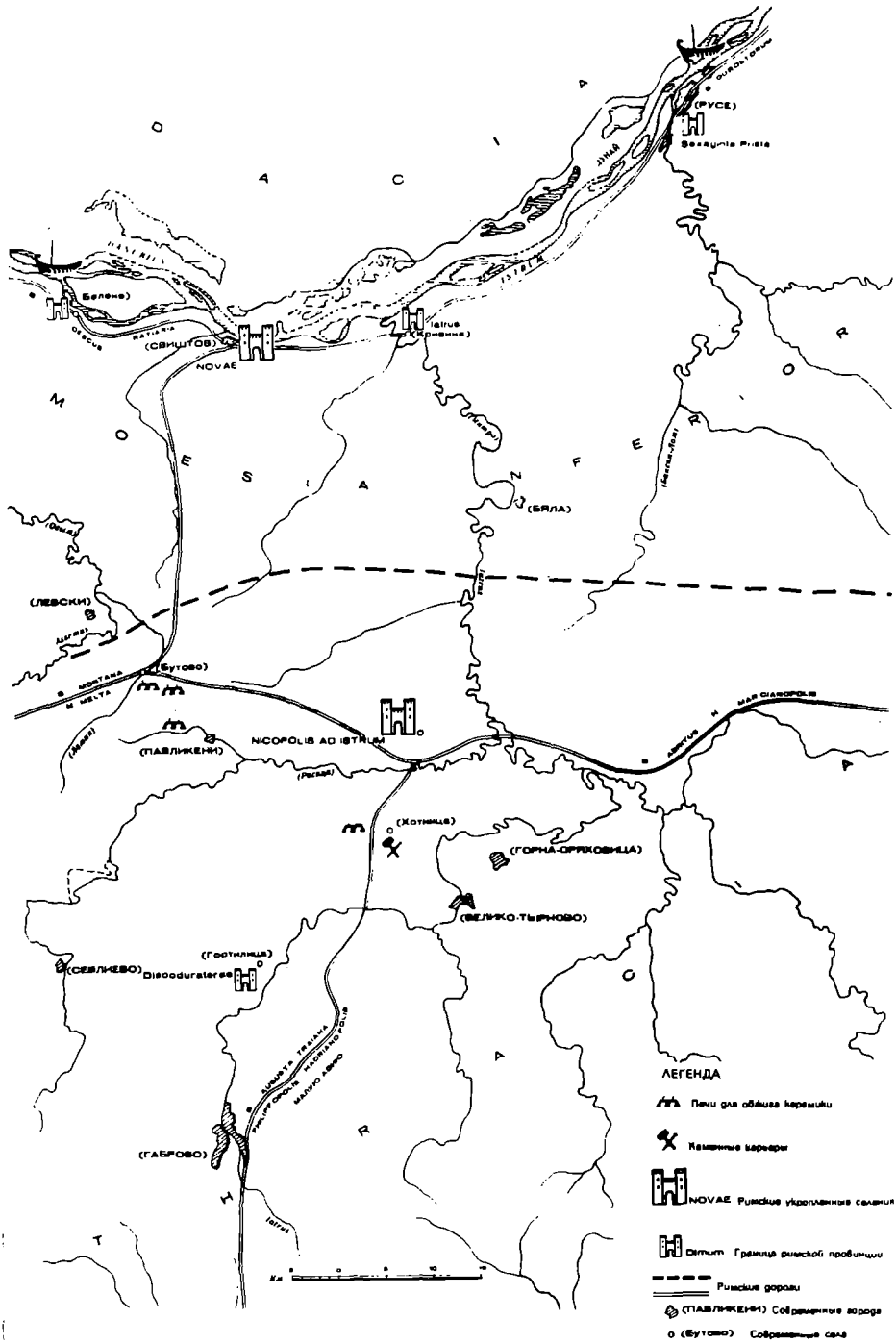
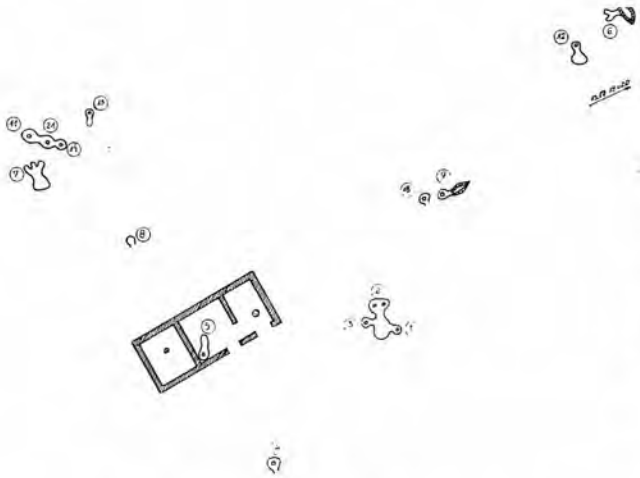


TABLE I. LOCATION OF THE CERAMIC CENTRES ON THE TERRITORY OF NICOPOLIS AD ISTRUM.



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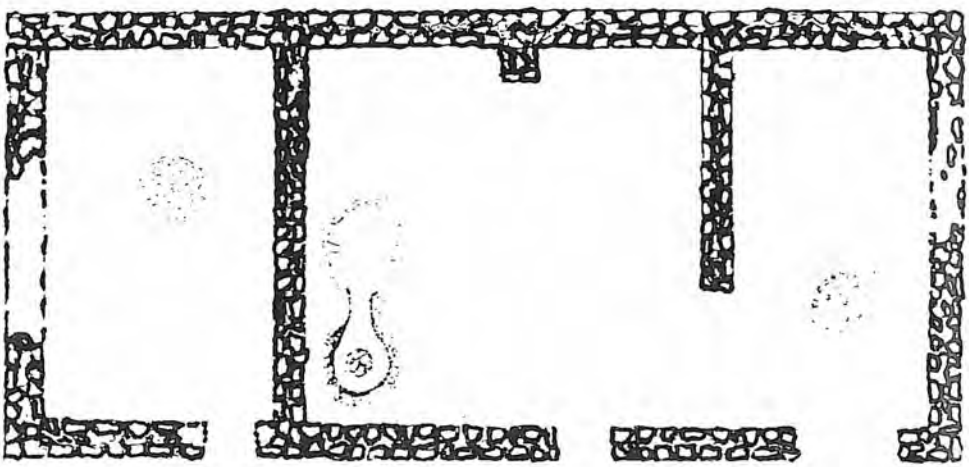

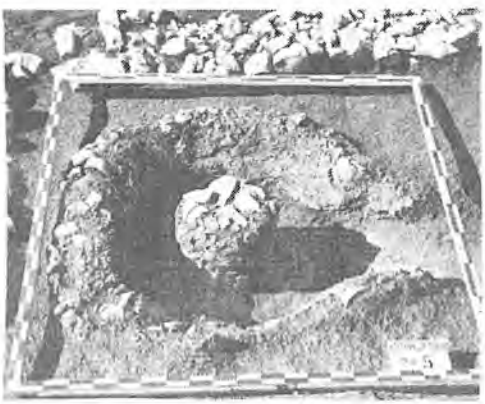

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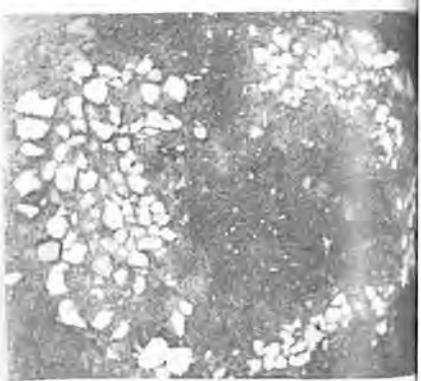

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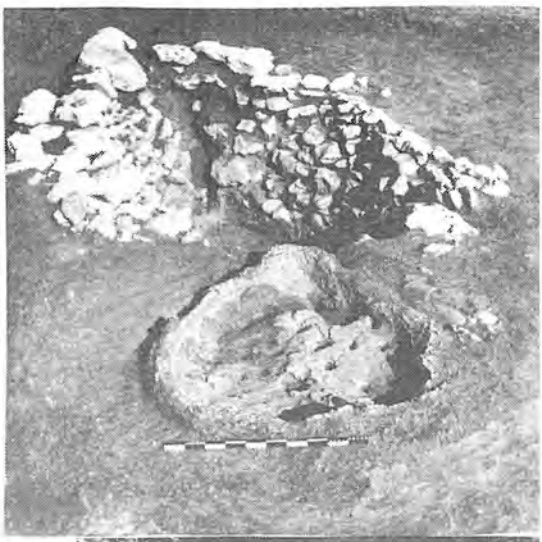
TABLE II. CERAMIC CENTRE NEAR HOTNICA. 1. Location of the pottery kiln. 2. Layout of the potters' workshops. 3. General view of the poters' workshops. 4. Pottery kiln No. 5 (in the workshop). 5. Stone platform of a potter's wheel.

TABLE III. Pottery kilns.



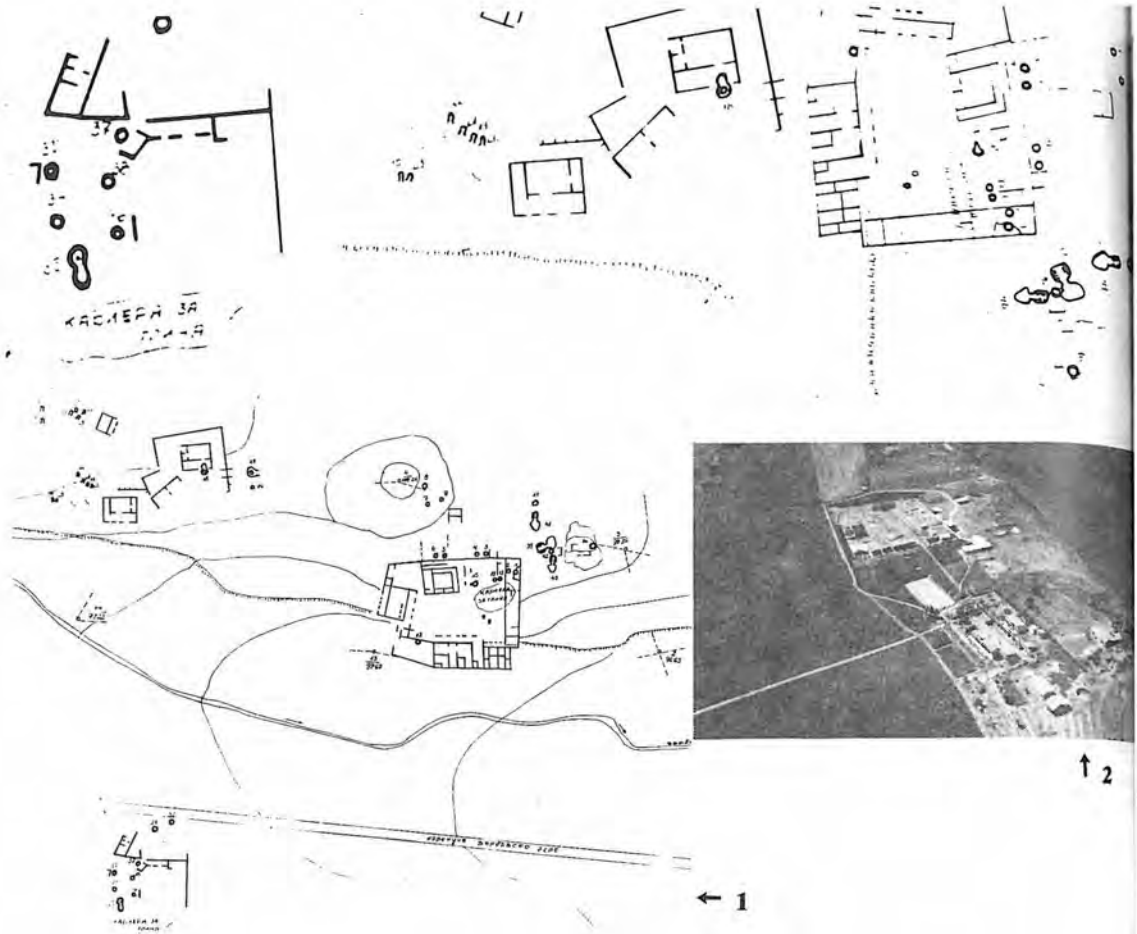
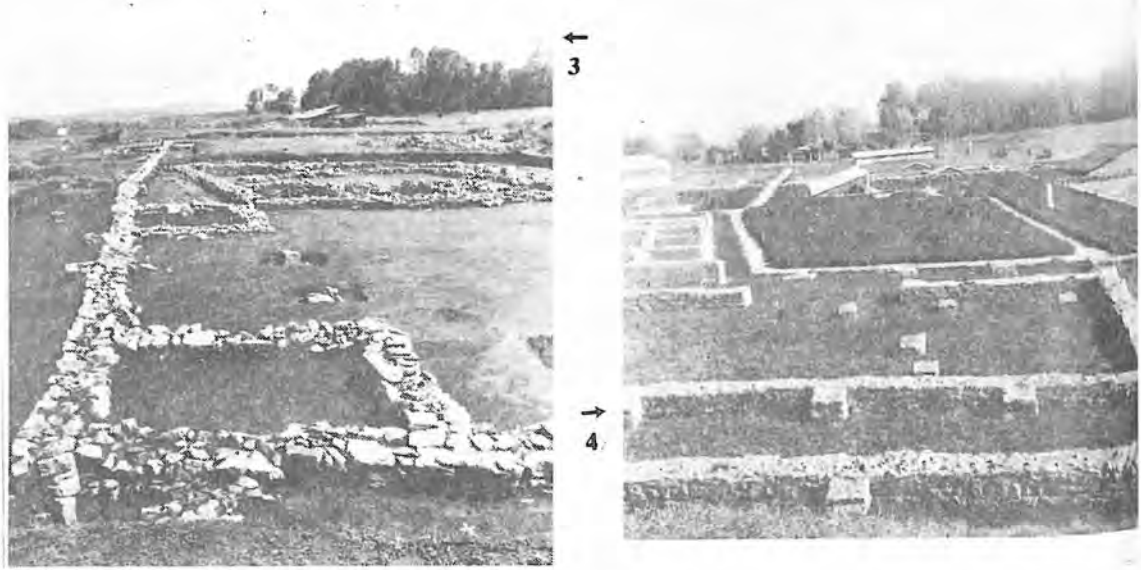


TABLE IV. CERAMIC CENTRE NEAR PAVLIKENI. 1. Location of the pottery kilns. 2. General view of the whole site. 3, 4. General view of the eastern section.



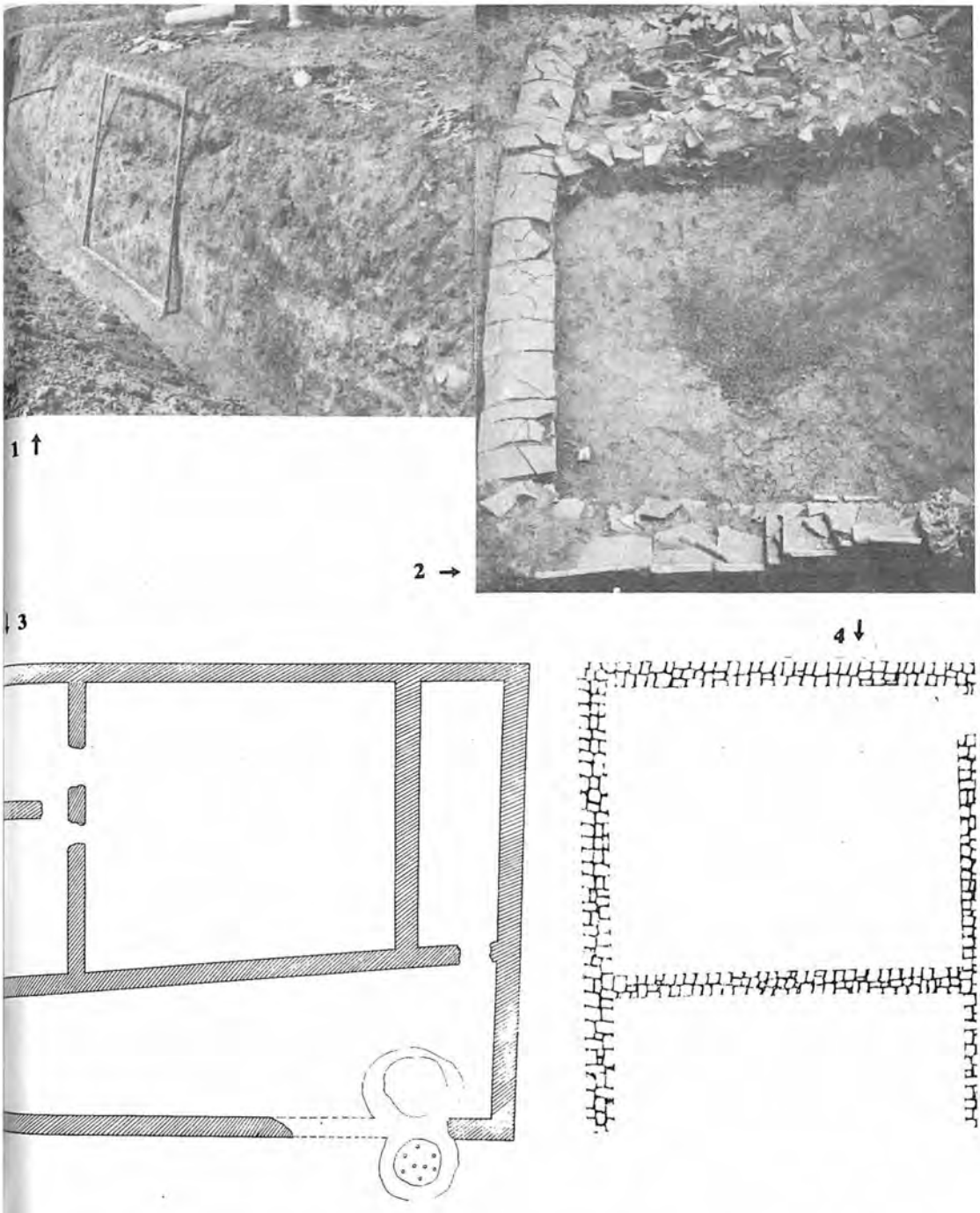


TABLE V. CERAMIC CENTRE NEAR PAVLIKENI. 1. Clay-pit (general view). 2. Facility for clay storage 3. Potter's workshop in the potter's lodging. 4. Independent potter's workshop

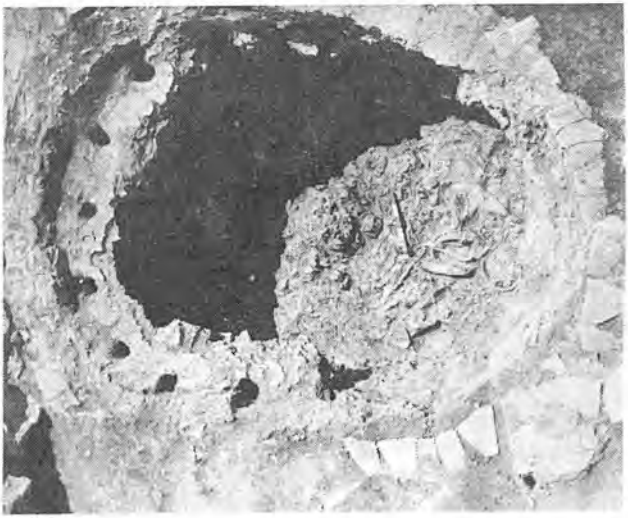


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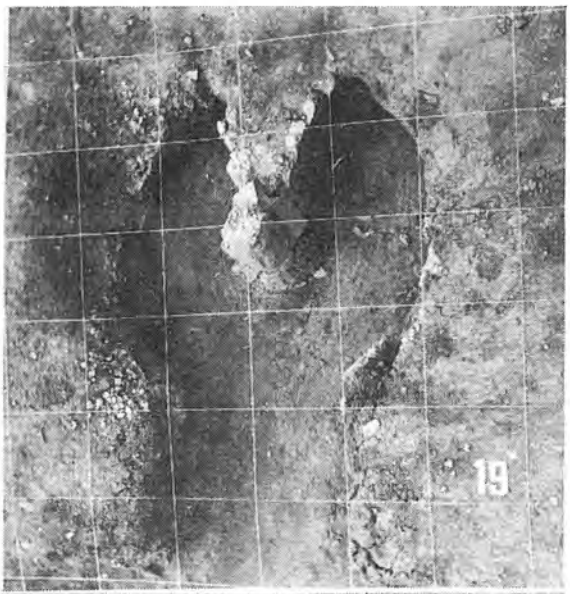
TABLE VI. CERAMIC CENTRE NEAR PAVLIKENI. 1—6. Pottery kilns.



