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## Terra Sigillata from the Bay of Naples

### INTRODUCTION

For the present identification and presentation of terra sigillata produced in the Bay of Naples only samples from the consumption area were used, as it was not possible to have access to finds from the supposed production area. The following results therefore have to be regarded strictly as preliminary. The classification of samples is based mainly on finds from Velia, deriving from several excavations within the urban area, like the monumental building of Insula II and from the exploration of the fortifications, both in the Lower Town of Velia.<sup>1</sup> Further, finds from domestic contexts in the Eastern quarter of the town have been used.<sup>2</sup> Their date range comprises the Augustan period and the first half of the first century AD.

These samples from a consumption centre, which still belongs to the radius of regional exchange, have been complemented by a few samples from the important Augustan military camp at Haltern on the River Lippe in Germany<sup>3</sup> where imports might be seen as result of long termed export, but – in regard to their small number – could also be regarded as casual imports, related to the private property of individual persons. For **FACEM** our choice depended on the one hand on the attribution of some potters to the Puteolanean production on the basis of stamps, already going back to A. Oxé and H. Comfort.<sup>4</sup> On the other hand the archaeometric analyses by M. Picon and J. Lasfargues proposed a Campanian or at least an Italian, non-Etrurian origin for some samples that have been controlled.<sup>5</sup> As our basis for comparison with fabrics from the Etrurian production sites is extremely feeble, we decided to present here only samples that were convincingly belonging to the area of Naples.<sup>6</sup> It has however to be mentioned that, as a by-product of this study, we observed that more often than suspected the fabrics of fragments with identical stamps differed considerably.<sup>7</sup>

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<sup>1</sup> Insula II: M124/27; M124/31–33; M124/35–38; M124/40; M124/42–44; terra sigillata from this complex has been published by Philipp 1993/94, for the context see also Krinzinger 1993/94; Krinzinger 1994, 42–3. Fortifications in the Lower Town of Velia: M124/28–30; M124/34; M124/39; M124/41; these samples have been studied by H. Liko for her PhD thesis (Liko 2001) and will be published in the volume about the fortifications of the Lower Town (Velia-Studien 4, in preparation). For the excavations, see the preliminary report Gassner and Sokolicek 2000, 95–129.

<sup>2</sup> Finds from a private house in the Eastern quarter: M124/4–13; M124/45; M124/46; M124/47–51, see Liko 1999, see also for the context Krinzinger et al. 1999, 73–100. Finds from the private house C in the Eastern quarter of Velia: M124/24–25, see for the context Krinzinger et al. 1999, 63.

<sup>3</sup> These samples kindly have been made available by Rudolf ARkamp from LWL-Archäologie für Westfalen (Münster, Germany). I also want to thank B. Tremmel and S. Radbauer, who were responsible for the sampling process.

<sup>4</sup> Schnurbein 1982, p. 151, *Liste 7* for the samples attributed to Puteoli by Oxé and Comfort, see also OC 1968 Index III E POZZUOLI.

<sup>5</sup> Von Schnurbein 1982, see in particular *Liste 1* (pp. 140–44) and *Liste 5* (pp. 148–49) for the analysed samples.

<sup>6</sup> We therefore excluded Schnurbein 1982, stamps no. 36; 223; 344; 503; 509; 506; 507; 572; 649; 650; 698; 739; 740; 759; 760; 761. All these samples were included in *Liste 5*, but did not show the characteristics of the production of Puteolanean Sigillata (nor of Campanian Orange Ware). We also did not include stamp no. 698 (OCK 2000, 1839). Secundus (2) was regarded a slave of N. Naevius Hilarus by OC 1968, but the chemical analysis on the material of Haltern (sample no. 279) suggested a provenance from Pisa. According to our images identification as Puteolana (BNAP-TS-4) would seem probable, but given the results of the chemical analysis evidently final conclusions cannot be made yet.

