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Pottery Production in the Bay of Naples

PROBLEMS, HISTORY OF RESEARCH AND CURRENT STRATEGIES

INTRODUCTION

For more than a thousand years the Bay of Naples was not only one of the most important and dynamic areas of the antique Mediterranean, but also a region well known for its production of pottery. The first testimonies for local production of ceramics refer to the Late Geometric period at the site of Pithekoussai and the latest to Late-Antique and Byzantine periods, e. g. at Cuma, at Naples or in the territory of Pompeii.¹ Many of the pottery workshops in the Bay of Naples produced for export, as for example the workshops for tiles of the late archaic period at Ischia or those at Naples for the ubiquitous Campana A ware of the second and first c. B.C.E. that has been found all around the Western Mediterranean. In most cases provenance from the Bay of Naples has been determined by the specific morphological repertory that could be brought into connection with wasters as indicators of workshops (Campana A) or by potter's stamps and/or decoration motifs (so-called sigillata Puteolana). In some cases authors also refer to the peculiarities of the clay, rich of volcanic inclusions, which could be discerned also with the naked eye. While it does not seem too difficult to recognize the general provenance from the Bay of Naples, it has proven to be much more complex to distinguish between the various possible production sites within that region, such as Naples or Cuma, to name only the most important centres where wasters or moulds indicate probable local production.

Thus, to understand the local dynamics of the area and to gain better insight into regional exchange patterns, further research was needed. The following studies soon were confronted with considerable difficulties.² As secured workshops with kilns, wasters or spacers as indicators of local production are rare, the identification of different production sites could be expected foremost from archaeometric analyses and in particular from the comparison of ceramics with local clay resources. Due to the specific geological situation of the Bay of Naples, determined by the volcanic nature of this area and a series of repeated volcanic eruptions of Mount Vesuvius, it turned out to be very difficult and sometimes impossible to find relevant clay sediments, which are often assumed to be hidden under deep lava strata. The dense urbanization of modern Naples and a large part of the region also did not facilitate these attempts.

¹ For early Pithekoussai, see Olcese 2012, 345–47 with bibliography; for Cuma, see Caputo and Regis 2009; de Rossi 2008; for Naples, see Arthur 1998; Carsana 2009, for the territory of Pompeii: De Carolis et al. 2009 and in general Olcese 2012, 342–70.

² See below "History of Research" and in general Olcese 2012, 342–70.

On the contrary, clay sediments are frequent and of good quality on the island of Ischia.³ Thus it is not amazing that as early as in the 1960s it was suggested that the potters' workshops in Naples imported their clay from this island.⁴ This assumption, widely accepted in most studies of the following years, has to be re-examined, however, as according to anthropological studies the importation of clay would present a rather unique situation.⁵ Further, it also results in the fundamental question of: What is the definition of "local production" and by which methods can we identify it in archaeological research? Normally, we speak of "local production" if we have secure archaeological indicators for the existence of potters' workshops such as kilns or misfired pieces. But what about when the raw materials, used in this production have been imported from another place, as is generally supposed for Ischia? In this case, the theoretical basis for the identification of a production site by archaeometric analyses, the assumption that the site where raw materials were excavated and the place where pottery was produced are more or less identical or at least close to each other, would no longer be true.⁶ Actually, this discrepancy cannot be solved on a theoretical level, but it is to be hoped that further exploration of the geological situation and the possible individualization of slight differences between raw materials of the various sites within the Bay of Naples will bring advances in this complex question.⁷

HISTORY OF RESEARCH

Evidence for the local production of ceramics in the Bay of Naples have been reassumed recently by G. Olcese.⁸ The following overview therefore focuses only on the most important sites without claiming to be complete.

Pithekoussai/Ischia

Local production of ceramics at Ischia has been assumed for Late Geometric and Archaic pottery in Euboian, Corinthian and Attic tradition and proven by a kiln excavated under the church of S. Restituta at Lacco Ameno.⁹ Of certain importance was also the production of tiles, which have been found as imports in many centres of the Tyrrhenian coast from the Late Archaic

³ Buchner 1994; see now also Olcese 2012, 345–49 with reference to modern pottery workshops on the island between Casamicciola and Lacco Ameno, see also Hampe 1965, 38.

⁴ Lepore 1967, 248–50; Buchner 1970/1971; Buchner 1972, 369–72; Morel 1985, 376; Morel 1985a, 343, but see also Morel and Picon 1994/1995, 44–45.

⁵ In recent times potteries were normally situated in the immediate vicinity of clay deposits, see e. g. the anthropological study of Arnold 1985, in particular 38–40, but contra, see Hampe for Casamicciola at Ischia and Cutrofiano and Lucugnano in Apulia: Hampe 1965, 38, 57, 62.

⁶ The problematic of transport of clay has been widely discussed in archaeology, e. g. Dupont 2000, note 39. Usually the importation of clays is seen as an exception in regions without good natural clays, like Egypt, where trade with clays is attested by literary sources: Porten and Yardeni 1993, 82–291; Yardeni 1996; Briant and Desca. See also Boardman 1956; Gill 1987; Ampolo 1993 (1996), 247.