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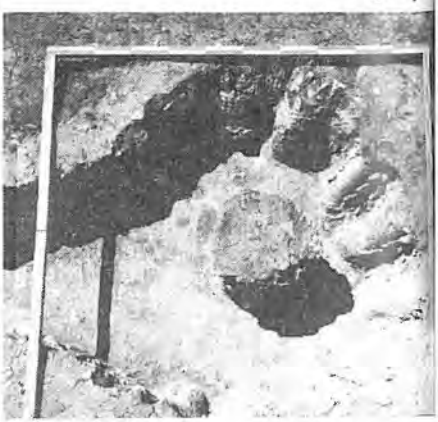

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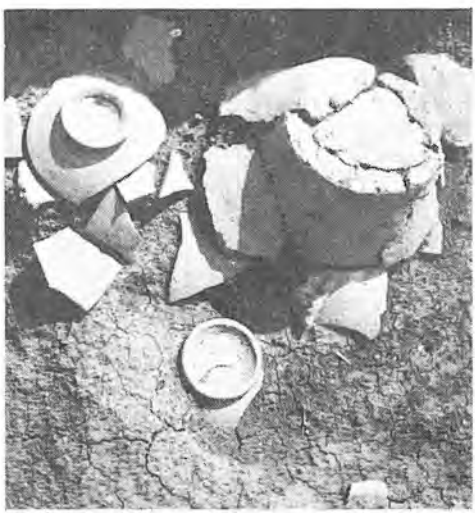
TABLE VII. CERAMIC CENTRE NEAR PAVLIKENI. 1. Supporting pillar and part of the partitioning wall of the kiln. 2. Garbage pit with of the discarded ceramic production. 3. Fine and coarse hand-made ceramics. 4. Clay coating of a destroyed kiln. 5. Ceramic production in a potter's workshop. 6. *Furnaculae* with a supporting pillar of clay urns.



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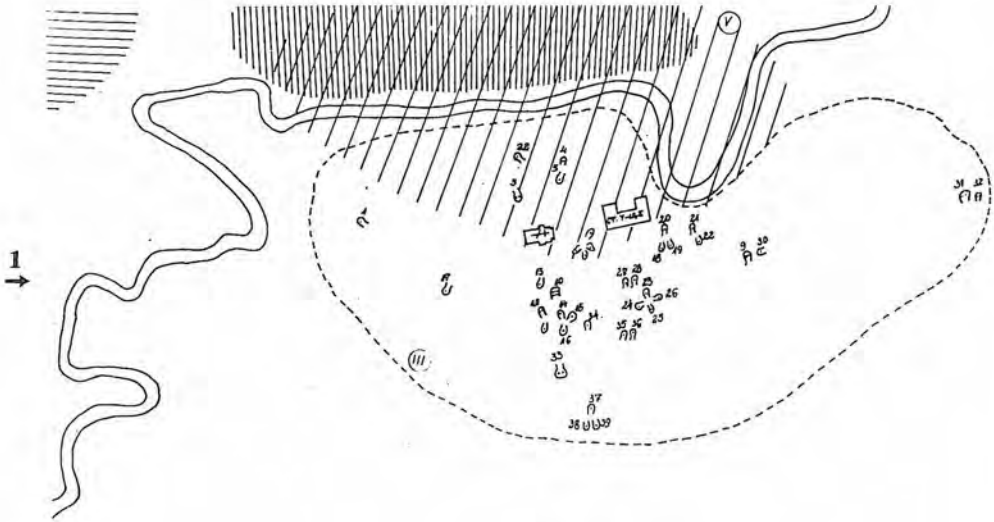

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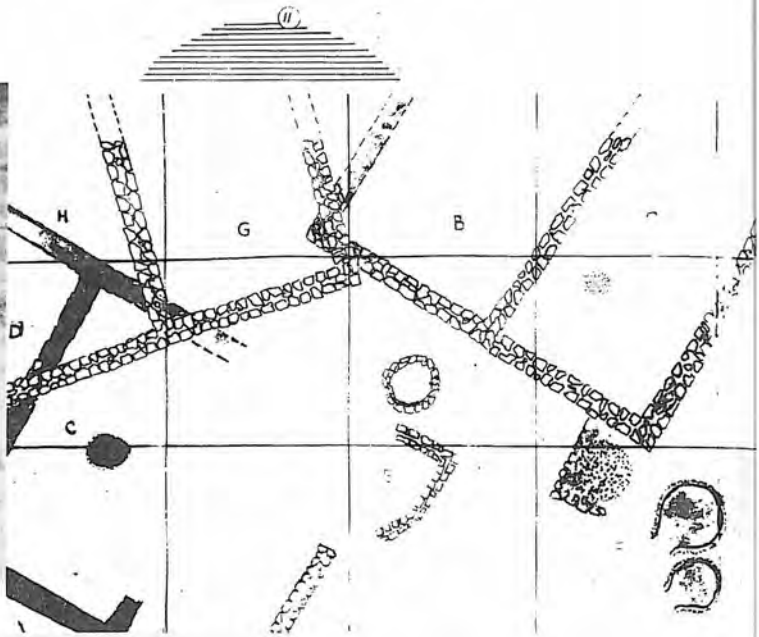

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TABLE VIII. CERAMIC CENTRE IN BUTOVO. 1. Location of the pottery kilns. 2. Archaeological excavations (general view). 3. Layout of the architectural complex in the square. 4. Pottery kiln — conserved and exhibited.

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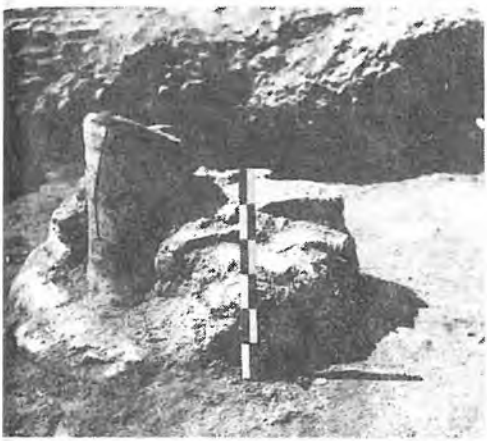
TABLE IX. CERAMIC CENTRE IN BUTOVO: 1. Potter's tool — (iron shovel). 2—6. Pottery kilns.



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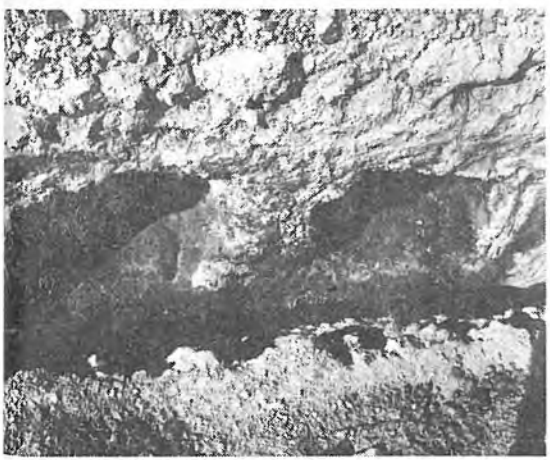

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TABLE X. 1. Scheme of a pottery kiln.
2. Types of pottery kilns.

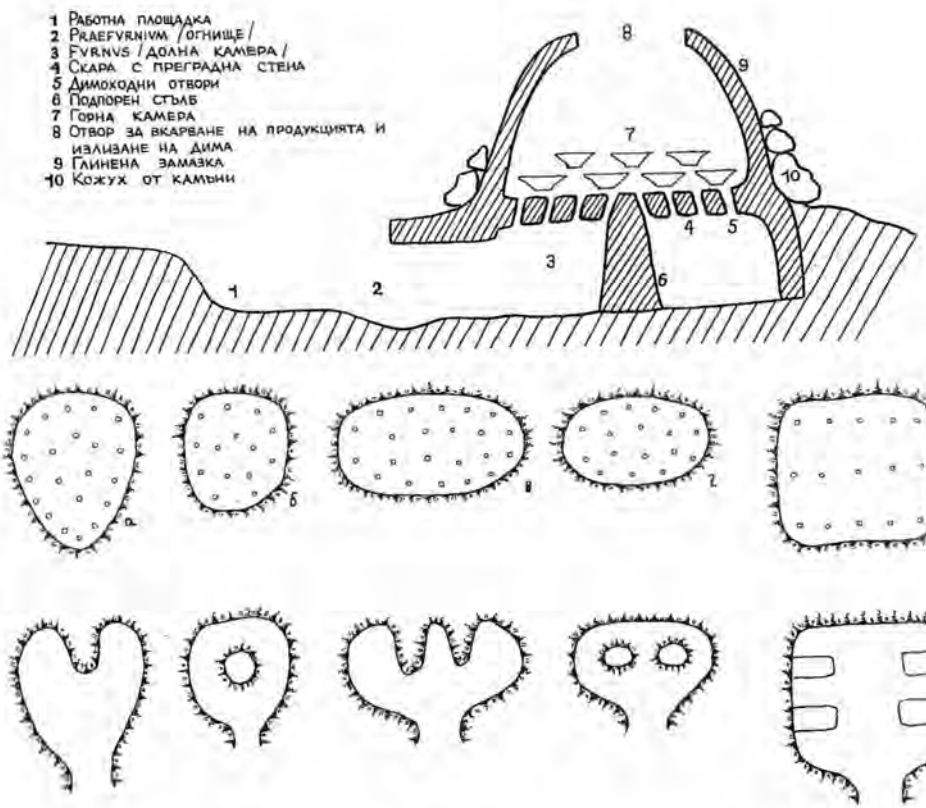
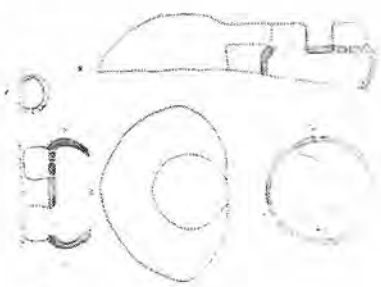


TABLE XI. 1. Pottery kiln (Hotnica). 2—5. Pottery kilns (Pavlikeni). 3—4. Pottery kilns (Butovo).



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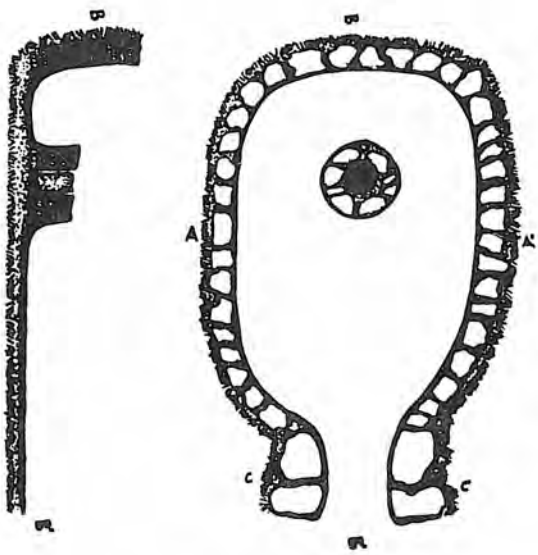

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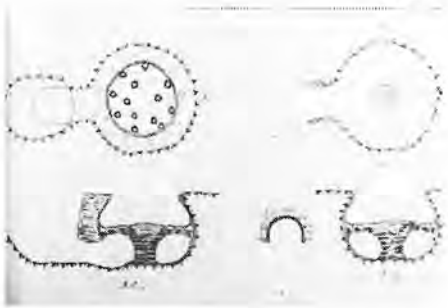

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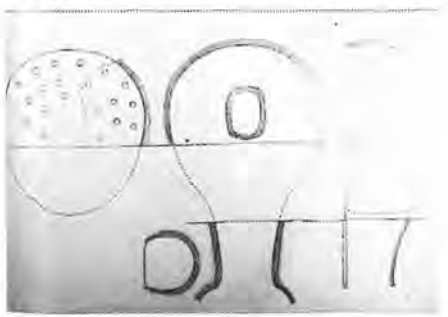

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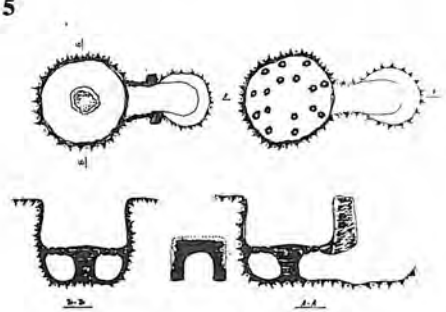
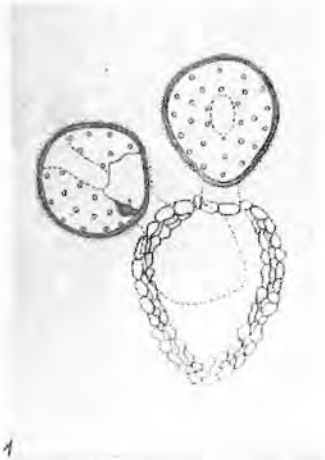


TABLE XII. 1—2. Pottery kilns (Hotnica). 3—5. Pottery kilns (Pavlikeni). 4. Pottery kiln (Butovo).



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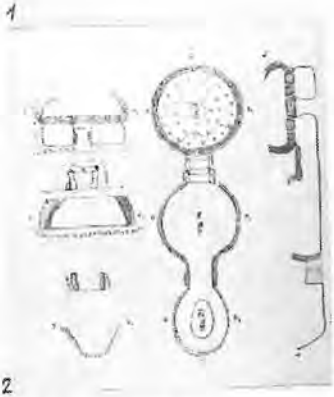

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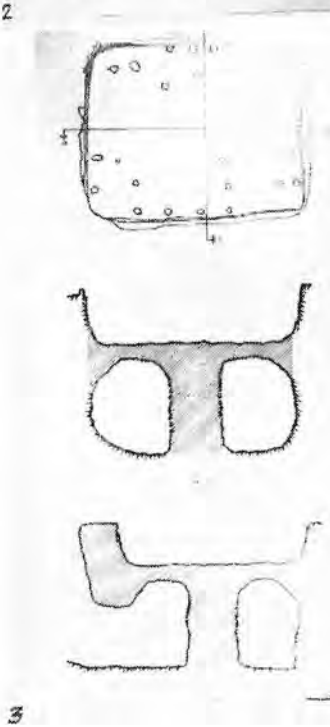

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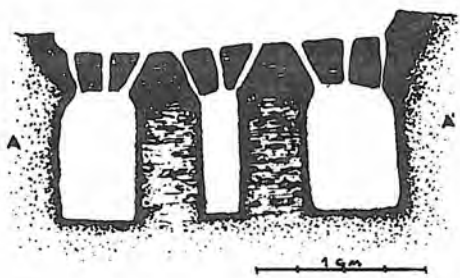

