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A NEW POTTERY MANUFACTURING CENTER AT *NOVAE*

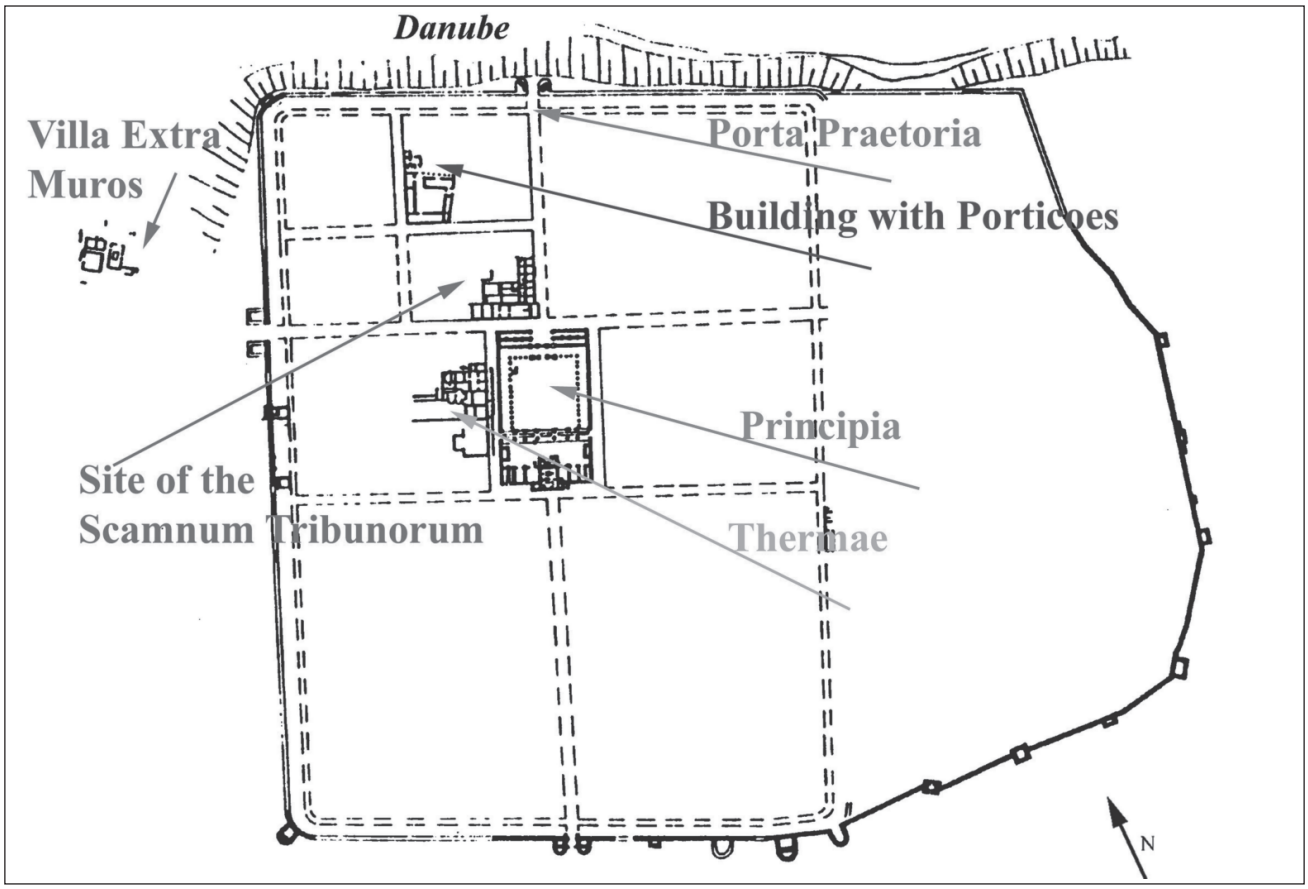

Fig. 1: Plan of *Novae* in the 3rd and 4th century (P. Dyczek/J. Janowski)