<sup>7</sup> e. g. APHROD/C.SENTI: von Schnurbein 1982, stamp no. 739 and 740 or CRIS/PINI: von Schnurbein 1982, stamp no. 506 and 507.

From the very beginning researchers had difficulties to find a homogenous pattern for the fabrics of the Campanian production by archaeometric analyses, which always distinguished several groups that differed from the better defined products from Etruria and Northern Italy.<sup>8</sup> As Campania looks back to a long pottery tradition, the existence of several production centres for terra sigillata would not be surprising and has thus been assumed and discussed by various scholars.<sup>9</sup> A fundamental synthesis of these hypotheses is found in a recent contribution of Soricelli who depicts a convincing picture, sometimes, however, seems to be enthusiastic in regard to the often weak basis of attributions of products to a particular production site.<sup>10</sup> While the identification and the development of workshops like that at Cales or other centres in Northern Campania, not yet identified definitely, are still under discussion<sup>11</sup> two productions can be distinguished with high probability: the so-called terra Sigillata Puteolana and the Campanian Orange Ware, also addressed as “Produzione A della Baia di Napoli”.<sup>12</sup> Both productions can be distinguished rather easily by general aspects as colour of the fabric or surface treatment and by slight differences in the morphological repertory. In this paper we distinguish various fabrics for both productions, individuated by following the methodology of FACEM, thus aiming to improve the concept of older termini like “qualities” or “Fabrikate”.<sup>13</sup> Our approach is based on a previous study on terra sigillata from Velia by H. Liko, who proposed a total of six fabrics for Italian terra sigillata; three of them associated to terra sigillata Puteolana.<sup>14</sup> In the course of this work she also defined five fabrics for Campanian Orange Ware.<sup>15</sup> In regard to the nature of our samples, coming only from the consumption area, these fabrics may be poorly or only partially representative, but at least aim at creating an objective possibility to approach the many differences observed hitherto in all publications dealing with terra sigillata from Southern Italy.

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<sup>8</sup> See Lasfargues and Picon 1982, 21; Schneider and Hoffmann 1990, 31; Schneider 2006, 165 to his group III.

<sup>9</sup> For the history of research in general see Gassner and Trapichler in this issue.

<sup>10</sup> Soricelli 2004, see also in general Ettlinger 1990, 11–12; OCK 2000, 32; Olcese 2012, 342–43; 365–68 with bibliography. For chemical analyses see Lasfargues and Picon 1982; Schneider and Hofmann 1990; Schneider 1999; Soricelli et al. 1994; Schneider and Daszkiewicz 2006.

<sup>11</sup> For Cales, see Pedroni 1986; Pedroni 1990; Pedroni 2001; Pedroni and Soricelli 1996; Pedroni and Tasser 2002. For the unidentified workshops, see e.g. Lasfargues and Picon 1982; Schneider and Daszkiewicz 2006 and most recently Clerk-McKenzie 2012 who proposes the term “Vesuvian sigillata (VS)” for Campanian Orange Ware. These probable production sites are not further discussed here.

<sup>12</sup> Soricelli 1987a; Soricelli 1987b; Ettlinger 1990, 12–13; Soricelli et al. 1994; Hedinger 1999, 171–83; Hedinger et al. 1999, 347–65; Schneider and Daszkiewicz 2006, 174; McKenzie-Clark 2012; summing up Soricelli 2004 and Olcese 2012, 352–55. Kenrick was the first to identify the production, erroneously calling it “Tripolitanian Sigillata”, see Kenrick 1985; Kenrick 1987.

<sup>13</sup> For “qualities” see Schnurbein 1982, 4–6; Hedinger 1999, 41–42; for “Fabrikate”, not to confuse with the English expression “fabric”, e. g. Schindler and Scheffenecker 1977, 16–20 and in general Gassner 2003, 23–30. The important publication of Tomber and Dore 2002 does not include any fabrics from the Bay of Naples.