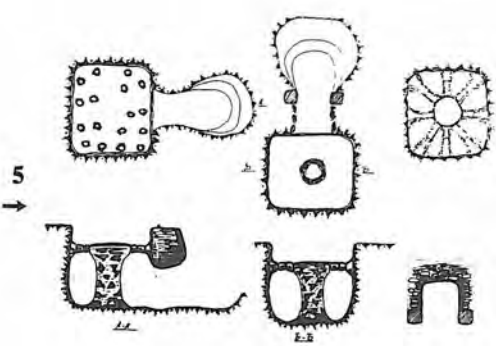

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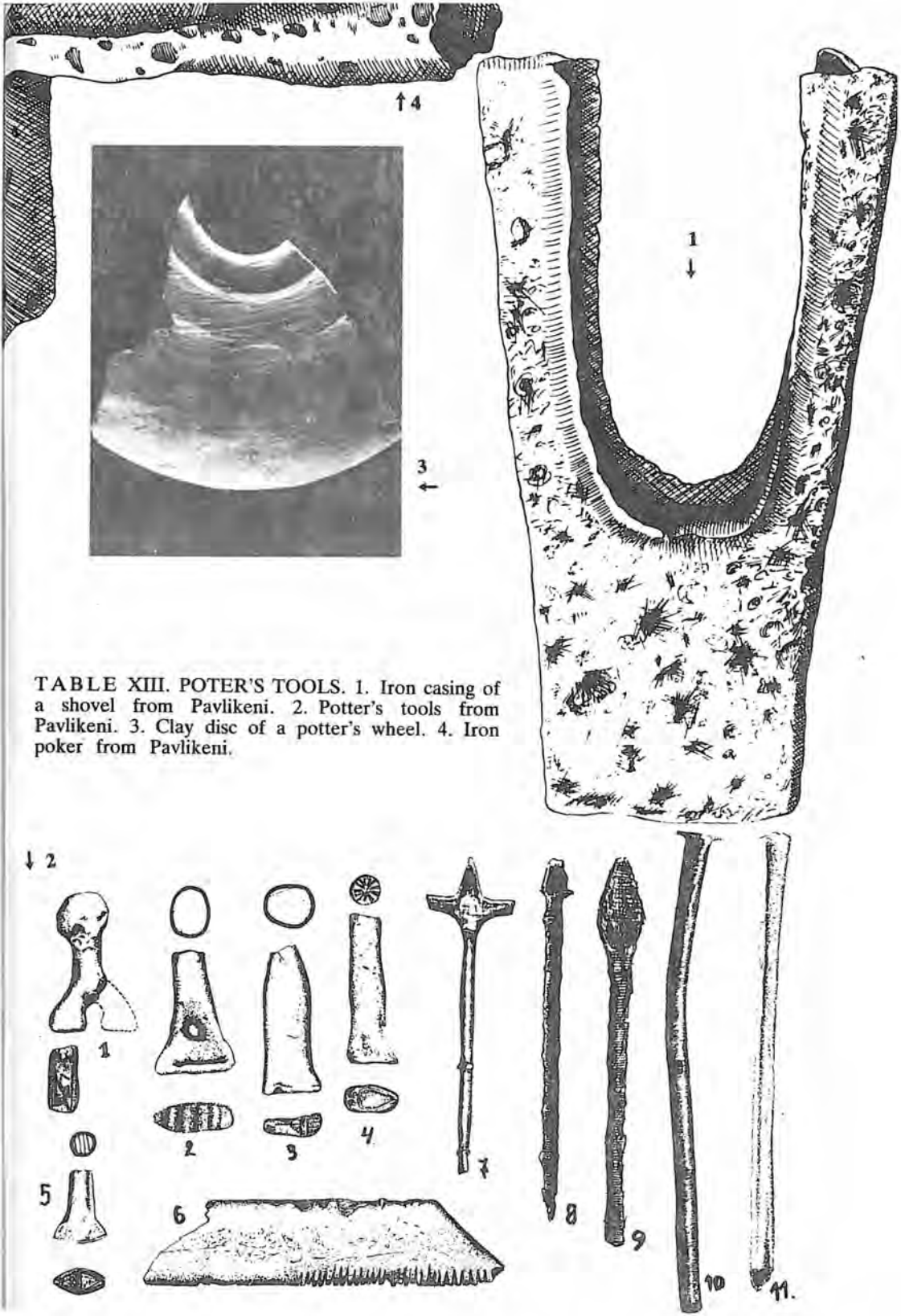

TABLE XIII. POTER'S TOOLS. 1. Iron casing of a shovel from Pavlikeni. 2. Potter's tools from Pavlikeni. 3. Clay disc of a potter's wheel. 4. Iron poker from Pavlikeni.

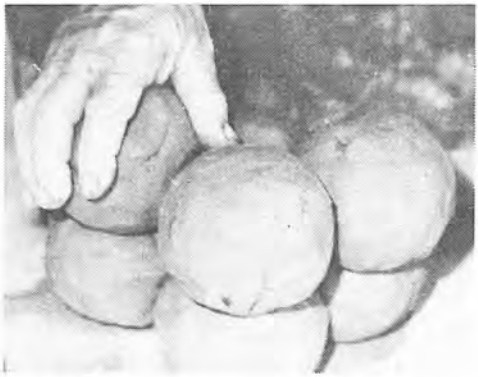

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TABLE XIV. 1—6. Moulding of earthenware.

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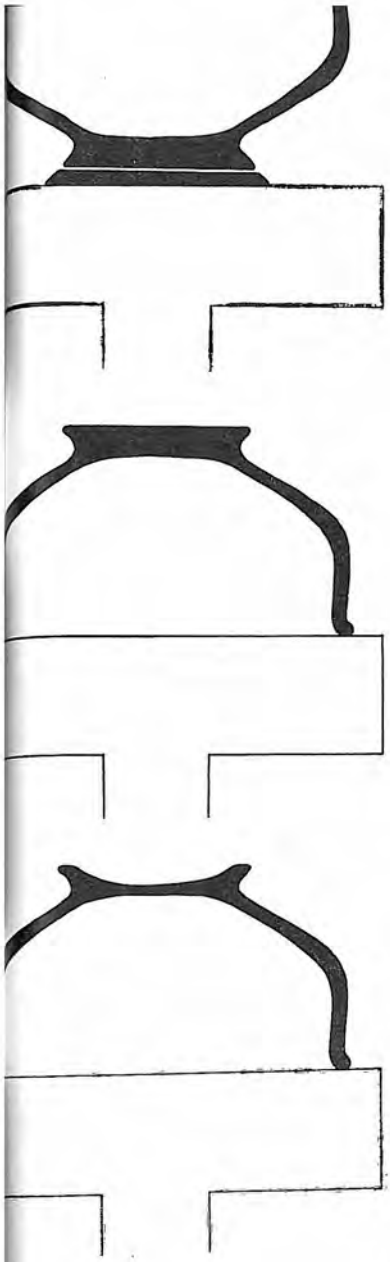
TABLE XV. ADDITIONAL PROCESSING. 1—7. Bottom shaping. 8. Clay base for earthenware fixing during moulding. 9. A two-handled earthenware from Butovo.



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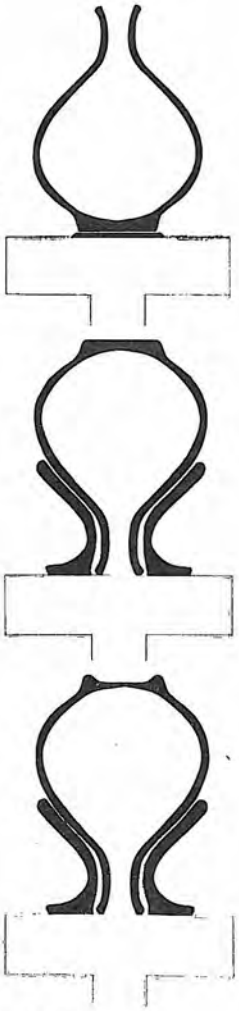

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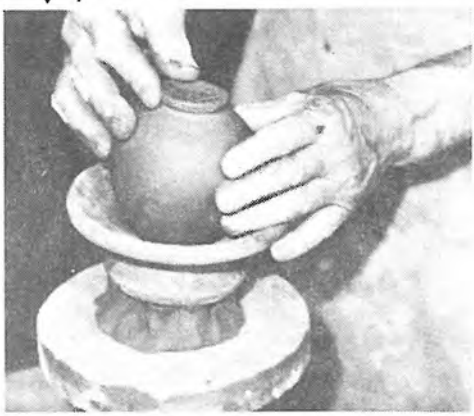

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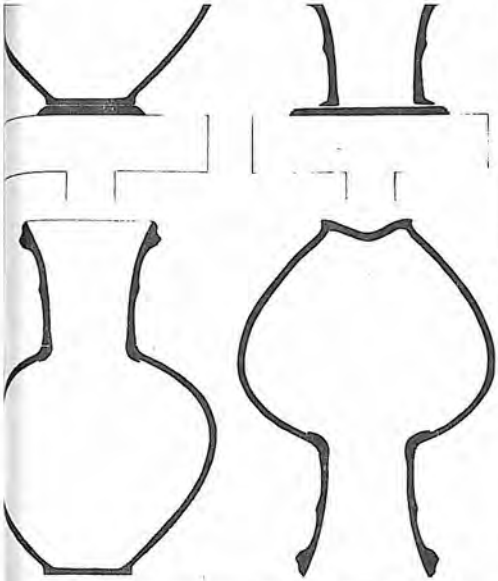

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TABLE XVI. ADDITIONAL PROCESSING. 1, 3, 4, 5. Neck additional fixing. 2. Fragment of an earthenware with preserved traces of neck sticking to the body.

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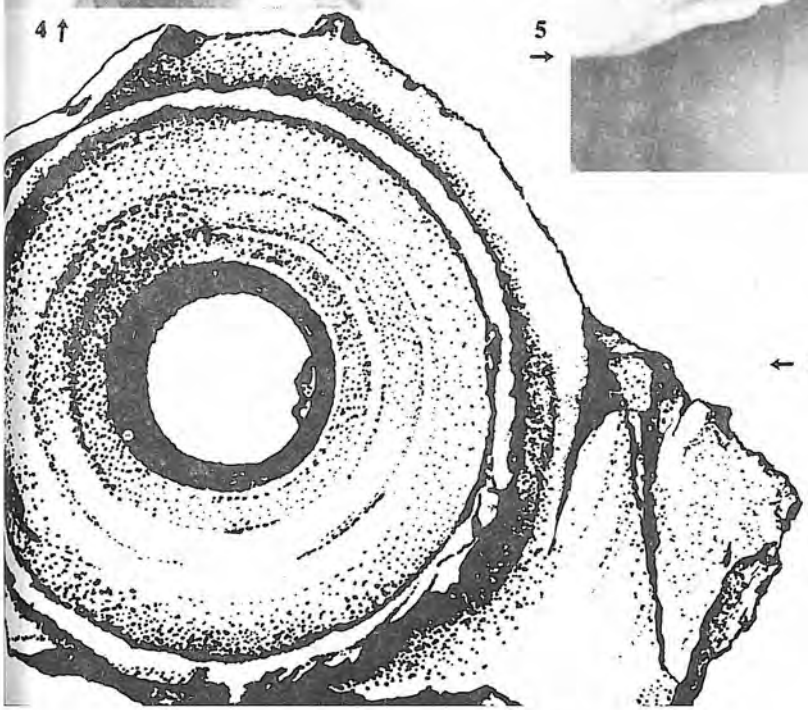

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TABLE XVII. 1—5. Making of clay censers. 6. Clay censer from Hotnica.

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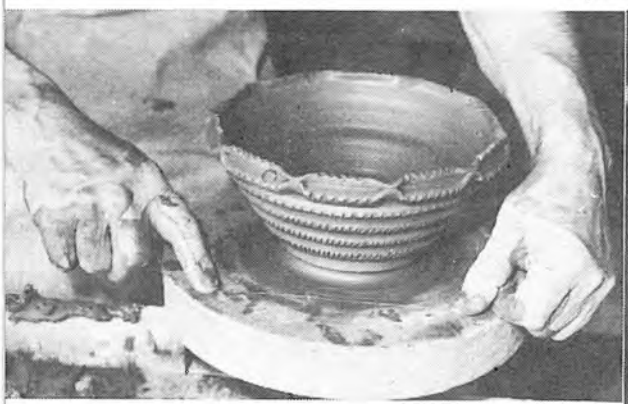

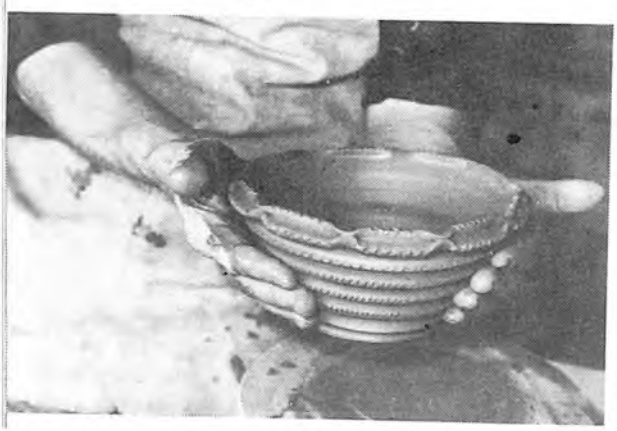

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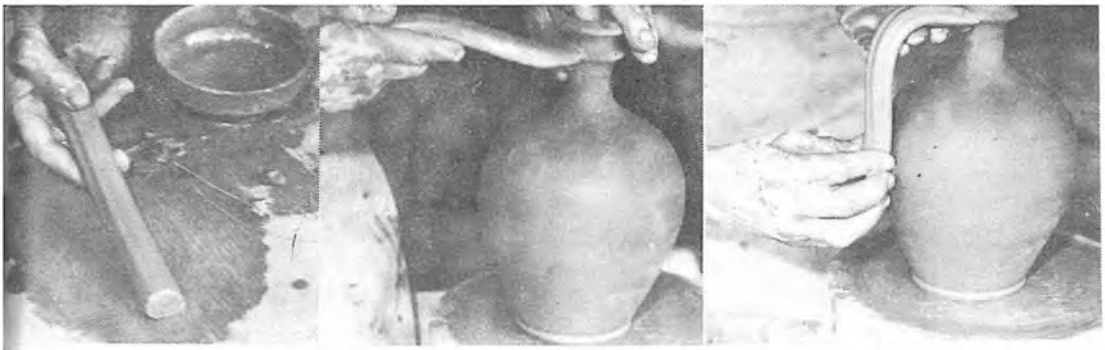
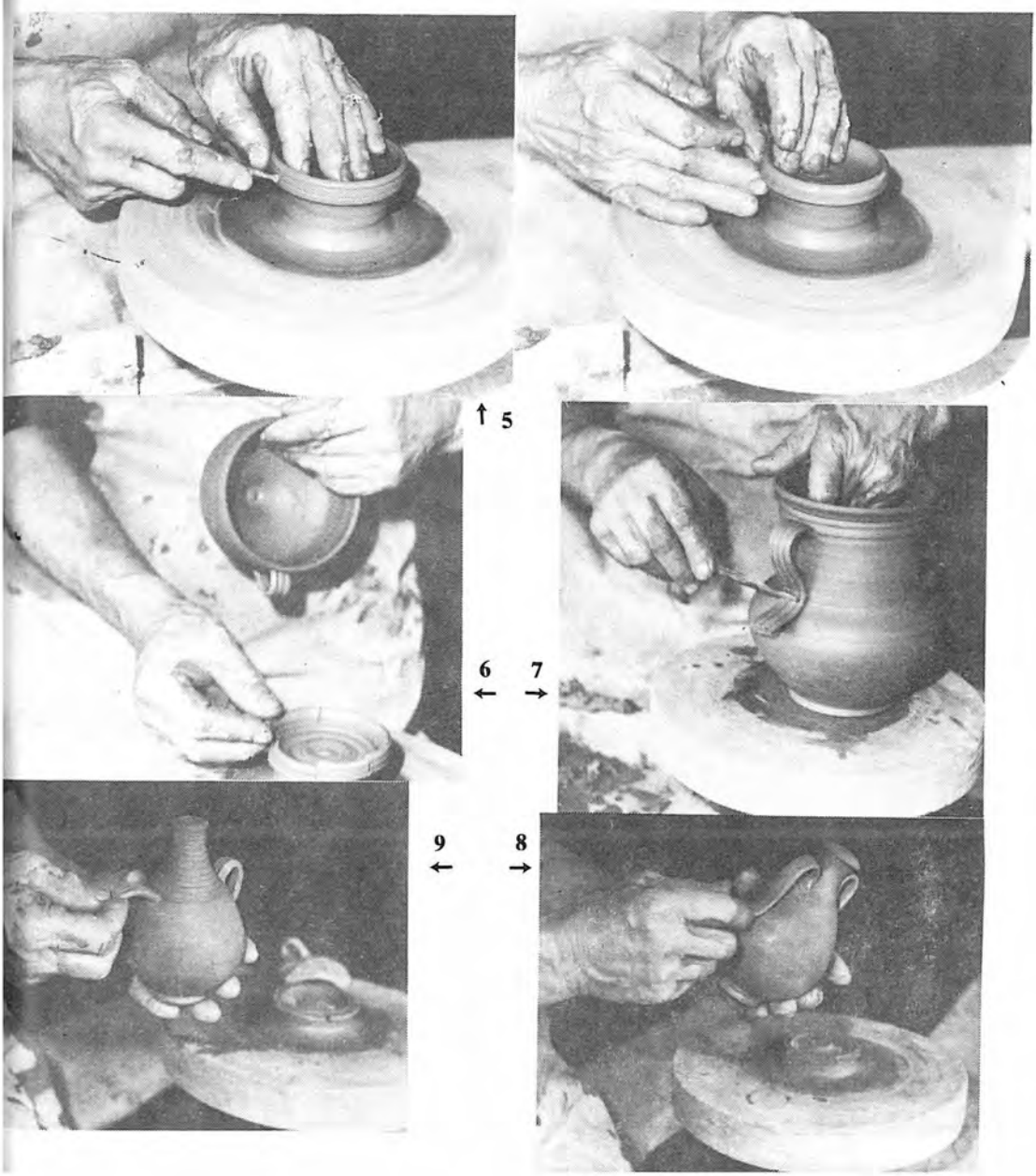
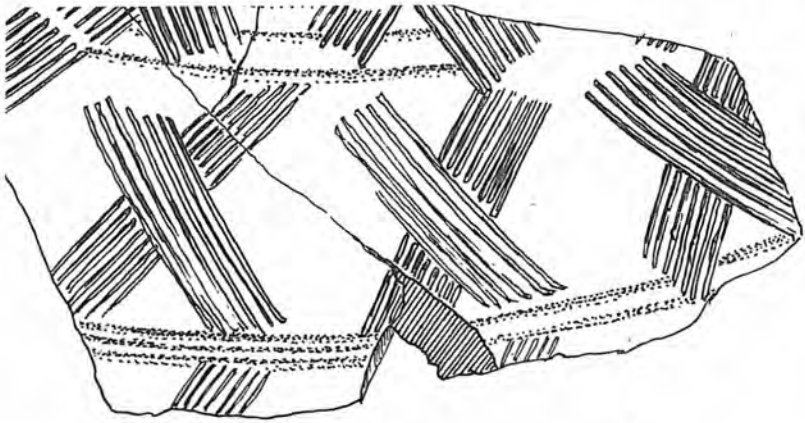


TABLE XVIII. 1—9. Making of handles.





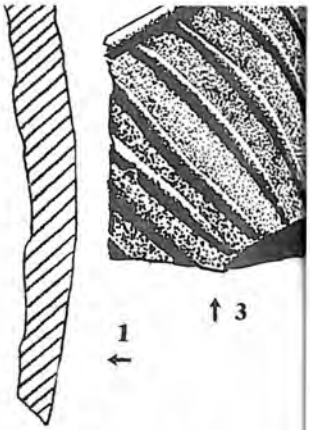


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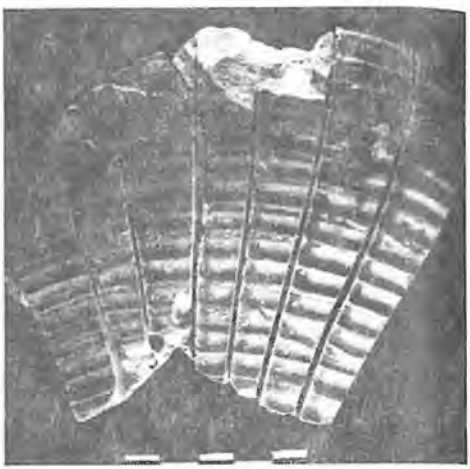
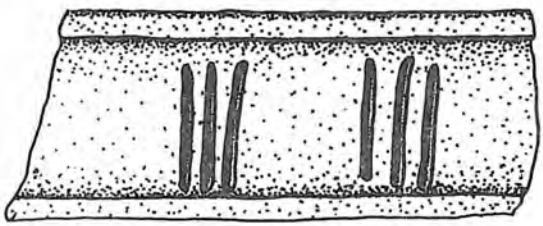
TABLE XIX. EARTHENWARE DECORATION. 1—6. Incised decoration.