⁷ Geological surveys have been carried out recently by A. De Bonis (Naples), and Roman Sauer (Vienna), and will hopefully be presented in the next edition of **FACEM** in 2013.

⁸ Olcese 2012, 342–70.

⁹ Buchner 1970/1971, 63–67; Buchner 1972, 369–72; Buchner and Ridgway 1993; Ridgway 1984, 112; Nizzo 2007, 36–8. For the kiln, see Olcese 2012, 345 (kiln n. 1).

period onwards.¹⁰ Though the beginning of the pottery workshop under the church of S. Restituta at Lacco Ameno might have been very early, the phase of main activity ranges from the fourth to the second c. B.C.E. onwards when glazed ware, transport amphorae and tiles were produced.¹¹

Kyme/Cuma

Secure attestations for the local production of pottery at Cuma are rare and belong mainly to the Roman and Late Antique period.¹² While the production of Italian terra sigillata has been assumed on the basis of the discovery of three moulds of N. Naevius Hilarus,¹³ the local production of *ceramica a vernice interna rossa* has been supposed because of the existence of wasters. Archaeometric analyses confirmed the provenance of the clays from the Bay of Naples but could not prove an origin from the area of Cuma.¹⁴ For the earlier periods we mainly rely on studies of pottery from the new excavations at Cuma, carried out from 2001 onwards, where local production has been assumed for coarse wares, glazed wares and Ionic cups.¹⁵ These materials have also been sampled for the present analysis of the local production of Cuma.¹⁶

Neapolis/Naples

Though the existence of good clays at Naples has always been doubted, the local production of pottery, namely of black glaze ware, has been assumed already for the 5th c. B.C.E. soon after the foundation of the town.¹⁷ As the morphological repertory of this supposed production is so close to Attic models, the immigration of Attic craftsmen has even been conjectured, this attribution actually can be regarded only as a hypothesis.¹⁸ Only from the third and second c. B.C.E. onwards is there evidence for the production of glazed ware (so-called Campana A), coarse ware and amphorae of the MGS type.¹⁹ Already in the 1950s, excavations on Corso Umberto

¹⁰ Rescigno 1998; for archaeometric analyses, see Sauer and Gassner 1999; for the distribution in the export area, see Gassner 2003, 225–27.

¹¹ See now Olcese 2010, 25–31; and Olcese 2012, 345–49 with bibliography.

¹² See in general Olcese 2012, 342–44; Petacco and Rescigno 2007, 82; Caputo and Regis 2009; de Rossi 2008.

¹³ Soricelli 1982; Soricelli 2004, 302; see also Kenrick 2002.

¹⁴ Chiosi 1996; Munzi 2007; De Bonis et al. 2009; Morra et al. 2012.

¹⁵ For the excavations of the Università Napoli Federico II, see now Gasparri and Greco 2007; Gasparri and Greco 2009; for those of the Università Orientale, see Cuzzo et al. 2006, in particular p. 12; for those of the Centre Jean Berard, see P. Munzi et al. in this edition of **FACEM**; For the complex situation concerning the production of amphorae, see Sourisseau 2011, 149–73; Gassner, *Hommages Bats* (forthcoming).

¹⁶ See the following contributions in this edition of **FACEM**: M. Trapichler, Pottery Production in the Bay of Naples. The Coarse Wares; Pottery Production in the Bay of Naples. The Glazed Wares; Pottery Production in the Bay of Naples. The Fine Banded Wares; G. Greco, B. Ferrara, and A. Tomeo, L'area sudoccidentale del Foro di Cuma: le produzioni ceramiche; P. Munzi et al., Le ceramiche ellenistiche del santuario periurbano settentrionale di Cuma.

¹⁷ Morel 1985; for pottery of the 5th c. B.C.E., see Boriello et al. 1985, 232; Bragantini 1991, 29; Pontrandolfo 2000, 122 fig.1.

¹⁸ Morel 1985a, in particular 333. For pottery of the fifth c. B.C.E., see also Giampaola et al. 1996, 129, fig. 8, no. 9–10. Giampaola et al. 1996, 129 fig. 8 no. 9–10.