<sup>14</sup> This classification goes back to her PhD thesis (Liko 2001) and was partly published in Liko 1999, in particular 111. The other fabrics concern the productions of Arezzo and Pisa. The identification of terra sigillata Puteolana was based on a very small series of XRF Analysis by G. Schneider (Freie Universität Berlin), comprising M124/49–51. These analyses will be published in *Velia-Studien IV* (in preparation) by G. Schneider. Changes and corrections of her attribution are indicated below when presenting the single fabrics.

<sup>15</sup> Liko 2001, 38: T8–9; T11–13. In our classification T8 has been attributed to BNAP-TS-1 (M124/8), T9 and T 11 have been equated, and T12 has been omitted as the identification of Liko 1999, no. 40 with form type Berenice B427 seems very uncertain and thus the identification of the fragment as Campanian Orange ware has to be questioned.

## DESCRIPTION OF FABRICS *(with the collaboration of Carina Hasenzagl)*

The description of fine wares always presents peculiar difficulties as the matrix normally is very fine, inclusions are rare and differences between fabrics can only be discerned at a very high level of magnification, if at all. The following classification thus should be taken as a proposal and used with caution.

In the case of Italian Terra Sigillata the question is if we are able to see differences between the fabrics of the most important production centres like Arezzo, Pisa and the still not well-defined group of Campanian fabrics. Already Schnurbein has proposed a classification according to so-called “qualities”, depending on the optical analyses under the binocular with a magnification of 10.<sup>16</sup> As becomes clear from his comparison of his “qualities” with the results of the chemical analyses the correlations functioned well for the discrimination of the productions of Arezzo and Lyon, but gave a very heterogeneous picture for his group of “other unidentified centres”, and also for the samples supposed to come from Puteoli.<sup>17</sup>

### Terra Sigillata Puteolana

The definition of this production relies mostly on the discovery of a large complex of vessels and moulds at Pozzuoli in 1873/1874.<sup>18</sup> As all testimonies for a workshop area like kilns or even wasters are missing, the actual site of production cannot be determined with security as the pottery as well as the moulds could also have come to the port of Puteoli in order to be shipped elsewhere.<sup>19</sup> The problem becomes more complex when considering the find of moulds for N. Naevius Hilarus at nearby Cuma, another possible production site.<sup>20</sup> On the present material we could distinguish four different fabrics that all display refined clays, generally burnt hard. While BNAP-TS-1 is a very fine fabric and inclusions are not visible with the naked eye, BNAP-TS-2 to BNAP-TS-4 are characterized by the strong presence of carbonate-pseudomorph moulds and fine black, greyish and sometime red inclusions of varying frequency.

### BNAP-TS-1<sup>21</sup>

*reference sample:* M124/6

*further examples from Velia:* M124/8; M124/28; M124/50

The fabric is characterized by a very dense and fine-grained matrix of pink colour (7.5YR–7/4) which is packed with very fine tiny white and pale yellow speckles. Moreover it contains many carbonate pseudomorph moulds of mainly very small size, only visible under the binocular with high magnification. Black and brownish inclusions with sizes to a maximum of 0,075 mm are rare as is quartz. Mica sporadically occurs as silver polygonal particle or as dark line. While the inclusion size is usually less than 0,125 mm, occasional fragments of bioclastic grain appear in bigger sizes.

<sup>16</sup> von Schnurbein 1982, 4–6, though his description often (too often) regards only the glaze.

<sup>17</sup> von Schnurbein 1982, 21–23. Also the samples supposed to be produced at Puteoli according to their stamps differed between qualities II–IV.

<sup>18</sup> For the circumstances of the discovery see Bruzza 1875. In general cf. Schnurbein 1982, 9–10, fig. 20; Ettlinger 1990, 11–12; Soricelli 1993; OCK 2000, 23–33; Soricelli 2004, 302–3; Olcese 2012, 365–68.