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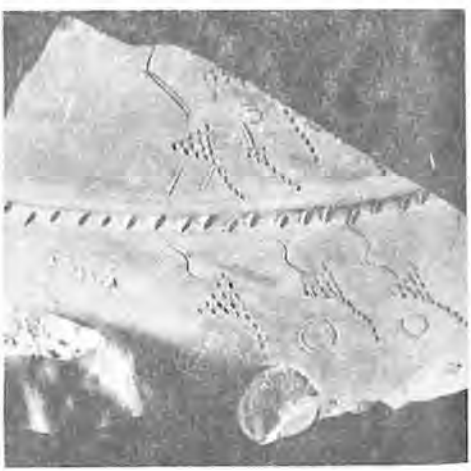

TABLE XX. EARTHENWARE DECORATION. 1—9. Decoration made with a cogwheel.

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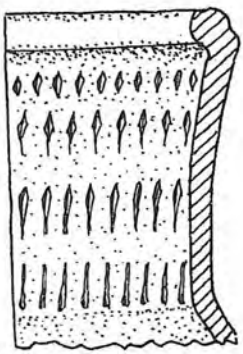

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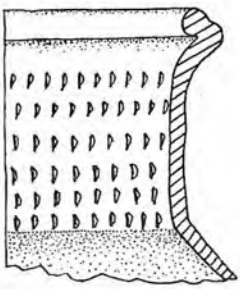

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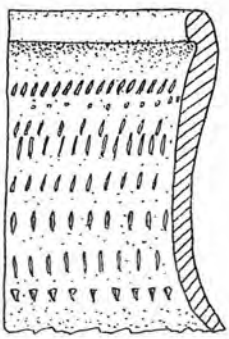

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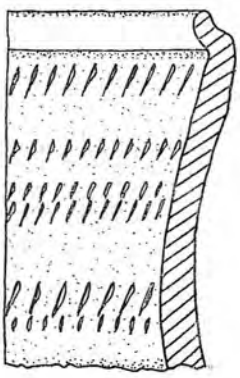

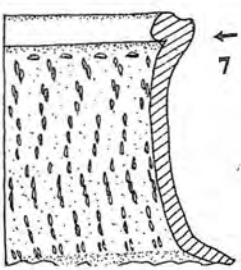

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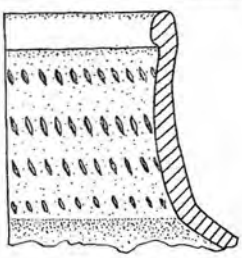
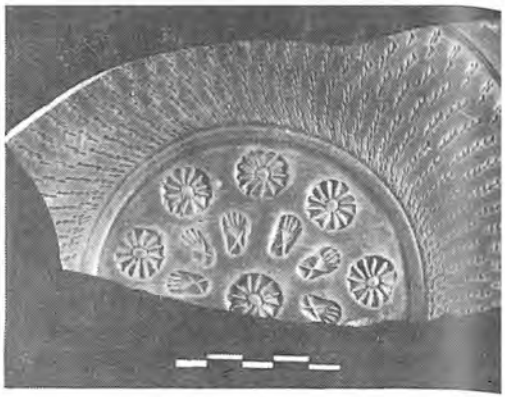


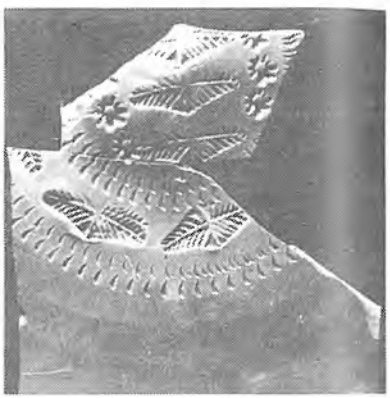
1



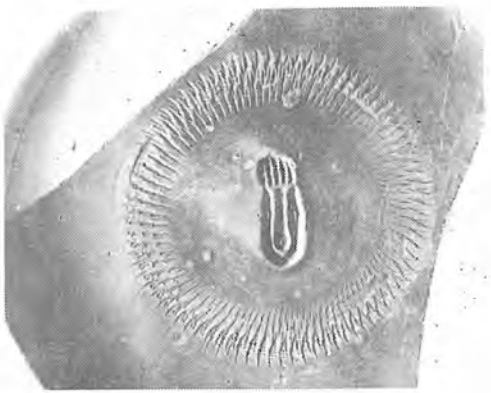
2

TABLE XXI. EARTHENWARE DECORATION. 1. Stamping. 2, 4, 5. Earthenware with stamped decoration from Pavlikeni and Butovo. 3, 6. Clay seals for stamping from Pavlikeni and Butovo.

3



4



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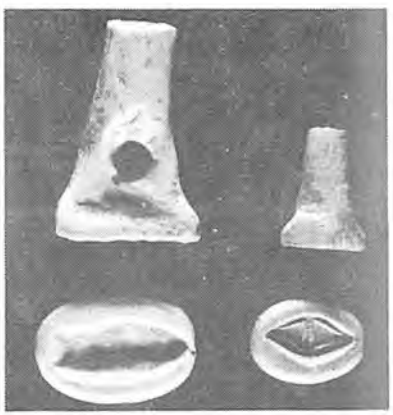

TABLE XXII. EARTHENWARE DECORATION. 1. Squirting. 2—8. Squirted decoration on earthenware from Pavlikeni and Butovo. 9. Fragment of an earthenware with appliquéed decoration.

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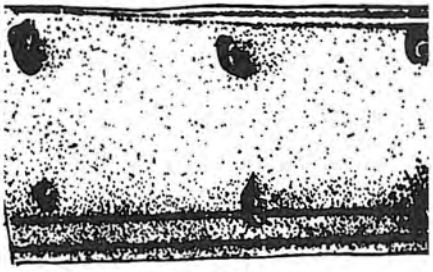

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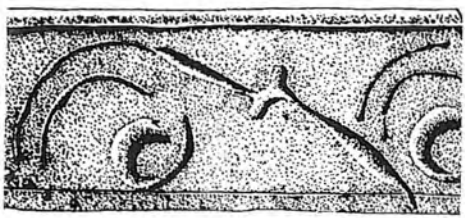

↓8

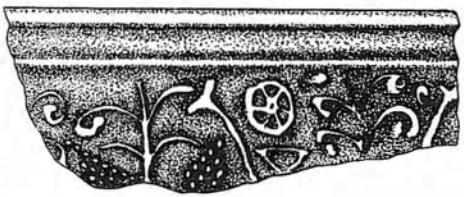

TABLE XXIII. EARTHENWARE DECORATION. 1—3. Appriquéing. 4. Relief image of a Gorgon from Butovo. 5—8. Clay mould for appliquéing from Butovo. 6. Clay mould for appliquéing from Pavlikeni. 9. Fragment of an earthenware with appliquéed decoration.

↑ 1

2 ↓

→ 8

9 ↓

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↓ 5

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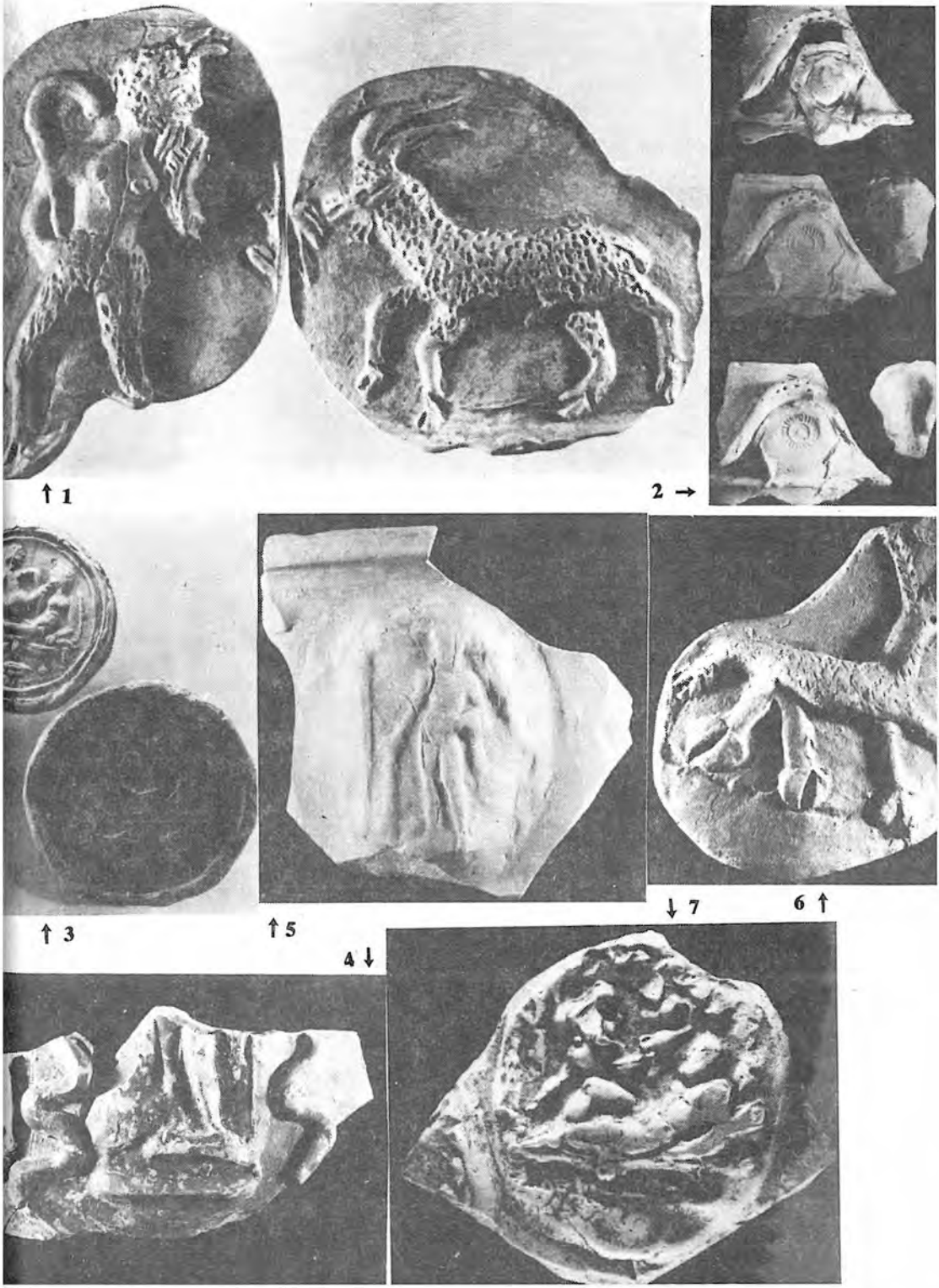
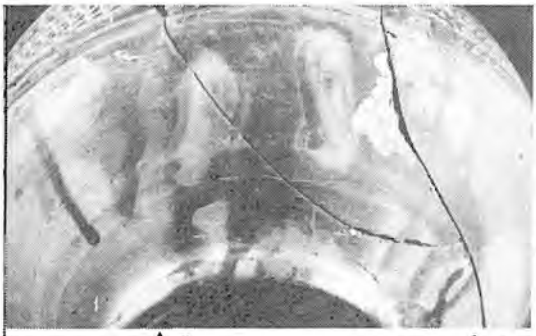
TABLE XXIV. EARTHENWARE DECORATION. 1—3. Moulds for appliquéing from Butovo. 2. Appriquéed ceramics from the village of Vărbovka. 4. 5. Appliquéed ceramics from Pavlikeni. 6. Mould for appliquéed ceramics from Hotnica. 7.. Appliquéed ceramics from Hotnica.





↑ 1

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↑ 4

TABLE XXV. 1. Fingerprints. 2—7. Discarded ceramic production.

→ 7

6 ↓

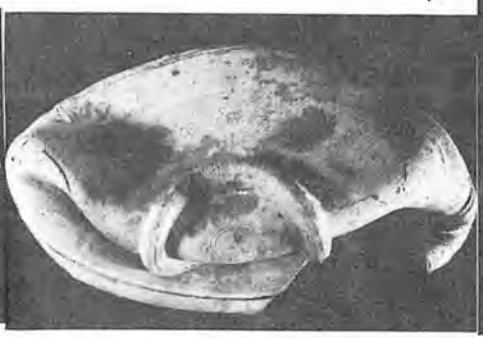


TABLE XXVI. DISHES. 1. Type 1a; 2. type 1b; 3. type 1c;. 4. type 2; 5. type 3; 6. type 4a.

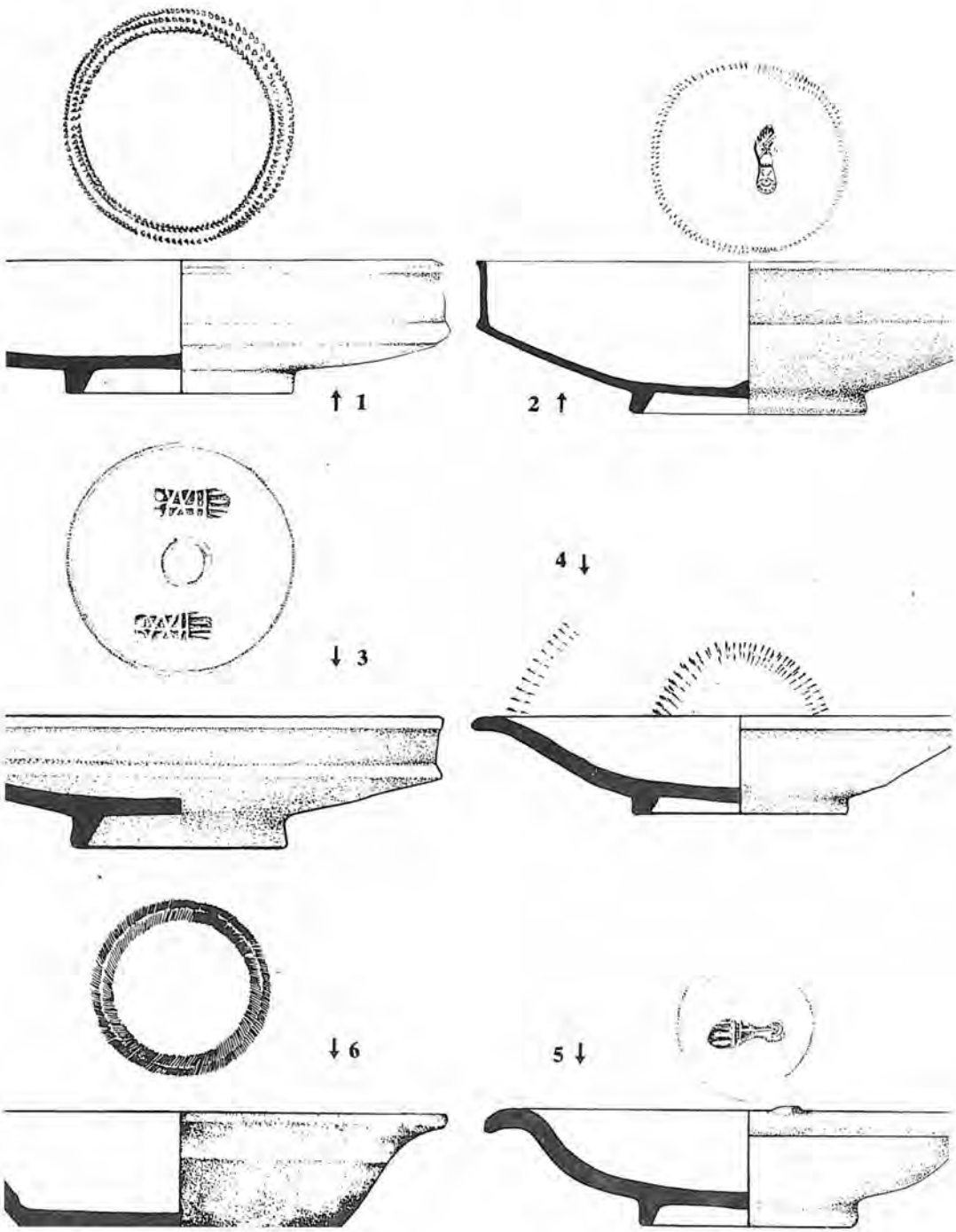


TABLE XXVII. DISHES. 1. Type 4b; 2. type 4c; 3. type 4d;. 4. type 5; 5—7. type 6.