The site of *Novae* in northern Bulgaria is known foremost as a fortress of the First Italic Legion[1]. Its history after the Gothic raids of the mid 3rd century AD is not as well known, simply because it has become recently the object of investigation carried out by the Center for Archaeological Research of Warsaw University[2] (**fig. 1**). A change in the architecture inside the old *castrum* occurs at about this time. The abandoned legionary buildings, such as the army hospital, were then replaced by civilian architecture[3], and a section of the fortifications was added on the east[4]. Alterations can be observed also in the immediate vicinity of the old fortress.

Pottery kilns had been noted on the Danube riverbank some 100 m east of *Novae* already in 1960[5]. The riverbank here rises from 30 to over 32 m above sea level, indicating that the manufacturing center had been located originally in a somewhat hilly area that seems not to have been leveled.

Investigations in this area were conducted in 2003. The northern part of this complex has been carried away by erosion. A wall 0,70 m wide was recorded, made of irregular stones, presumably reused, bonded in earth. The wall enclosed a rectangular area that measures today over 40 m from east to west and about 20 m from north to south. The remains of four kilns have been discovered in this area (**fig. 2**). The complex lay at the mouth of the small river Dermen-Dere which flows from the west; on the south and

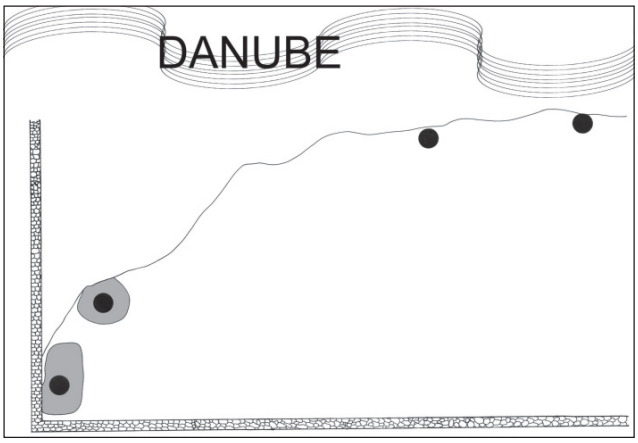

Fig. 2: Sketch-pan of the pottery manufacturing center at *Novae* (M. Lemke)

[1] cf. Dyczek et al. 2001.
[2] Dyczek 1998, 27–28.
[3] Dyczek in press.
[4] Dymitrow et al. 1965, 115–124.
[5] Majewski et al. 1961, 87 fig. 16.

Fig. 3: Lamps from the pottery center (photo J. Recław)

east it was limited by a natural slope and on the north by the Danube riverbank. A study of the stratigraphy has revealed that the kilns had been constructed in an open area without earlier architecture and operated for a relatively short time as no further or later architectural phase could be discerned. Basically, under the topsoil there appears just one dark brown occupational layer, 0,30 m thick, containing smudges of charcoal and ashes. Underneath is virgin loess. The combined thickness of the kiln-related deposits is about 1,20 m on average. The pottery manufacturing center was abandoned speedily to judge by the fired lamps left in the kilns and objects awaiting firing found next to the kilns. Scattered over the entire area are sherds of cooking pots and flat roof tiles. It is believed, based on the fabric, that these ceramic products could have been manufactured on the spot.