<sup>19</sup> See also the discussion in Comfort 1973.

<sup>20</sup> Comfort 1973; see also Soricelli 1982, but contra Pucci 1975; Kenrick 2002.

<sup>21</sup> This fabric has been published as T6 by Liko 1999, 110.

Macroscopically BNAP-TS-1 can easily be mistaken for the production of Arezzo which, however, is characterized by a higher amount of carbonate and a lack of tiny black inclusions. According to the description it could correspond to the fabric ITS 1 of Clerk-McKenzie.<sup>22</sup> In this group we would also include the base M124/8, probably from a cup type Conspectus 31, originally attributed to the Campanian orange ware by H. Liko.<sup>23</sup> The fine, hard fabric corresponds very well to BNAP-TS-1 and does not find correspondence in the other fabrics of the Campanian Orange Ware.<sup>24</sup>

Shapes comprise plates of the early types Conspectus 12 (M124/28), dominating the horizon of Oberaden, but also present at Haltern,<sup>25</sup> or Conspects B 2. 7 with a badly conserved central stamp RA[S]III that possibly could be read as Rasinius (M124/51) and has been attributed to the production of Sigillata Puteolana by G. Schneider.<sup>26</sup> This analysis thus confirms an earlier suggestion of H. Comfort who assumed a "Puteolean" branch workshop for the Arretine potter Rasinius.<sup>27</sup> Plates like Conspectus 20.4 or 20.5 (M124/6) appear from Augustan time onwards, but are most frequent around the middle of the first century AD and occur often in the destruction layers of Pompeii.<sup>28</sup> M124/50 belongs to a beaker Conspectus 50.3, a rather infrequent type, comparable to a similar example from Pompeii.<sup>29</sup>

### **BNAP-TS-2<sup>30</sup>**

*Reference sample:* M124/4

*Further examples from Velia:* M124/25; M124/26; M124/49

*further examples from Haltern:* M159/20; M159/21

This fabric is characterized by a reddish yellow matrix (5YR6/6) with low porosity and fine tempering that clearly distinguishes BNAP-TS-2 from BNAP-TS-1. The matrix is characterized by a high amount of white and pale yellow speckles and by small to medium sized carbonate-pseudomorph moulds and numerous fine black and greyish inclusions, which are poorly visible in the photo, but clearly discernable under the microscope. Quartz and reddish brown particles are present in smaller amounts. Mica appears occasionally as small polygonal silver particles or in cross-section as short fine and dark lines. M124/49 has been analyzed by G. Schneider and identified as Sigillata Puteolana.<sup>31</sup>

We also would suggest classifying here two samples from Haltern, both stemming from cups of the type Conspectus 31 (M159/20 and M159/21). For both of them a provenance from the so-

<sup>22</sup> McKenzie-Clerk2012, 798–99.

<sup>23</sup> Liko 1999, 116, no. 37, type B421, fabric T8.

<sup>24</sup> Liko 1999, 115–16 also attributes to T8 her nos. 33 and 41. These vessels could not be sampled in 2012, so that it remains open, if they really belong to the Campanian Orange Ware, or if they should be attributed to the Puteolean Terra Sigillata as well. In the second case the small fragment no. 33 could belong to a cup Conspectus 22 (Consp. 22.6.1.), no. 41 to a hemispherical cup Conspectus 33.

<sup>25</sup> Conspectus p. 72 (K. Roth-Rubi).

<sup>26</sup> Liko 1999, no. 23, pl. 1; see also OCK 1623. These analyses will be published in the volume on the fortifications of the Lower town of Velia (Velia-Studien IV, in preparation).

<sup>27</sup> Comfort 1973; E. Ettlinger in: Conspectus p. 11; Kenrick in: OCK p. 353.

<sup>28</sup> Conspectus p. 86 (Ph. M. Kenrick).