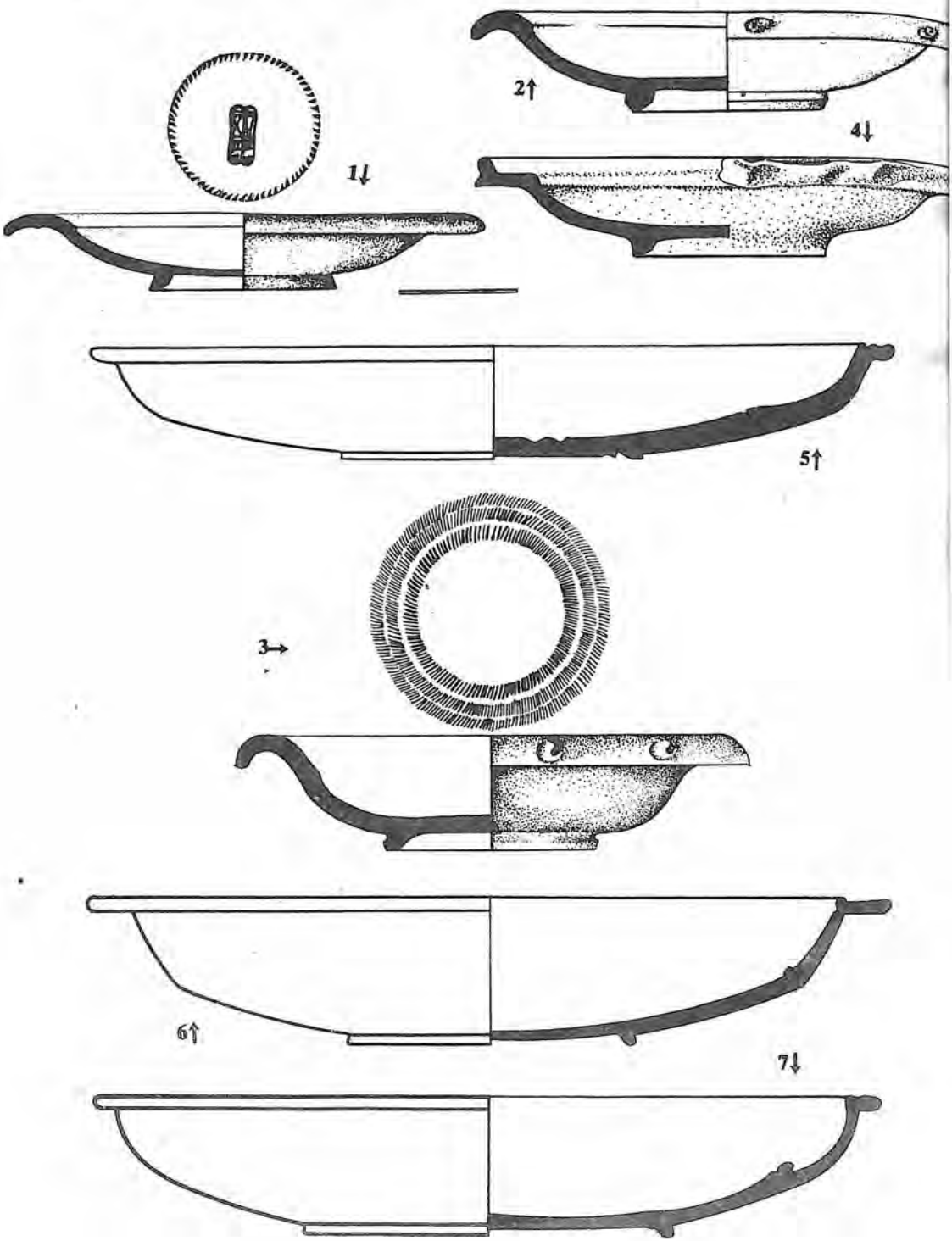


TABLE XXVIII. DISHES AND BOWLS. 1. Type 6; 2—3. handles with relief decoration; 4. type 7; 5. type 9; 6. type 9. 7. type 1; 8. type 1b.

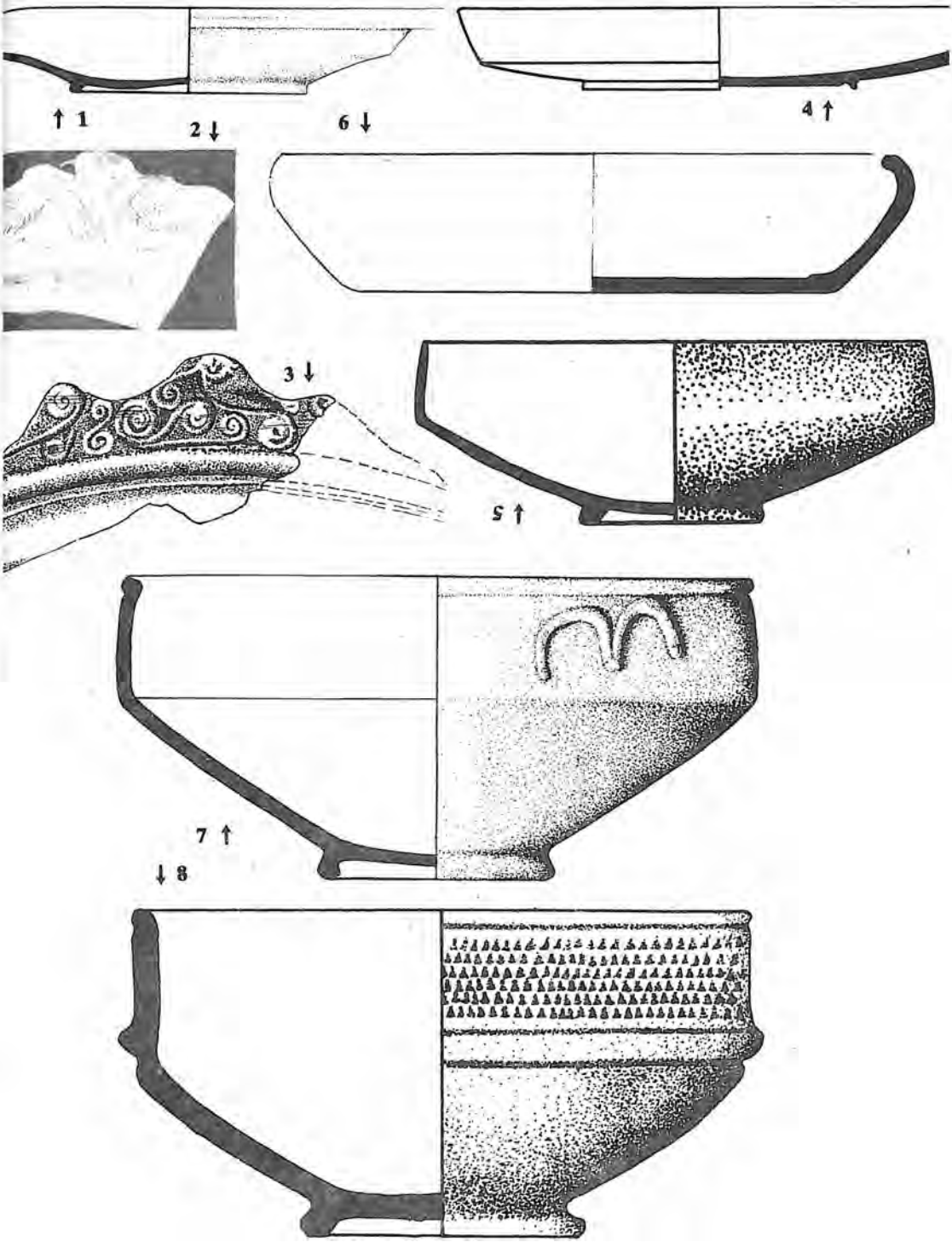


TABLE XXIX. BOWLS. 1. Type 1c; 2—3. type 2; 4. type 2a; 5. type 3; 6. type 4.

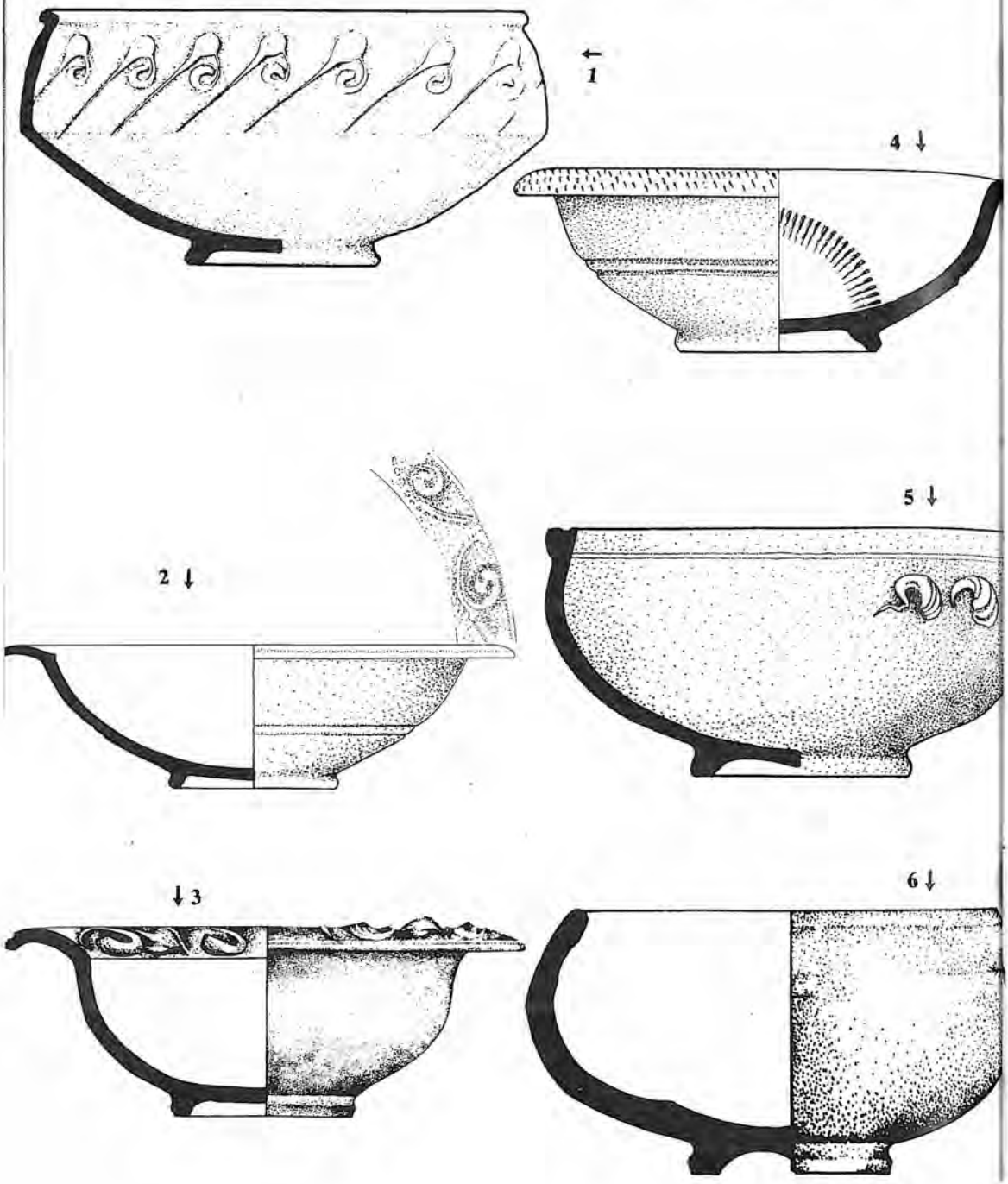
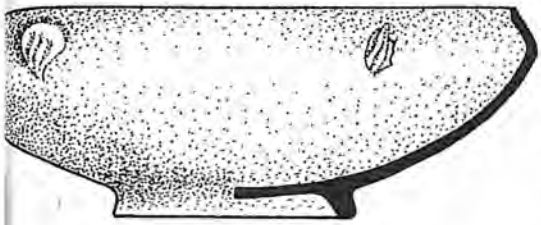
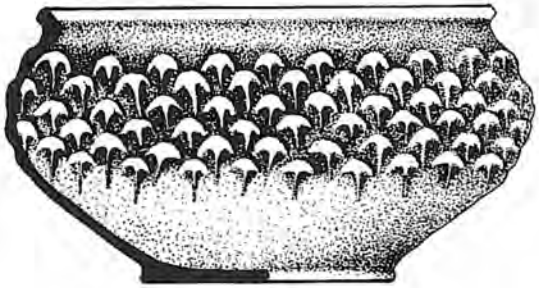


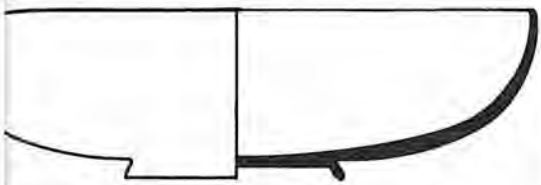
TABLE XXX. BOWLS AND CUPS. 1. Type 4a; 2. type 5; 3. type 6; 4. Type 6a; 5. type 7; 6. type 1(cup).



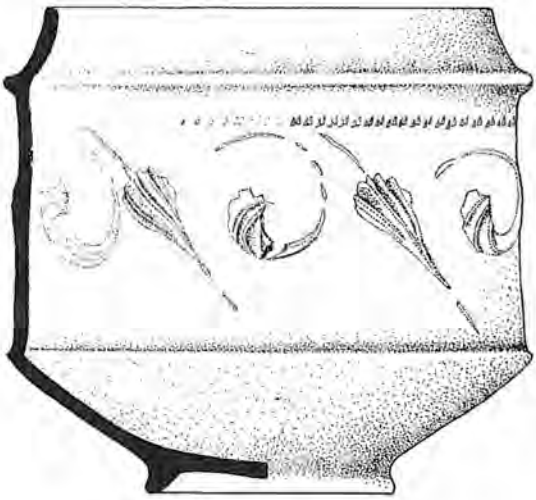
1↑



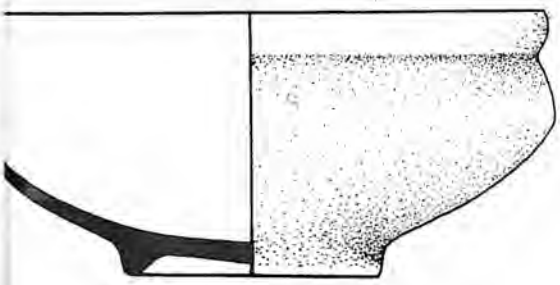
4↑



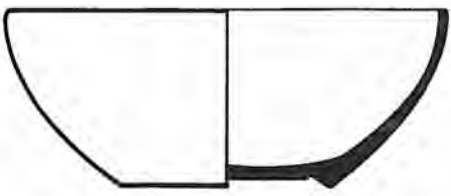
2↑



5↑

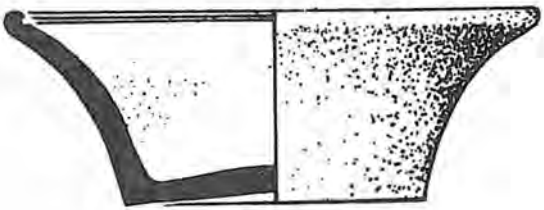


3↑

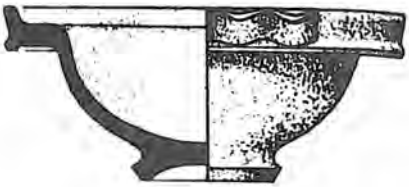


6↑

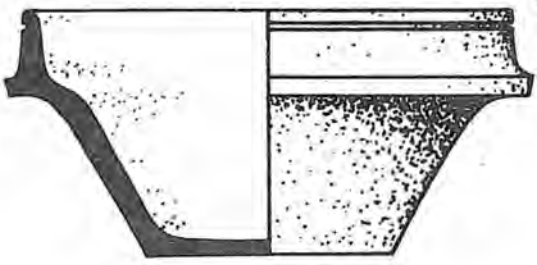
TABLE XXXI. CUPS. 1. Type 2; 2. type 3; 3. type 4; 4. type 5; 5. type 6; 6. type 6a.



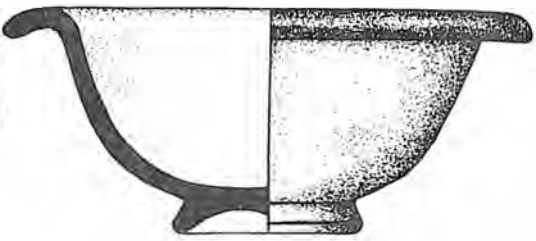
1↑



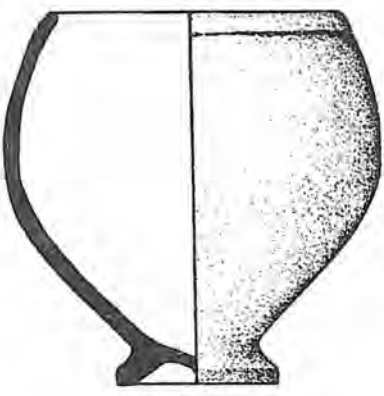
4↑



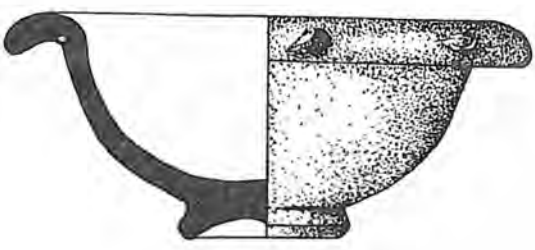
2↑



5↑



3↑



6↑

TABLE XXXII. CUPS AND JUGS. 1. Type 7; 2. type 8; 3. type 9; 4. type 1; 5. type 1a; 6. type 2; 7. type 2a. 8—9. type 2b.