Only one kiln has been preserved sufficiently to permit a reconstruction of its orientation and structure. The *praefurnium* was located on the north side, that is, facing the Danube. The orientation should not be assumed to be accidental. Taking into account the lie of the land, it surely ensured better ventilation of the kiln. Only the bottom part survives, sunk 0,96 m into the ground, and part of the side walls of the dome, rising to 0,61 m. In the underground part, a mud wall, 0,44 m wide and 0,70 m long, ran in the middle; this wall supported the firing grid. It reached the back wall of the domed top which was also made of mud and measured 0,50 m in thickness. The inside surface of this wall, as well as of the firing grid is covered with a layer of glazed mud a few centimeters thick, created in consequence of the firing operations inside the kiln. Its presence points to temperatures around 1000 degrees being achieved inside the kiln. The mud walls of the kiln are burnt through and are consequently red in color. This particular arrangement of the firing grid base and domed top excludes a determination of the shape of the kiln, whether round or oval. All that can be said is that the curvature of the walls visible in plan rules out a rectangular kiln. This kiln (no. 2) finds parallels in the so-called type I kilns from the pottery manufacturing workshops at *Durostorum*[6] and the kilns discovered at Teliţa, in a place known under the local name of "Izvorul Maicilor"[7] and *Romula*[8]; finally, there are the kilns from the Butovo ceramic workshops[9]. The kiln measured about 2,60 m in diameter, and its estimated inside area ran to c. 5,5 square meters. The dimensions of the other kilns cannot be estimated based on extant remains, but the archaeological evidence is sufficient to permit the conclusion that they were all virtually identical. The fill of the explored kiln contained eight fired lamps representing a single type. Next to the kiln there were three formed but unfired lamps. Also found inside the kiln were sherds of cooking pots. Cooking ware and flat roof tiles lay scattered around kilns nos. 1 and 4. The ruins of kiln no. 3 yielded the only piece of *terra sigillata* to be recovered from this area.

The assemblage proves beyond doubt that the kilns were used for the manufacture of lamps, cooking pots, a limited quantity of tableware – *terra sigillata* – and flat roof tiles. The mutual position of the various finds indicates that lamps, cooking pots, roof tiles and cooking pots were fired together; presumably only the single vessel representing tableware had to be fired separately, simply because of technological requirements, as *terra sigillata* needed to be fired in a different temperature range and probably required the application of different procedures regarding time, oxidizing atmosphere etc.

The very good condition of the lamps found in kiln no. 2 predestined them for study. Identical lamps had been found at *Novae* before and in many places[10]. Only one type is represented (**fig. 3**). The length is between 9,0 and 9,3 cm, the diameter of the round body 7,0 cm. The reservoirs were wheel-made, presumably shaping a flat round piece of clay with the thumb-traces of turning can be seen inside the lamps. This mode of execution resulted in flat bases. There are no factory marks. The filling hole, which is quite big – 1,8 to 2,0 cm in diameter – has a raised edge around it. The nozzle was attached only after the body had been turned and an appropriate opening pierced in its side – this process is clearly evi-

[6] Muşeţeanu 2003, 16–19, figs. 3–5.
[7] Baumann 1983, 90, fig. 34.
[8] Popilian 1997, 8–10 figs. 6–8.
[9] Sultov 1985, tabs. VI,3; IX,2; X; XI.
[10] cf. Dymitrow et al. 1965, 129 fig. 26d.