<sup>29</sup> Conspectus Form 50.3.1., see Lavizzari Pedrazzini1984, pl. 121,1. M124/50 has been analysed by Schneider and attributed to the production of terra sigillata Puteolana.

<sup>30</sup> This fabric has been published as T4 by Liko 1999, 110.

<sup>31</sup> see note 27.

called production of Puteoli has been suggested earlier.<sup>32</sup> According to the description BNAP-TS-2 could correspond to the fabric ITS 2 of McKenzie-Clark.<sup>33</sup>

Among the shapes, cups like *Conspectus* 17.1.1. (M124/25) are dominant and generally suggest a production of this fabric in the first half of the first century AD. This date can also be suggested for the base of a cup (*Conspectus* B4.14) with a central stamp (M124/4).<sup>34</sup> Of particular interest is the fragment of a platter *Conspectus* B.1.7 with a radial stamp of VALES, suggesting a date in Augustan time (M124/26).<sup>35</sup>

### **BNAP-TS-3**

*reference sample:* M124/5

This fabric generally is very similar to BNAP-TS-2, but shows a higher porosity and is tempered primarily with fragments of white and yellowish calcite. It also contains a high degree of carbonate pseudomorphoses. Reddish-brown, black and grey inclusions are smaller in size and quantity. Small quartz particles, silver and gold mica are less frequent than in BNAP-TS-2.

Also BNAP-TS-3 has been observed with cups like the hemispherical cup *Conspectus* 36.3 (M124/5), present in contexts of the first half of the first century AD.

### **BNAP-TS-4**

*reference sample:* M124/24

*further examples from Velia :* M124/29; M124/30; M124/31

*further examples from Haltern:* M159/6; M159/12; M159/19; M159/22

BNAP-TS-4, too, can be compared to BNAP-TS-2 and BNAP-TS-3, but has a clearly higher content of calcite as well as white and pale yellow carbonate pseudomorph moulds which tend to be a bit bigger than those of BNAP-TS-2 and BNAP-TS-3. Due to the large amount of calcareous inclusions it also shows a paler matrix (7.5YR7/6) than BNAP-TS-2 and BNAP-TS-3. BNAP-TS-4 further contains many reddish-brown particles and few black ones. Quartz is present in smaller quantity. Silver and dark mica are rare in occurrence.

Good samples for this fabric have also been found among the material of Haltern, namely M159/6, a plate *Conspectus* 18.2 with the stamp FAVOR<sup>36</sup> and a cup of the type *Conspectus* 31 with the stamp GAM/VS (M159/19).<sup>37</sup> All these samples have been attributed to the production of Puteoli on the basis of the stamps, while the chemical analysis only proposed an "Italian" origin, clearly different from the well known centres in Etruria and the Padana. Though plates are present as well (M159/6), predominant are once again cups like the carinated cups *Conspectus* type 22 or 23 (M124/29) and *Conspectus* 27 (M124/30). We further observed a fragment of a Campanulate cup *Conspectus* type 14 and a cup with restricted wall *Conspectus* 31.1 with the stamp FELIX.<sup>38</sup> Their date range reaches from the Middle-Augustan to the Neronian Period.

<sup>32</sup> Schnurbein 1982, stamp GAM/VS, no. 563 = OCK 2000, type 865; stamp PRIMVS/NAEV[ no. 625 = OCK 2000, 1242.

<sup>33</sup> McKenzie-Clark 2012, 799.

<sup>34</sup> For dating stamps see Ph. Kenrick, *Conspectus* p. 147.

<sup>35</sup> OCK 2000, 2287. The name Valens is attested for the production of Puteoli (OCK 2288). For OCK 2287 a provenance from Puteoli has been excluded because of the radial stamp, but this has to be questioned now.

<sup>36</sup> OCK 2000, type 813.

<sup>37</sup> OCK 2000, type 865.

<sup>38</sup> OCK 2000, type 819, supposed to be a slave of N. Naevius Hilarus.