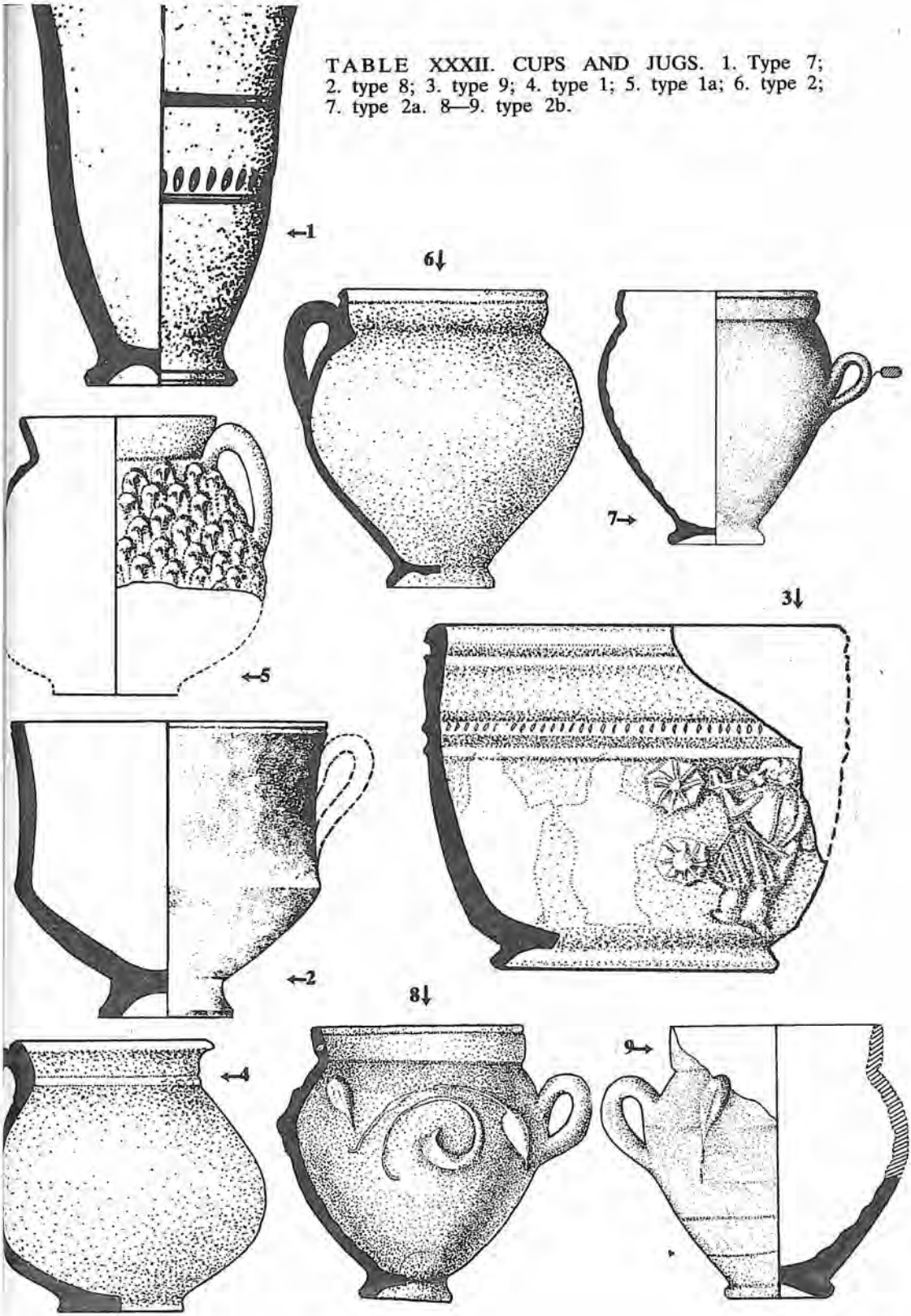
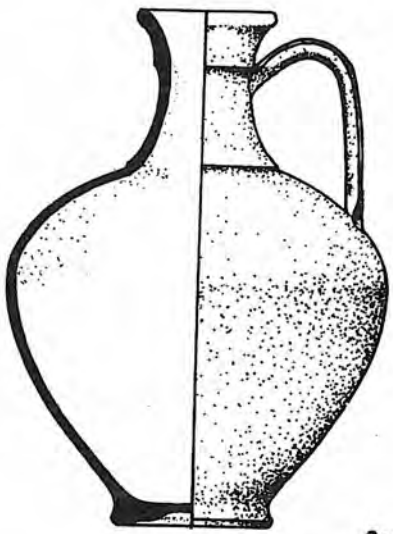
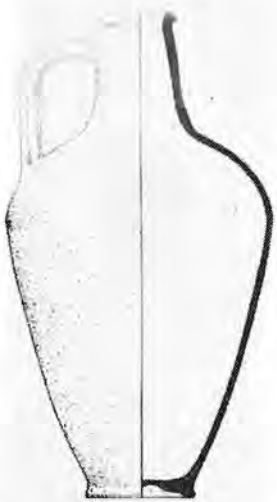


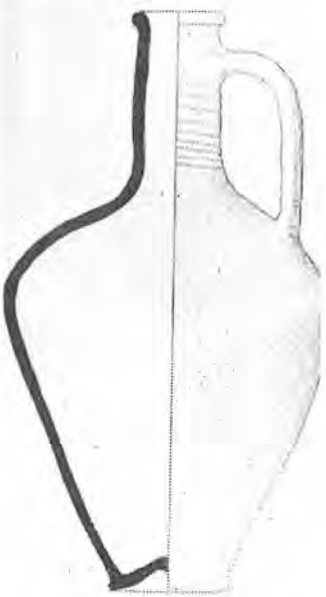
TABLE XXXIII. JUGS. 1. Type 1; 2—3. type 2; 4. type 3; 5. Type 4; 6. type 5.



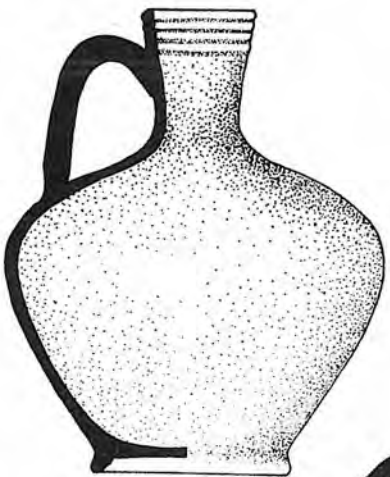
1↑



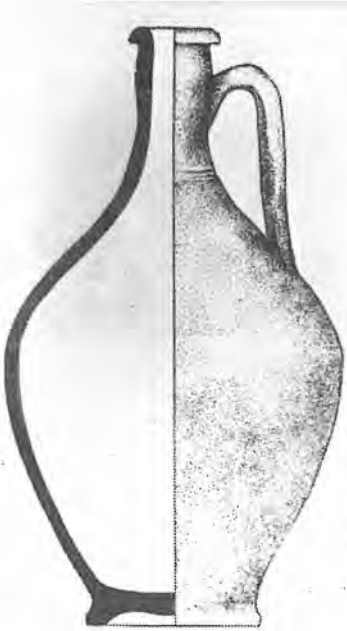
2→



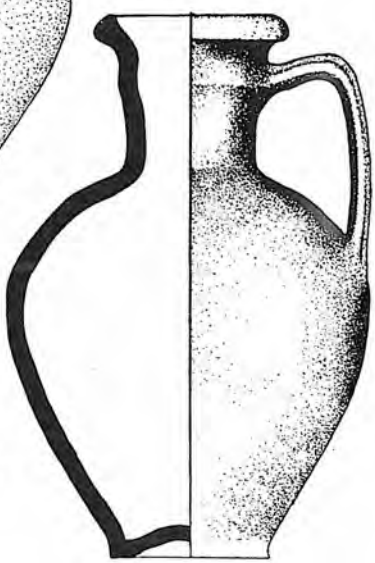
3↑



5↑



←4



6→

TABLE XXXIV. JUGS, AMPHORAE AND AMPHORA—LIKE EARTHENWARE. 1. Type 6; 2. type 7; 3. type 1; 4. type 2; 5. type 2a; 6. type 3.

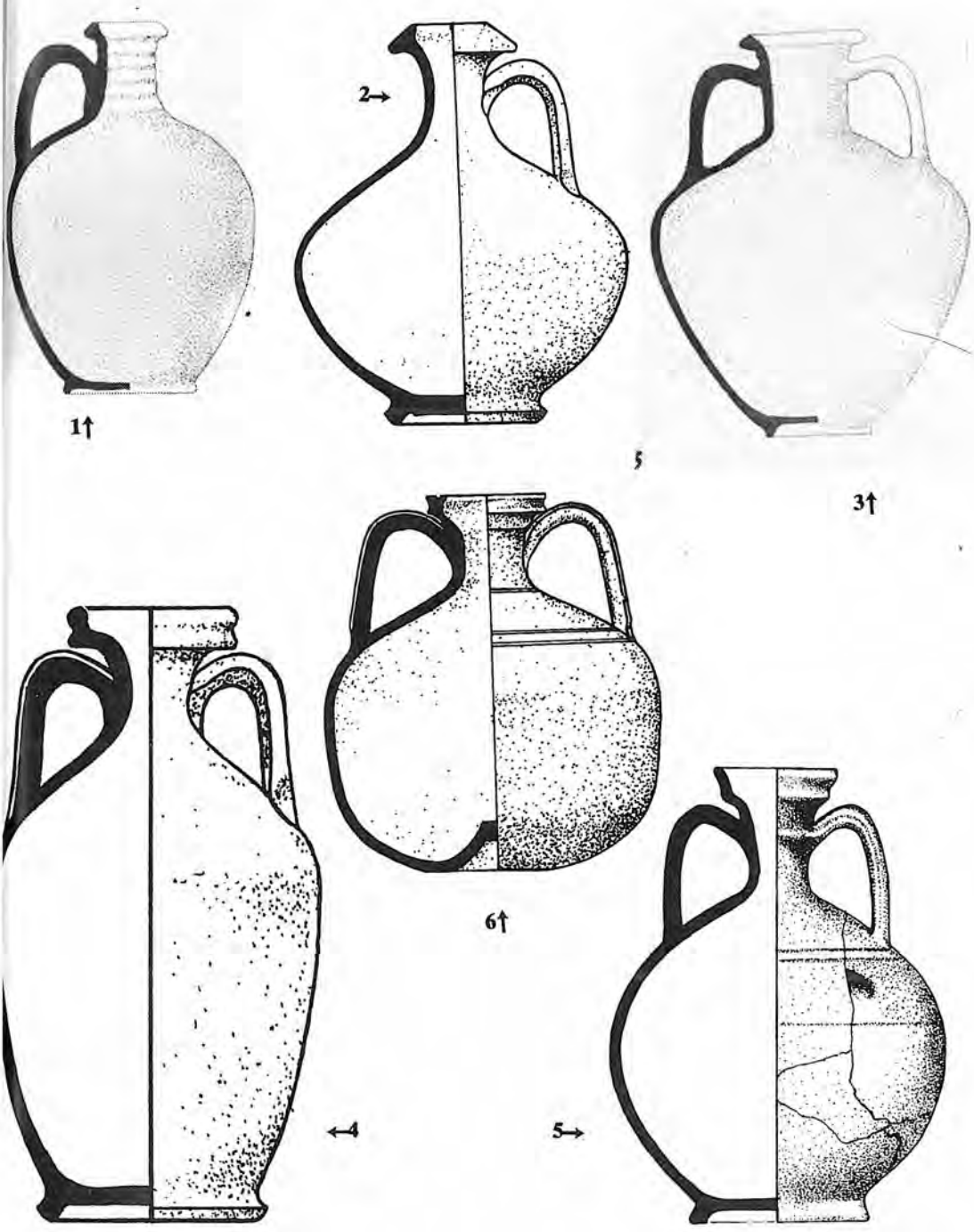
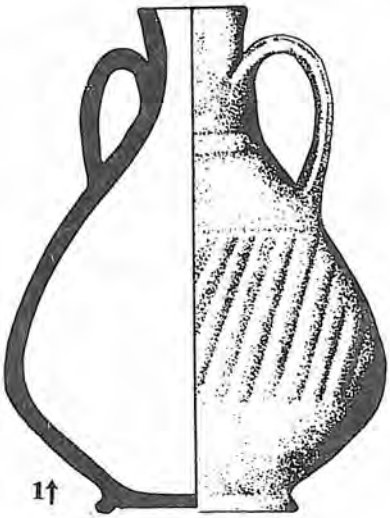
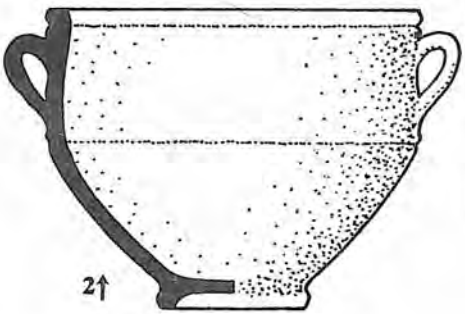
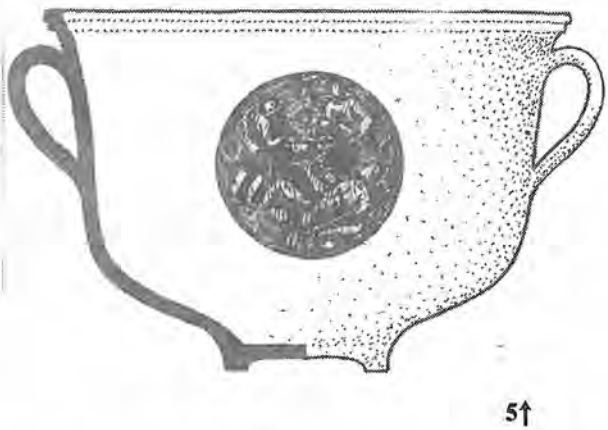
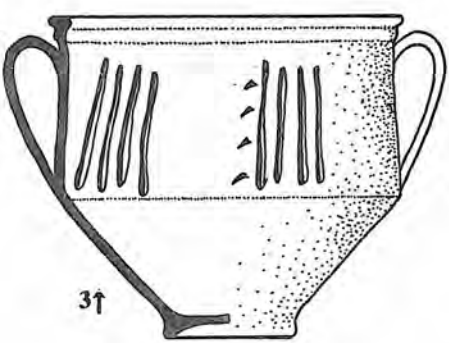


TABLE XXXV. AMPHORA-LIKE EARTHENWARE AND TWO-HANDLED EARTHENWARE. 1. Type 4; 2. type 1; 3. type 1a. 4. Type 1b; 5. type 1c; 6. type 2.









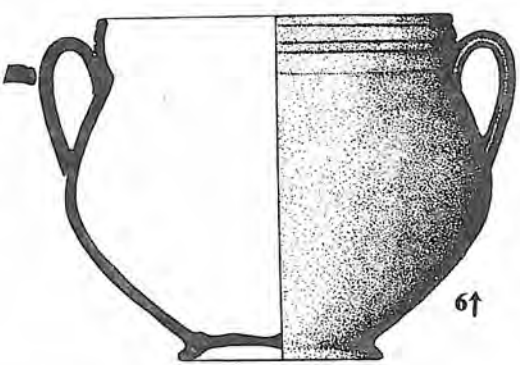
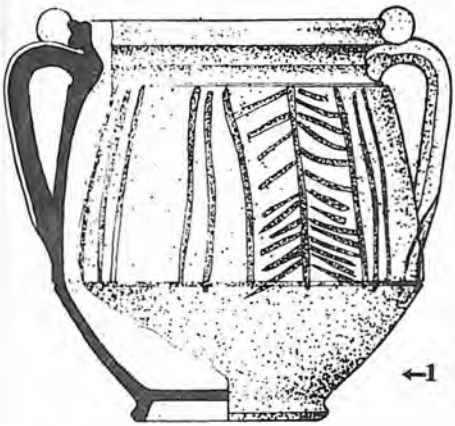
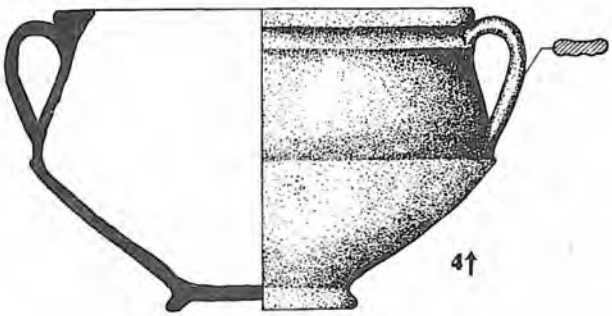
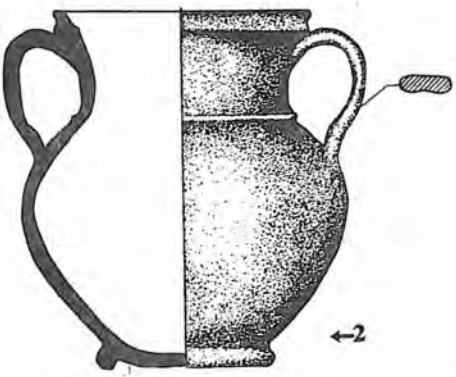


TABLE XXXVI. TWO-HANDLED EARTHENWARE. 1. Type 3; 2. type 4; 3. type 4a. 4. Type 5; 5. type 6; 6. type 6a.





5↓



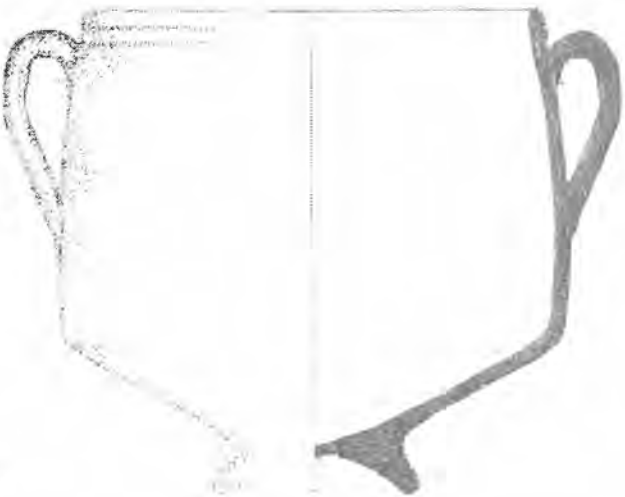
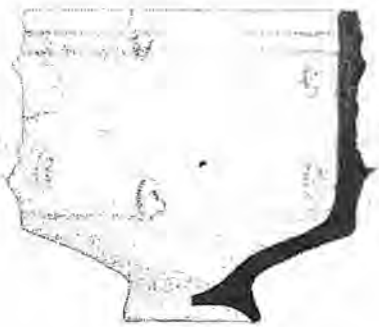


TABLE XXXVII. TWO-HANDLED EARTHENWARE. 1. Type 6b; 2. type 7; 3. type 8; 4. Type 8a; 5. type 9; 6. type 9a.



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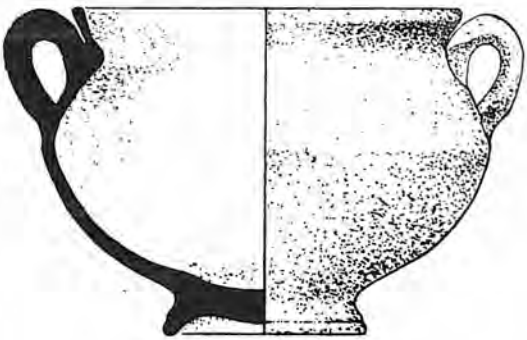
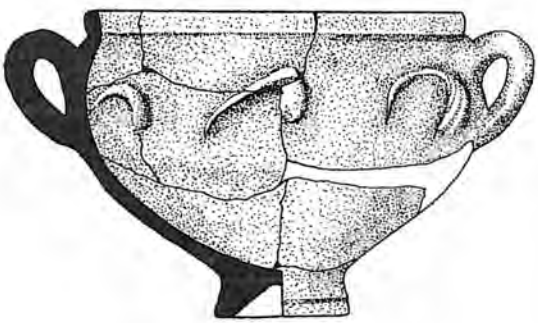
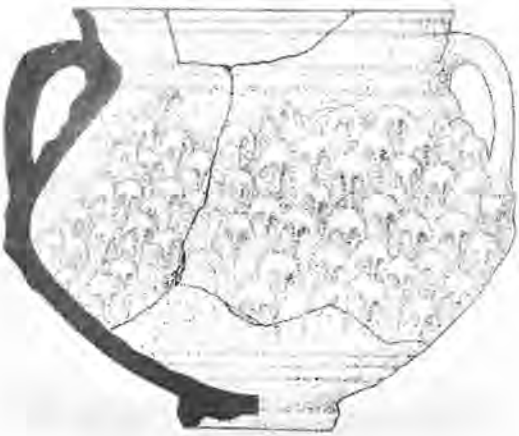
2↑



5↑



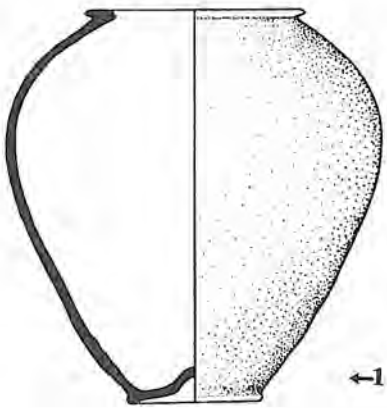
3↑



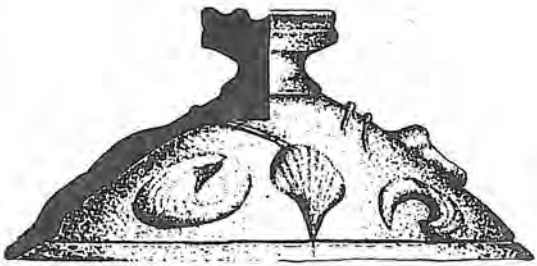
6↑

TABLE XXXVIII. TWO-HANDLED EARTHENWARE. 1. Type 9a; 2. type 10; 3. type 11; 4—7. type 11a; 8. type 11b.