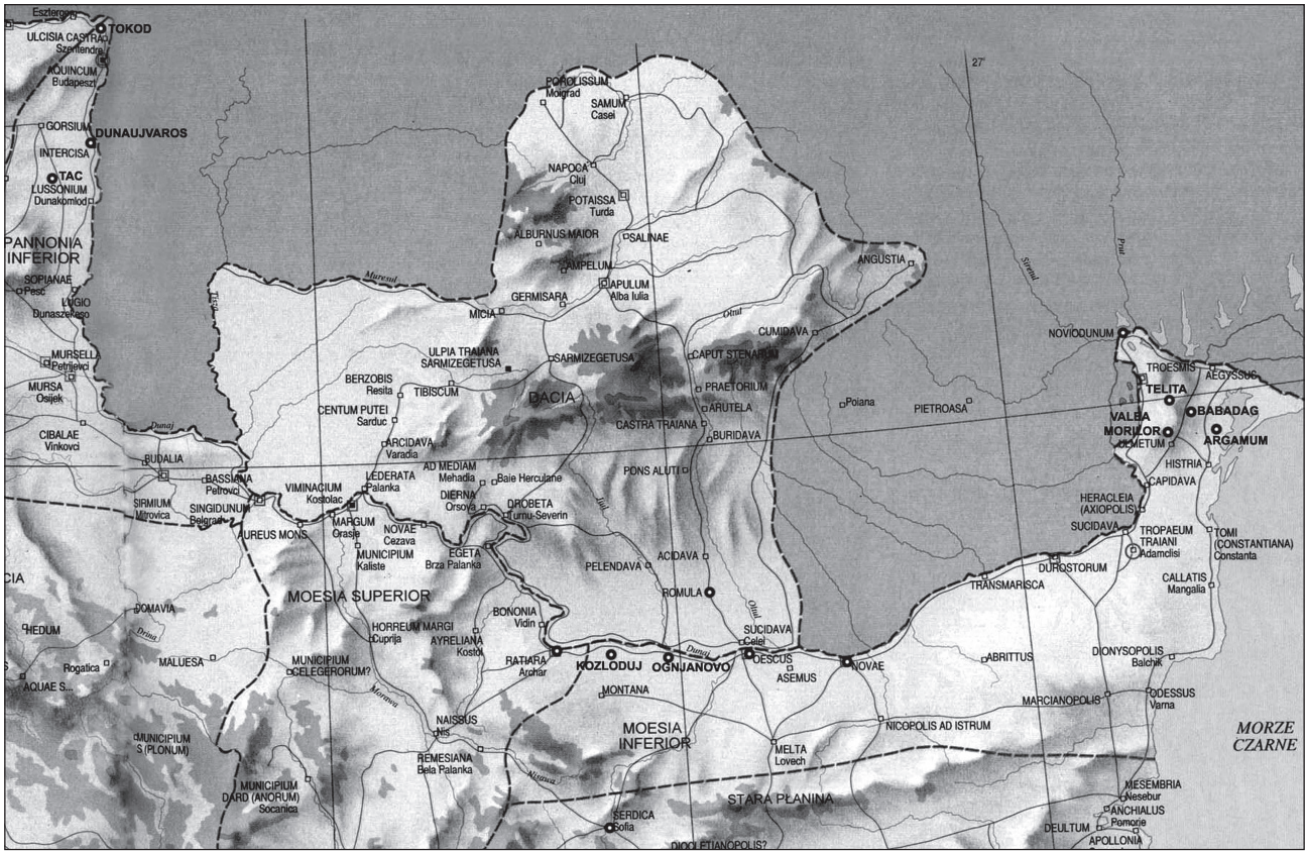

Fig. 4: Distribution of Kuzmanov type XL lamps in the Lower Danube Area (elaborated P. Dyczek).

dent inside the lamp. The broad nozzle – 1,5–1,8 cm wide – has obliquely cut surfaces, and the tip is slightly wedge-shaped. The handles were made of clay straps formed with the big finger, the technique leaving a groove along the top. The top end was first attached to the upper part, the strap was then curved as required and the bottom end attached to the body. In volume the lamps were all similar – about 23 ml; experiments have proved this amount of oil to suffice for 20 hours of non-stop burning.

All the lamps – as well as the cooking vessels – were made of the same kind of clay. It is presumably a local clay that is found in places on the Danube riverbank. After firing it turned from brown to dark gray-brown as a result of a reducing atmosphere in the kiln. The unfired lamps all show a brown-colored fabric. It did not contain any mica; instead fine sand was mixed in as temper, imparting onto the finished product a characteristic rough surface texture.

The lamps discovered in the kiln complex find parallels from other sites located not that far from *Novae* on the Danube and in *Serdica* (Sofia)[11]. One of these places is Kozloduj[12]. If we take into consideration the dimensions of these lamps and foremost the fabric, it seems quite probable that these lamps could have been produced at *Novae*. It turns out that lamps of an identical type discovered at other sites are covered with a brown slip and are made of better quality clay[13].