### Summary

We can distinguish two groups of terra sigillata Puteolana: the first is characterized by a very fine and compact fabric (BNAP-TS-1), macroscopically easily to be confused with terra sigillata Arretina, while the second group comprises the slightly coarser fabrics BNAP-TS-2 to 4 for which carbonate pseudomorph moulds are typical. At the moment we cannot decide if all these fabrics have been produced in a single production centre or if they are representative for various workshops in the wider region. Optically fabrics BNAP-TS-2 to 4, but in particular BNAP-TS-2, show very great similarity to samples of Campana A (e. g. M2/133, BNAP-G-1).<sup>39</sup> This might argue for a provenance from the same production site (Naples?) or at least for an identical or similar provenance of the raw materials used for both classes.

Some of the samples from Haltern for which already Oxé has supposed a provenance from Puteoli could be attributed to fabric BNAP-TS-4 with high probability, so the fragment of a plate *Conspectus* 18.2 with the stamp FAVOR (M159/6)<sup>40</sup> and two cups of the type *Conspectus* 31, both with the stamp GAM/VS (M159/19 and 20).<sup>41</sup> Of particular interest might be the attribution of a badly conserved central stamp that could be read as Rasinius (M124/51)<sup>42</sup> to the fabric BNAP-TS-1. This strengthens the hypothesis of a Puteolan branch workshop of this potter, already assumed by H. Comfort.<sup>43</sup>

### CAMPANIAN ORANGE WARE

This ware, characterized by its orange-brown sherd and the characteristic semi-matt, evenly applied orange or orange-red slip as well as by a morphological repertory similar, but not identical to that of other Italian sigillata wares, was first identified at Berenice in Libya and considered to be local.<sup>44</sup> We owe the identification of the correct production area, the Bay of Naples, to G. Soricelli, who proposed the terminus “produzione A di Napoli”,<sup>45</sup> while Ph. Kenrick suggested the more convenient term “Campanian Orange Ware”, used also in this paper.<sup>46</sup> The localization of this ware was confirmed by various archaeometric analyses and by the discovery of two misfired samples in the historic centre of Naples.<sup>47</sup> According to contexts mainly at Pompeii, the beginning of this ware can be assumed about the middle of the first century B.C.E. and it flourished at least until the Late Augustan/Tiberian period. Again on the basis of contexts at Pompeii it cannot be excluded, however, that the production continued on a smaller scale at least until the Claudian period.<sup>48</sup>

Within this ware four fabrics (BNap-TS-5 to BNap-TS-8) have been distinguished that are all coarser than those of the Sigillata Puteolana and show a higher porosity.<sup>49</sup> They share, how-

<sup>39</sup> I am obliged to Maria Trapichler for the discussion of the Campana fabrics.

<sup>40</sup> OCK 2000, type 813.

<sup>41</sup> OCK 2000, type 865.

<sup>42</sup> OCK 2000, 1623.

<sup>43</sup> Comfort 1973, see also Kenrick in: OCK 2000, p. 48.

<sup>44</sup> For the first definition of the ware as “Tripolitanian Sigillata”, see Kenrick 1985; Kenrick 1987.

<sup>45</sup> Soricelli 1987a; Soricelli 1987b; Ettlinger 1990, 12–13; Hedinger 1999, 171–83; summing up: Soricelli 2004 and Olcese 2012, 352–55.

<sup>46</sup> Kenrick 1996, 43.

<sup>47</sup> Soricelli et al. 1994; Hedinger et al. 1999, 347–65; Schneider and Daszkiewicz 2006, 174; McKenzie-Clark 2012. The misfired pieces were found in the area of Chiesa dei Girolamini resp. Chiesa di S. Maria Maggiore, see Arthur 1985; Soricelli 1987a; Soricelli 1987b; Olcese 2012, 352.

<sup>48</sup> Soricelli 1987b; Soricelli et al. 1994; Soricelli 2004, in particular 301.