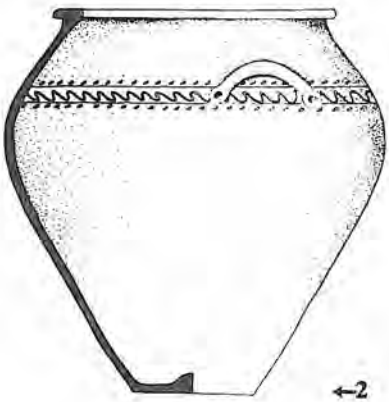
TABLE XXXIX. JARS AND LIDS. 1. Type 1; 2. type 2; 3—6. lids.



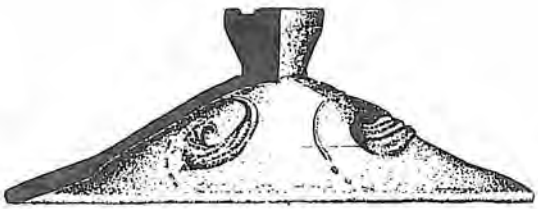
←1



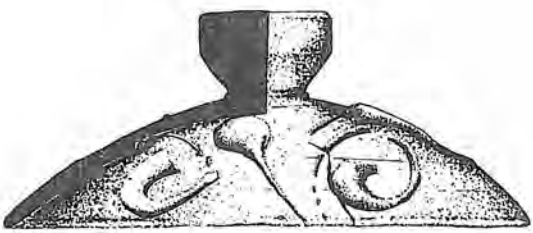
4↑



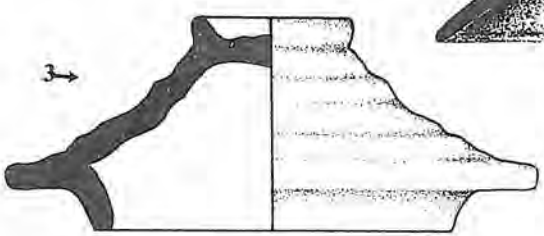
←2



5↑

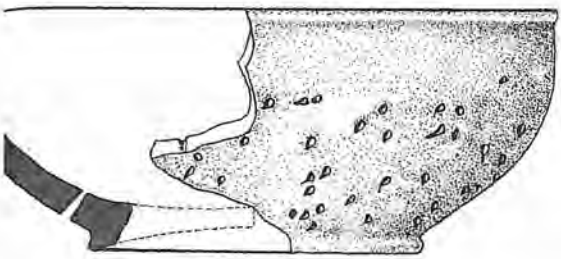


6↑

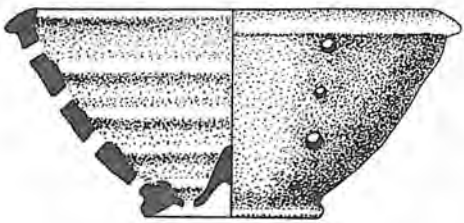


3→

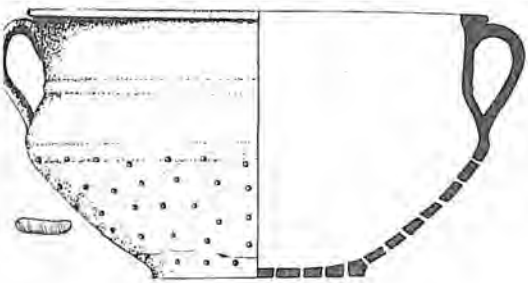
TABLE XL. SIFTERS AND CENSERS. 1. Type 1; 2. type 2a; 3. type 2b; 4. Censers for domestic use. 5. Type 1 and 6. type 2 — censers for funerals.



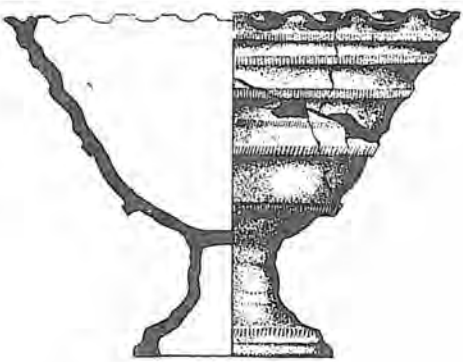
1↑



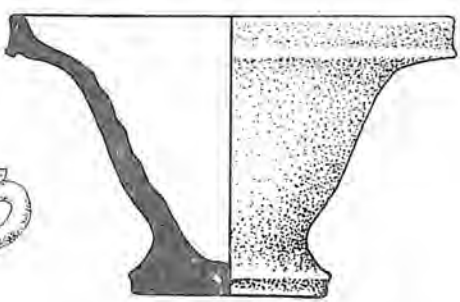
4↑



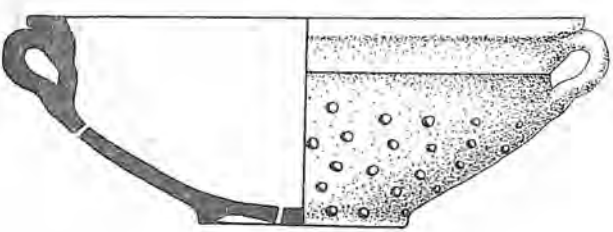
2↑



5↑

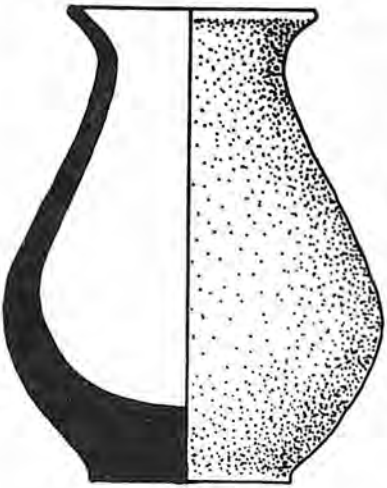


6↑

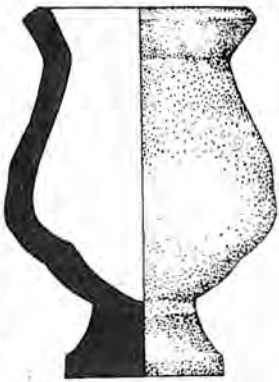


3↑

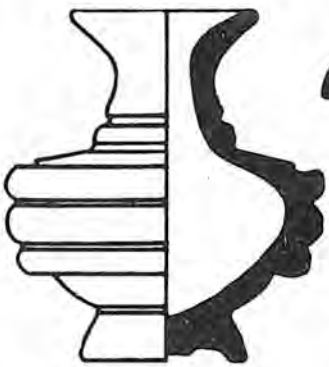
Table XLI. VARIA.



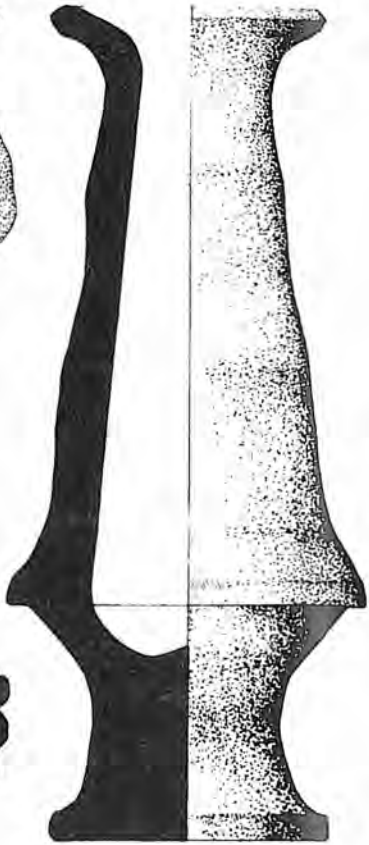
1↑



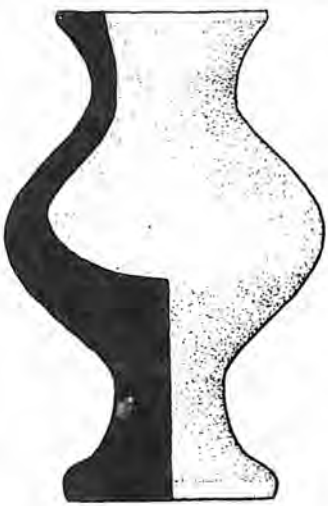
3↑



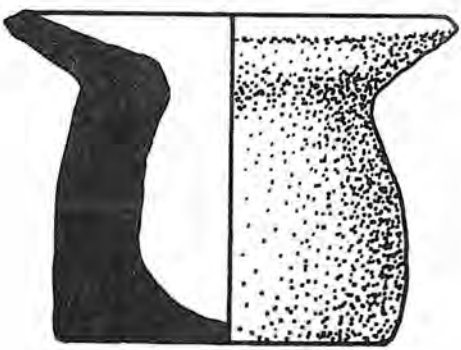
4↑



5↑



2↑



6↑

TABLE XLII. DISHES AND BOWLS. 1. Type 1; 2. type 1a; 3. type 2; 4. type 3; 5. type 3a; 6. type (bowl).

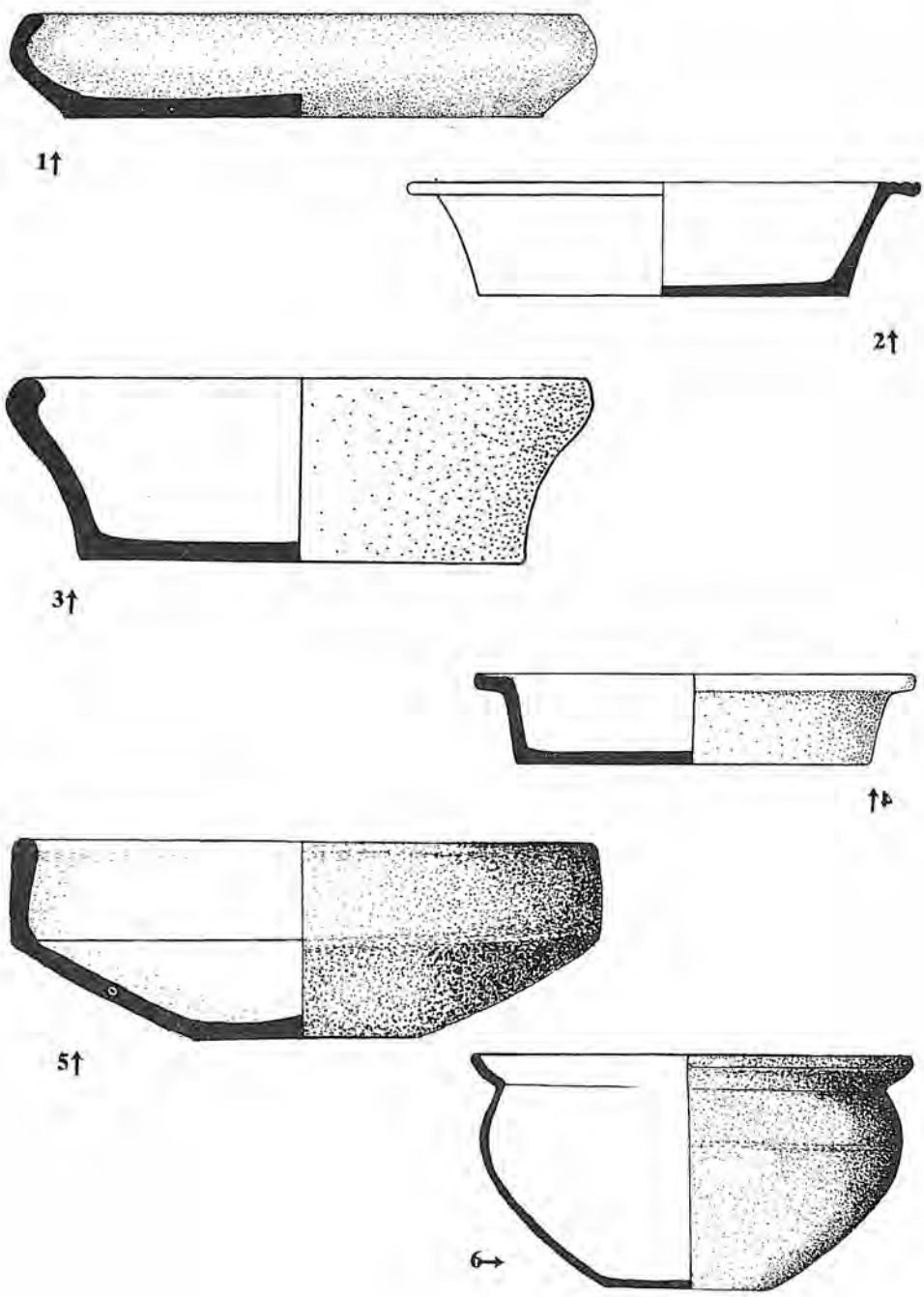
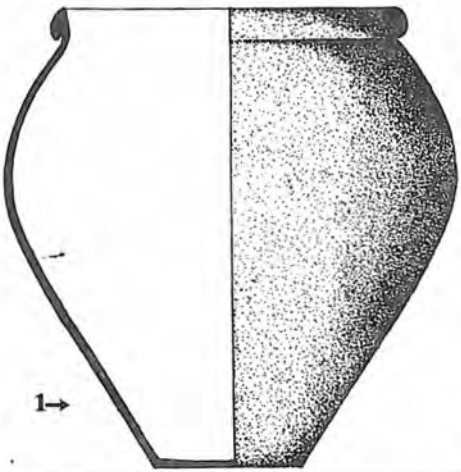
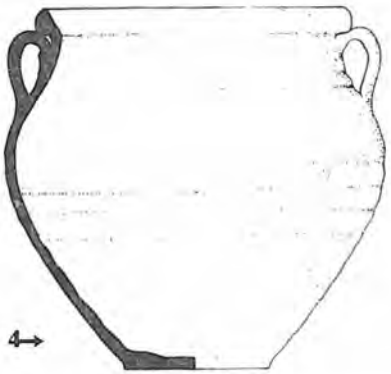
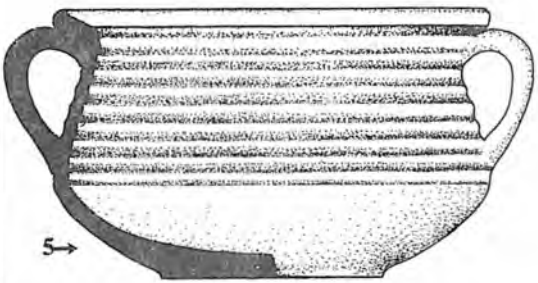
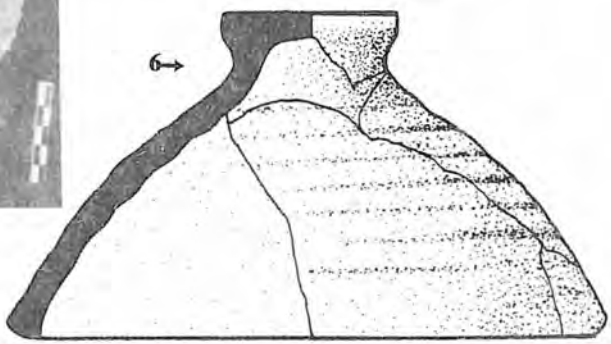


TABLE XLIII. EARTHENWARE POTS AND LIDS. 1. Type 1; 2. type 2a; 3. type 2b; 4. type 3; 5. type 3a; 6—7. lids.









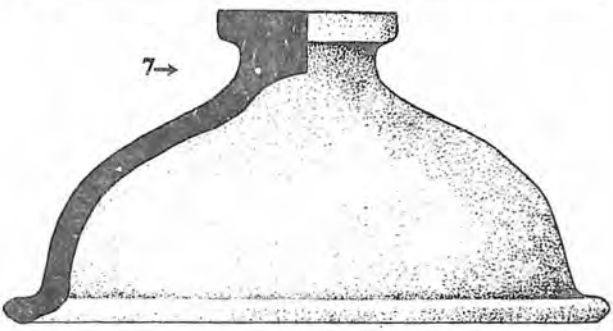


TABLE XLIV. LIDS AND EARTHENWARE. 1—4. Lids. 5. Oenochoe. 6. Three-legged earthenware. 7. *Kernos*.