The characteristic execution and form of the discussed lamps, as well as their distribution patterns (**fig. 4**) permit an analysis of their range, chronology and typology.

At the present stage of research, they seem to have been produced and used mainly in *Dacia*, *Moesia Superior* and Thrace. Overall, however, they appear to be typical of the Lower Danube[14]. Later, they also appeared in *Pannonia*[15].

The earliest examples are dated to the last quarter of the 3rd century[16], the latest to the 5th century AD[17]. One view holds them as prototypes of 6th century lamps[18], and even medieval types[19].

Beside *Novae*, Kozloduj, *Ratiaria*, *Oescus, Serdica*[20], and Ognjanovo[21], this type of lamp was also discovered at sites lying in the region of Oltenia: *Romula*[22], and in Dobruja: Valea Morilor, *Noviodunum, Argamum,* Babadag/Topraichioi[23], *Callatis*[24], and also the region of Teliţa, a site known locally as "La Pomăsita"[25]. Starting from the early 4th century AD, they are also known from Pannonia at Tókod[26], Duna-

[11] STANČEVA/GRIGOROVA 1976, 211–213 figs. 3–5.
[12] Not published — National Museum Sofia: NAM nos. 26, 79.
[13] KUZMANOV 1981, 16.
[14] KUZMANOV 1992, 45.
[15] IVÁNYI 1935, 16–17. — SZENTLÉLEKY 1969, 132.
[16] PONSICH 1951, 31. — KUZMANOV 1992, 45. — SZENTLÉLEKY 1969, 132.
[17] IVÁNYI 1935, 20. — VIKIĆ-BELANČIĆ 1975, 61–62.
[18] SZENTLÉLEKY 1969, 132. — ALRAM-STERN 1989, 54.
[19] BRONEER 1930, type XLIII,124.
[20] KUZMANOV 1992, 46.
[21] KUZMANOV 1981, 19.
[22] POPILIAN 1997, 13–14 tab. 29.
[23] BAUMANN 1997, 50–51.
[24] HARTUCHE/BOUNEGRU 1982, 227 pl. V/2.
[25] BAUMANN 1983, 125 fig. 53.
[26] MÓCSY 1981, 107–108 Abb. 15; 16.

újváros and Tác, in the repertory of glazed products[27]. Single examples are known from the western parts of the Empire, but also from Corinth[28], where a late glazed variant occurs[29].

Lamps of the said type are included in most typologies. According to D. Iványi, it is an early variant of types XXI and XXII[30], Ponsich type VI[31]; Deringer – type 2[32], Alicu/Nemes type V[33], in G. Kuzmanov's typology they are assigned to types XXXIX, XL and XLI[34], and they are classified by E. Alram-Stern as *runde Tonlampen*[35]. Minor differences have been noted in the various typologies; Kuzmanov, for example, introduced a number of variants of these lamps[36].

The typological derives from a number of reasons. One reason is the relatively long duration of the type, which naturally resulted in minor but distinct differences of form. Secondly, the bodies of these lamps were wheel-made, while the handles and nozzles formed by hand and attached; this also resulted in a slight differentiation of the form. Thirdly, the lamps were produced in a number of manufacturing centers and even though one model presumably existed, permitting wheel-made lamps to follow a certain standard, some departures from the model must have occurred[37]. Furthermore, in different periods the surface of the lamps was slipped or glazed, distinguishing them in a natural way. Yet the shared characteristics predominate, both in terms of the technique, as well as volume and, not least, the basic tectonics of the shape.

What is the genesis of this form of lamp? The prototype apparently is among the 3rd century mouldmade lamps possessed of a round regular shape. This form naturally induced a practical solution, that is, imitating the form by turning it on the wheel. The strengths of the shape were thus retained: small size combined with maximum volume. A big filling hole facilitated filling the lamp with fuel and a big wick hole gave the same effect as the *Firmalampen* type – a bright light. The proposed typological series is illustrated here in **figure 5** starting with form Loeschcke VIII/Kuzmanov XXI[38], and progressing through Loeschcke X/Kuzmanov XXVI[39] to the wheelmade type. Taking into consideration the new discoveries from *Novae,* the chronology should be viewed differently from that presented by Kuzmanov.