<sup>49</sup> The first classification of fabrics goes back to Liko 1999, 115 (her fabrics T8–T9, T11–T13). For **FACEM** we grouped together her T9 and T11 (=BNAP-TS-5), as differences were hard to argue, and we

ever, the frequent occurrence of carbonate pseudomorph moulds with fabrics BNap-TS-2 to BNap-TS-4 of the Puteolana. Characteristic are also white and black particles and a high amount of silver and gold mica. Fabrics BNap-TS-5 to BNap-TS-7 are rather similar and differ only in minor details. BNap-TS-5 can be distinguished from BNap-TS-6 by the lower degree of porosity. BNap-TS-7 is characterized by a smaller amount of white and quartz particles while black inclusions sometimes tend to form concentrations within the paste. Very distinctive is BNap-TS-8 that is characterized by its unsorted rather coarse temper, mainly reddish-brown and black inclusions with inhomogeneous sizes and shapes. Fabrics of Campanian Orange Ware have not been found among the samples from Haltern, so that an export from this production centre to the North remains to be excluded.

### **BNap-TS-5**

*reference sample:* M124/9

*further examples from Velia* M124/11; M124/32; M124/37; M124/38; M124/40; M124/41

The fabric varies in colour from reddish yellow (5YR6/6) to brown (7.5YR5/4). The rather high porosity of about 20 % with many mainly vughy and chamber shaped voids is characteristic for BNap-TS-5. Abundantly and clearly visible are white speckles and small to medium sized white carbonate pseudomorph moulds. While small, irregularly shaped black inclusions appear frequently, reddish-brown particles occur just sporadically. Small quartz particles are present. Silver and dark mica occur as polygonal particle and sometimes in lines.

This rather frequent fabric is common among the finds from the foundation trench of Insula II at Velia, dated to the Augustan period, but has also been observed in the context of destruction of a house in the loc. d'Ambrosio in the Eastern quarter of Velia, dated to the first half of the first century AD.<sup>50</sup> Of particular interest is a carinated cup with pronounced hanging lip (M124/38, form type Berenice B425), similar to Conspectus 13.3, which is representative for the horizon of Dangstetten/Oberaden.<sup>51</sup> This cup bears a central stamp of DEME/TRIVS/[P]VLLI. The PULLI are known as an important family in the pottery business by stamps from North Africa and Sicily.<sup>52</sup> Frequent among the forms are especially plates like M124/11 (form type B410) or M124/40 (form type B414). The comparison with pottery samples of fabrics, supposed to come from Cuma, showed a certain similarity with BNap-F-1.

### **BNap-TS-6**

*reference sample:* M124/39

*further examples from Velia:* M124/34

BNap-TS-6 is quite similar to fabric BNap-TS-5, but its porosity is lower. BNap-TS-6 frequently contains very small white particles and numerous carbonate pseudomorph moulds. Many black inclusions of small size and varying shape are regularly distributed. Reddish-brown parti-

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omitted her T8 and T12 as we were not sure if the fragments could be classified as Campanian Orange Ware.

<sup>50</sup> e. g. M124/32; M124/37 M 124/38 or M124/40. For the chronology of the house in the loc. d'Ambrosio, see Liko 1999, 107–8.

<sup>51</sup> Philipp 1993/94, cat. no. TS 121 Abb. 6, 5.

<sup>52</sup> Hedinger et al. 1999, 355, tab. 14; 356, fig. 24 B10; 359–60, tab. 16; see also Hedinger 1999 (Monte Iato), 180–81; Kenrick, OCK 2000, p. 4 ; Soricelli 2004, 300; Malfitana 2004, 314–16; Olecese 2012, 353. The formtype B425 is also repeated by M124/11.

cles that reach a maximum of 0,25 mm are rare. Silver and gold mica (mostly polygonal particles) are more prominent than in BNap-TS-5.

Both samples belong to the bases of cups, maybe like those of form type B423.