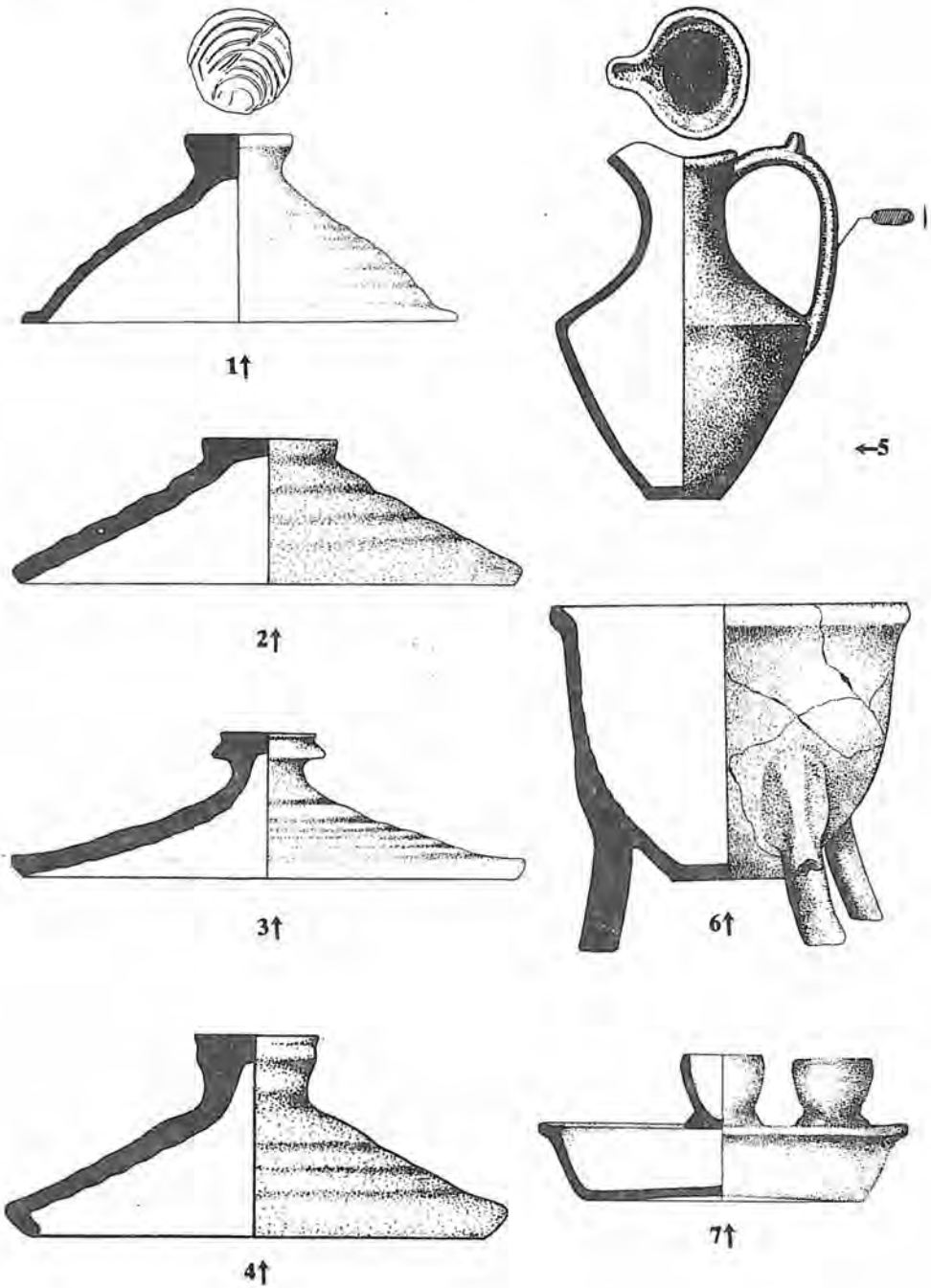


TABLE XLV. 1. Vessels for food and liquids. 2. Hand-made clay urn. 3. Clay urn made on the potter's wheel. 4. Hand-made cups. 5—6. Cups made on the potter's wheel.

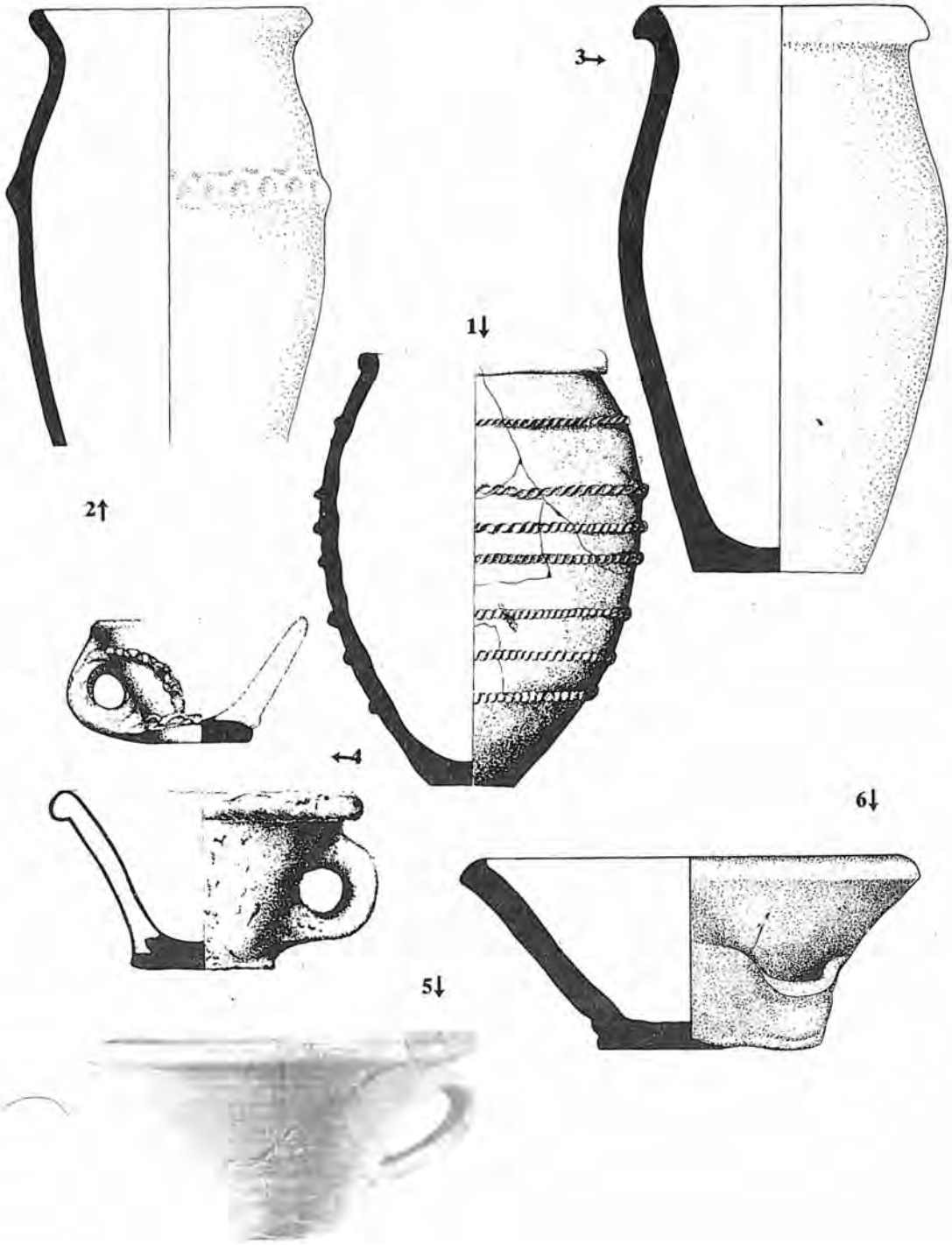
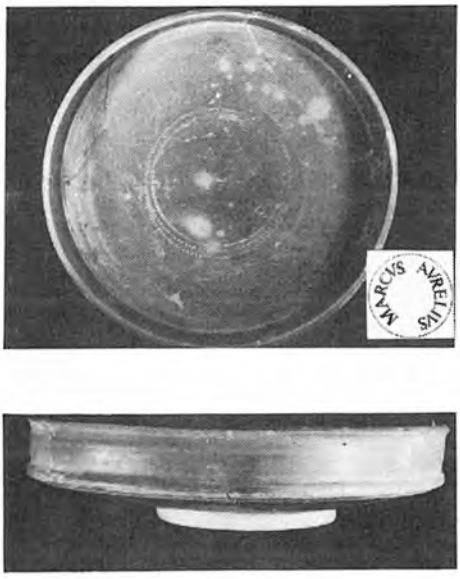


TABLE XLVI. FINE CERAMICS-dishes. 1, 4, 5, 6. Type 1, 3, 4, 4a (Pavlikeni). 7. Type 8 (Hotnica). 8. Type 5 (Kalvaka). **Bowls** 2, 3. Type 2 (Pavlikeni) 9. Type 1b (Butovo)



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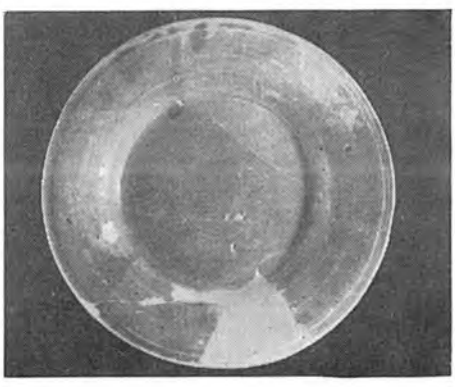

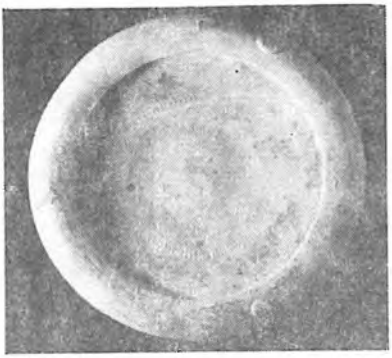

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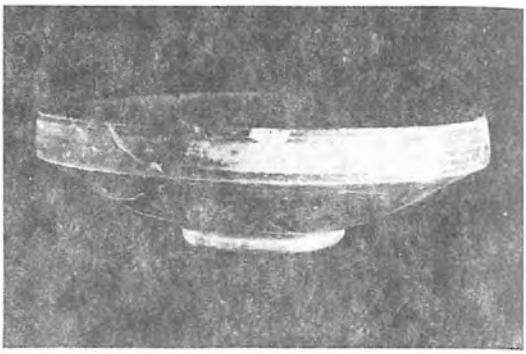
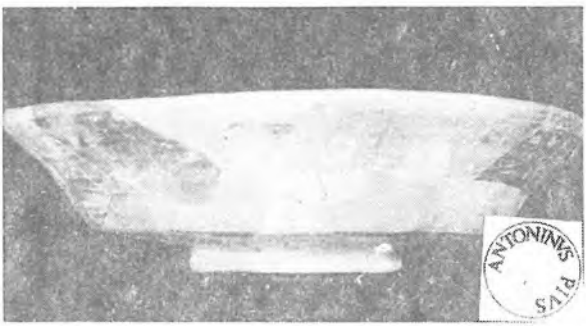
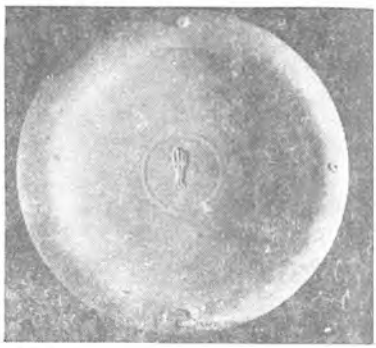


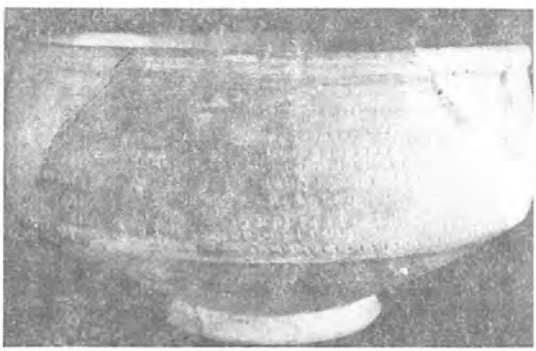
7↑



8↑

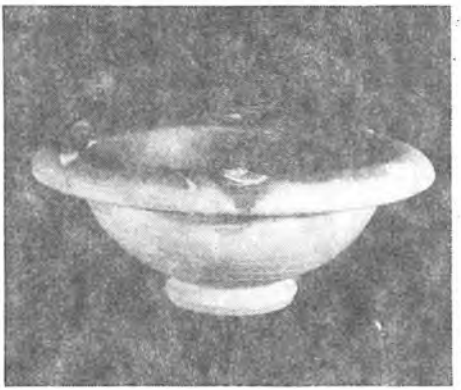


6↑



9→

TABLE XLVII. FINE CERAMICS. **Cups** 1, 4, 5. Type 6a, type 2 (Pavlikeni) Type 4. (Pavlikeni). 2. Type 3. (Kalvaka) 3. Type 1 (Hotnica). 6, 7. Type 1. (Kalvaka and Pavlikeni). 8. Type 2. (Kalvaka) 9—11. Type 1. (Butovo and Hotnica).



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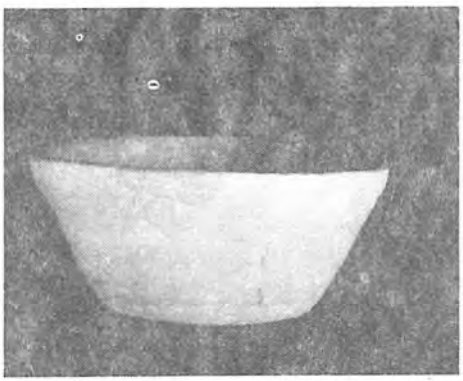

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TABLE XLVIII. FINE CERAMICS. Two-handled earthenware. 1. Type 6. (Kalvaka). 2, 3. Type 9. (Hotnica and Pavlikeni). 4. Type 10. (Butovo). 5. Type 7. (Pavlikeni). 6. Type 9a (Butovo). 7. Type 11. (Butovo). 8. Type 11a (Butovo). 9. Type 1b (Pavlikeni). 10. Type 2 (Hotnica). 11. Type 5. (Butovo). 12. Type 11b (Kalvaka).

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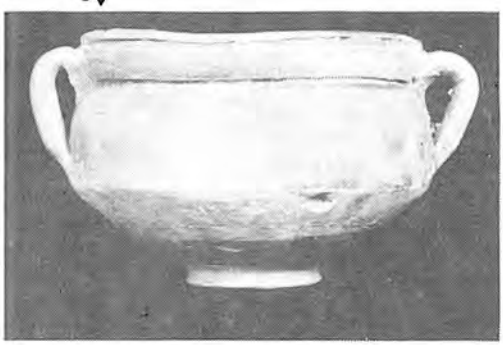

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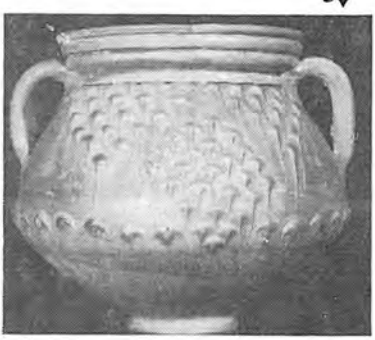

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TABLE XLIX FINE CERAMICS. Amphora-like Earthenware. 1. Type 3. (Kalvaka). 2. Type 2a. (Hotnica). 3. Type 2. (Kalvaka). 5, 6. Type 4 (Butovo and Hotnica). **Earthen jugs** 7. Type 1. (Hotnica). 8. Type 4. (Kalvaka). 9. Type 7. (Kalvaka).

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TABLE L. FINE EARTHENWARE AND CERAMICS USED IN EVERYDAY LIFE. **Eearthen jars** 1. Type 2. (Butovo). 2, 3 Type 1. (Pavlikeni and Butovo). **Censers** 4. See T.XI, 4 (Pavlikeni). 5. Type 1. (Hotnica). 6. Type 2. (Hadžidimitrovo). GREYISH-BLACK EARTNENWARE. **Cups** 7. See T. XLV, 5, 6. (Pavlikeni). **Kernos** 8. See T. XLIV, 7. (Butovo). **Bowls** 9. See T. XLII, 6. (Hotnica).

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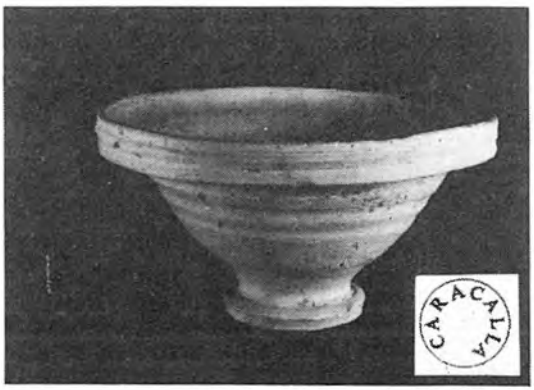
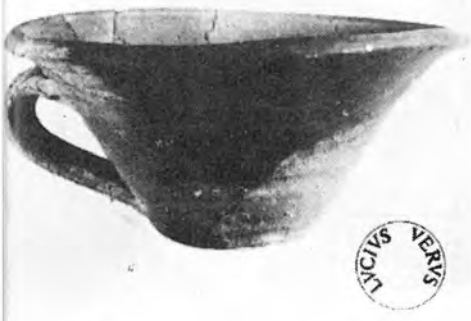


6↑



7↑

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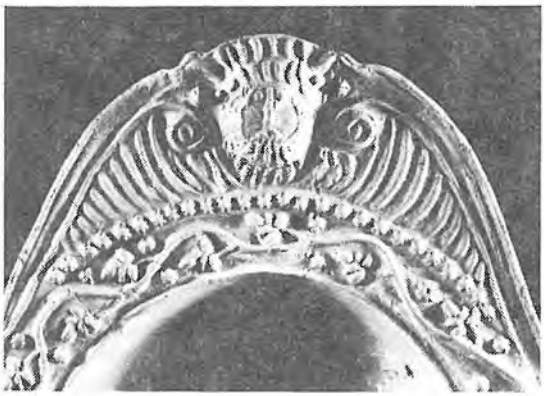
9↓

TABLE LI. TRAYS AND TERRACOTTA. 1—2. Trays — 3rd century (Butovo). 3. Clay mould for trays — 3rd. century (Butovo). 4, 5, 7. Terracotta — 3rd-4th century (Butovo). 6.Terracotta — 2n.



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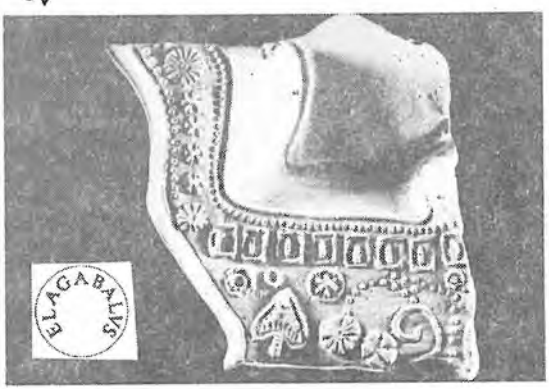

4↑

5↓

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7→

TABLE LII. LAMPS AND LAMP MOULDS. 1. Clay mould (imported at the end of 1st-beginning of the 2nd century (Pavlikeni). 2. Lamp with marking (FORTIS) (Kalvaka)— end of the 1st — beginning of the 2nd century. 3. Clay lamps — 3rd century (Butovo). 4. Clay lamp — 2nd-3nd century (Butovo). 5, 6. Clay lamps — 2nd-3nd century (Butovo and Svištov). 7. 8. 9. Moulds for lamps — 3rd century (Butovo). 10—12. Clay lamps 3rd century (Butovo).

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2→

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EL·AGABALVS
8
9
10
SEVERVS ALEXANDER

←11

12→

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