The earliest is type Kuzmanov XL[40] – and the lamps from *Novae* belong to this type; it was followed by Kuzmanov XLI[41], with Kuzmanov XXXIX being the latest in the series[42].

These lamps, which were, as I have said already, widespread on the Lower Danube, became one of the prevalent types in the 4th century AD. This raises an important question about manufacturing centers. Kuzmanov held the opinion that *Serdica* was one of the most important centers at the turn of the 3rd century AD, producing slipped lamps[43]. The lamps from *Novae* come from this period and it seems that on a long section of the Lower Danube (from Dobrudja to *Moesia Inferior*) *Novae* was the most important center of their production, as indicated by the above-mentioned finds from Kozloduj or *Oescus.* Other centers of production were located in Oltenia, in Dobrudja, and starting from the 4th century AD also in *Pannonia*.

The genesis of the type is a separate issue. More precisely, it is rather a question about the sources of popularity of this type at the turn of the 3rd century AD. Kuzmanov believed a waning in the popularity of *Firmalampen*, which had been en vogue in the 2nd and 3rd centuries, stood at the root of this newfound success[44]. Studies of lamps of this type conducted at *Emona* appear to confirm this point of view[45]. Obviously with the reduction and ultimate cessation of the mass manufacture of *Firmalampen*, the market for lamps did not shrink and another type of lamp had to be produced on an equally massive scale. In all likelihood, there were two decisive factors. The product needed to be made of local sources of clay, not always of the best quality, and it had to be relatively easy to manufacture. Turning on the wheel made mass production viable. The lamps could be produced in the numerous pottery workshops operating in *Moesia Inferior* from the 2nd century AD, and later also in *Dacia* and *Pannonia*. This process must have been prompted and stimulated by historical events. After the Gothic raids economic ties were loosened and even broken. The strategic disposition of military units must have changed. For example, the ceramic workshops at *Durostorum* and the centers of Pavlikeni, Butovo and Hotniza near *Novae* worked mainly to meet the needs of the army stationed in the province[46]. During military action production must have been reduced and oriented more on the civil population of the provinces. The process is reflected in the repertory of manufactured pots. There is much less tableware and at the same time the number of simpler vessels, cooking ware and lamps grows substantially. The said breaking of economic ties also stimulated the development of local production centers. The discovery of kilns at *Novae* is the best example of this, the kilns having obviously produced cooking pots, lamps, building ceramics and a barely noted amount of tableware.

The *Novae* ceramic workshop went out of use in the first half of the 4th century AD, so it obviously did not operate for long. Taken out of historical context, this could appear strange. Not so, however, if it is remembered that virtually all of the pottery producing centers ceased to function at about the same time. It is likely a reflection of more general processes connected with the changes taking place in the Empire in the Constantinian period, including the progressive urbanization of the old military posts. The process of rebuilding local manufacturing centers, or rather small workshops

[27] Bónis 1992, 52. — Bánaki 1992, 74 Abb. 6.
[28] Broneer 1930, 124. — Deringer 1959, 388–395 Abb. 10. — Deringer, 1965, 58–63. — Kuzmanov 1992, 44.
[29] Broneer 1930, 122–125. — Menzel 1954, 102–104.
[30] Iványi 1935, 16–17; 20.
[31] Ponsich 1951, 36–38.
[32] Deringer 1965, 60.
[33] Alicu/Nemes 1977, 119.
[34] Kuzmanov 1992, 44–49.
[35] Alram-Stern 1989, 52–54.
[36] Kuzmanov 1992, 45–46.
[37] Scheibler 1976, 125.
[38] Loeschcke 1919, 237 ff. — Kuzmanov 1992, 25.
[39] Loeschcke 1919, 256. — Kuzmanov 1992, 37.
[40] Kuzmanov 1992, 46.
[41] Kuzmanov 1992, 46–47.
[42] Kuzmanov 1992, 44–45.
[43] Kuzmanov 1981, 16. — Kuzmanov 1992, 46.
[44] Kuzmanov 1981, 16.
[45] Istenič et al., 2003, 83–91.
[46] Sultov 1985, 18. — Muşeţeanu 2003, 14–16.