### **BNap-TS-7**

*reference sample:* M124/36

*further examples from Velia:* M124/42; M124/43

BNap-TS-7 has a reddish yellow (7.5YR6/6) matrix with many vughy and chambered shaped voids. It can be distinguished from BNap-TS-5 and BNap-TS-6 by the smaller amount of white and quartz particles, though both fabrics are rather similar. Visible are white calcareous fragments and carbonate pseudomorph moulds. BNap-TS-7 is also packed with small to medium sized black inclusions that sometimes tend to form concentrations within the paste and are the most dominant and distinctive inclusions. Few fragments of silver and gold mica appear as polygonal particles and in cross sections.

All samples presented here come from the filling of the foundation trench of the Insula II at Velia of Augustan date. They belong to plates of the form type B 407 resp. B399 (M124/36 and 124/43) or to a carinated bowl with curving wall B 417 (M124/42).<sup>53</sup>

### **BNap-TS-8**

*reference sample:* M124/13

BNap-TS-8 is easy to recognize due to its unsorted rather coarse temper with big inclusions ranging from 0,025 mm to 0,895 mm in size and rare voids of irregular shape. The most distinctive particles frequently occurring are reddish-brown and black ones with inhomogeneous sizes and shapes. Moreover BNAP-TS-8 contains white speckles and numerous (sometimes big) white and yellowish carbonate pseudomorph moulds. BNAP-TS-8 also shows quartz particles and silver and dark mica in smaller amounts.

The sample M124/13 belongs to a conical cup with concave rim, form type B 427, corresponding to Conspectus 22 and dated to the Augustan and Tiberian period.<sup>54</sup>

### *Summary*

Within the Campanian Orange Ware we can distinguish four fabrics which are all rather similar and characterized by the occurrence of more or less frequent carbonate pseudomorph moulds and sometimes very small black particles. Only BNAP-TS-8 can be recognized easily by its unsorted, rather coarse temper and the inhomogeneous size of the inclusions. Due to the limited number of samples we could neither observe any correlation of a particular fabric to specific forms nor any chronological focuses.

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<sup>53</sup> Corresponding to Hedinger et al. 1999, no. 276, fig. 21.

<sup>54</sup> Liko 1999, no. 39, pl. 2, for the chronology see Ph. Kenrick, Conspectus 90; Hedinger 1999, 178.



## CONCLUSIONS

Both of the well known wares of terra sigillata from the Bay of Naples could also be distinguished by their fabrics as we identified four fabrics in Sigillata Puteolana (BNAP-TS-1 to BNAP-TS-4) and four fabrics for Campanian Orange Ware (BNAP-TS-5 to BNAP-TS-8). The identification of these fabrics as coming from the Bay of Naples was confirmed by analyses conducted by G. Schneider on ceramics from Velia.

Within the group of Puteolanean sigillata we separated a very fine fabric (BNAP-TS-1) from the others that are characterized by the strong presence of carbonate-pseudomorph moulds and fine black, greyish and sometime red inclusions of varying frequency. This second group showed certain similarities to the fabric of Campana A (BNAP-G-1) so that continuity in the production centre or at least in the source of the raw materials used seem probable. We did not find any samples that are common with those of glazed ware with a possible provenance from Cuma, where a workshop has been supposed, but evidently this might be due to the limited number of samples.

The fabrics of Campanian Orange Ware are also similar to the second group of Sigillata Puteolana, but are all coarser than those of the Sigillata Puteolana. Characteristic for this production is the constant presence of mica as could be observed also in some fabrics attributed probably to Cuma (e. g. BNAP-F-1). As the identification of Campanian Orange Ware as coming from the area of Naples depends on two misfired pieces from the historic centre of Naples this observation is puzzling. Further analyses are needed to control the macroscopic classification. Maybe we will have to consider the provisioning of workshops at Naples with clay from various points in the surroundings.

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