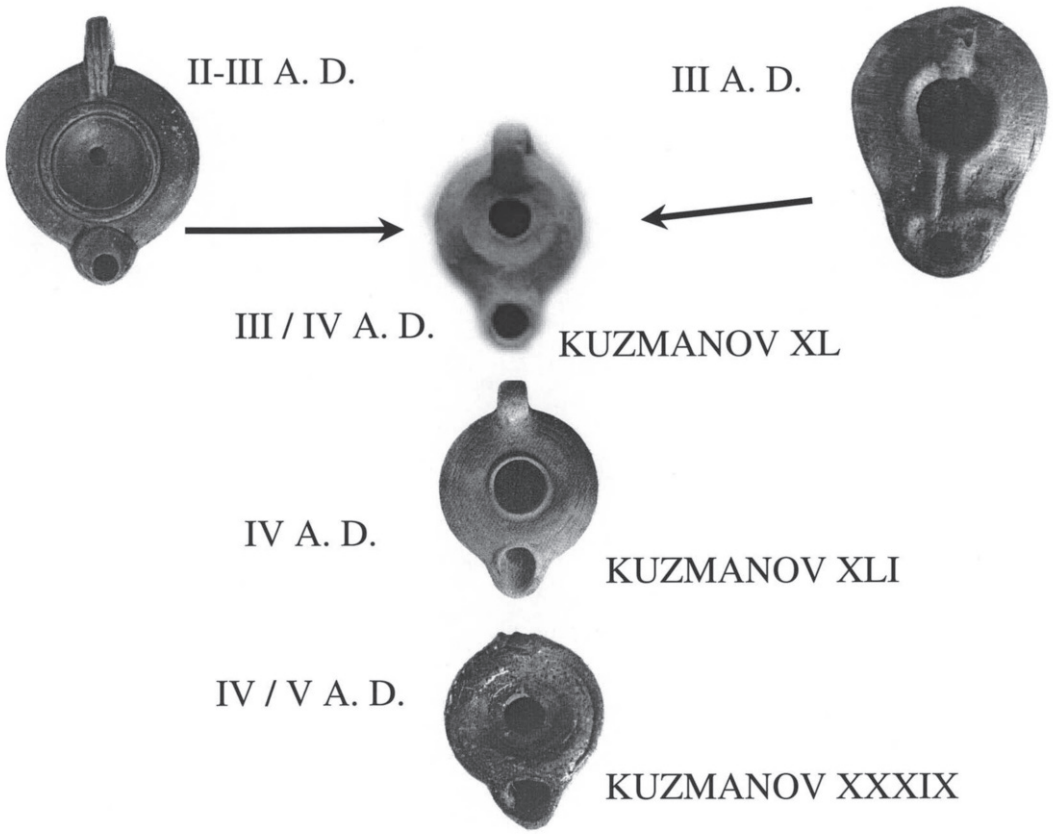

Fig. 5: Proposed typology (P. Dyczek)

often furnished with just one kiln, like at *Novae*, is not to be observed again until the 6th century AD[47].

The pottery manufacturing atelier of the second half of the 3rd century AD, discovered in 2003 at *Novae*, fits well in the overall picture of the development of ceramic production in the Lower Danube region. It is certainly a welcome and valuable addition to our knowledge of the subject.

[47] Majewski et al. 1961, 118 fig. 85.

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