¹⁹ See in general Olcese 2012, 349–60 with bibliography. For the definition of Campana A, see Lamboglia 1952; Lamboglia 1954, 65, and Morel 1981, 47.

and in nearby Vico S. Marcellino brought evidence for the existence of workshops.²⁰ The recent excavations for the construction of the new metro line made clear that this artisanal quarter lay near the ancient harbour. They also explored another workshop area in Piazza N. Amore, active from the first half of the third to the early second c. B.C.E.²¹ Samples of glazed ware from the potter's quarter of Corso Umberto have been analysed by M. Picon and compared to samples from Ischia with the result that the latter show a matrix rich of carbonates, which seem rare in the samples from Naples.²²

The export-oriented production of fine table ware at Naples continued also to the Roman Imperial period if we accept the localisation of Campanian Orange Ware ("produzione A di Napoli" or so-called Tripolitanian Sigillata) at Naples.²³ This ware, first identified at Berenice in Libya and considered to be local, is now generally located in the Bay of Naples due to archaeometric analyses and the discovery of two misfired samples in the historic centre of Naples.²⁴ According to contexts mainly at Pompeii, the beginning of this ware can be assumed about the middle of the first c. 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.²⁵

Puteoli/Pozzuoli

At the end of the first c. B.C.E. we see the appearance of another production of terra sigillata, located in the Bay of Naples. Traditionally it is denominated terra sigillata Puteolana, the terminus "Puteolana" deriving from the discovery of a considerable number of decorated and plain sigillata vessels and of moulds for relief bowls in the north of the Flavian amphitheatre at Puteoli/Pozzuoli in 1873/1874.²⁶ There was no evidence for kilns or wasters and, as the following analyses of stamps and decoration made clear, the collection also comprised a considerable number of importations from other production sites of Italian Sigillata. Unfortunately, the

²⁰ These excavations have been directed by W. Johannowsky and are partially published by Accorona et al. 1985; Morel 1985; Laforgia 1986; see also Olcese 2012, 351–2, pl.47–8, with bibliography.

²¹ De Caro and Giampaola 2004; Giampaola 2005, Febbraro and Giampaola 2009; G. Olcese mentions also spacers and wasters of ceramics from the second half of the fourth c. B.C.E. and wasters of e. g. Campana A, coarse ware, tiles, and moulds which indicate an duration of potters' activities in this area to the first c. B.C.E., see Olcese 2012, 358.

²² Picon 1988; Morel and Picon 1994; Olcese et al. 1996, 16–7; Olcese 1999, 292–3. Olcese 2004. For archaeometric analyses in the consumption area, see Mirti and Davit 2001 (Calabria); Belvedere et al. 2006 (Sicily); Trapichler 2006, 38 graphic 5 (Velia).

²³ For the first definition of the ware as "Tripolitanian Sigillata", see Kenrick 1985; Kenrick 1987; for the identification as a Campanian product, see Soricelli 1987a; Soricelli 1987b; Ettlinger 1990, 12–3; Soricelli et al. 1994, Soricelli – Schneider – Hedinger 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 suggested the term "Campanian Orange Ware" which is also used in this article, see Kenrick 1996, 43. The terminus „Produzione C“ was created by Soricelli 1987b (Libyan Studies), 74, but then discarded by the same Soricelli when it became clear that "produzione C" is identical with "produzione A", see Soricelli et al. 1994, 81.

²⁴ Found in the area of Chiesa dei Girolamini resp. Chiesa di S. Maria Maggiore, see Arthur 1985; Soricelli 1987a; Soricelli 1987b; Olcese 2012, 352.

²⁵ Soricelli 1987b; Soricelli et al. 1994; Soricelli 2004, in particular 301.

²⁶ For the circumstances of the discovery, see Bruzza 1875. In general cf. Schnurbein 1982, 9–10, fig. 20; Ettlinger 1990, 11–12; Soricelli 1993; Oxé et al. 2000, 23–33; Soricelli 2004, 302–3; Olcese 2012, 365–68.

find was divided and brought partly to Paris, partly to Berlin and other museums so that it remained difficult to have an overview of what has really been found as a full publication of all the vessels is still missing.²⁷ In the following more than hundred years the so-called “Sigillata Puteolana” has been discussed widely. The question has even been raised if a workshop for sigillata existed at Puteoli at all, or if the so-called Puteolana were possibly produced at nearby Cuma where moulds for N. Naevius Hilarus have also been found.²⁸ All authors, however, agree that the morphological language and the repertory of decoration allow distinguishing sigillata Putolana from workshops in Central or Northern Italy.²⁹ The chronological distribution pattern assumed for this production relies strongly on the contexts of the military bases in Germania (camps on the river Lippe, like Oberaden and Haltern) and thus proposes a date from the Late-Augustan to the early Tiberian period. Soricelli argues for a continuation of this production until the middle or even into the second half of the first c. A.D., named “terra sigillata tardo-puteolana”.³⁰

Archaeometric analyses started soon, but always found it rather difficult to detect a homogeneous pattern for this production.³¹ This would argue for more than one production centre in the Bay of Naples or Campania, which now no longer seems improbable.³²

THE CURRENT APPROACH OF FACEM

The objectives of our current investigations have been twofold: First we aimed at the definition of *fabrics* within various ware groups of representative materials from Naples and from Cuma according to the methodology normally used in FACEM³³. In a second step we wanted to deal with the question of whether these *fabrics* could be attributed to single production centres in the area of the Bay of Naples. While the classification according to the *fabric* is routine work, though sometimes difficult due to the very fine nature of some of the table wares, the identification of the different production centres within the investigated area posed serious difficulties: The direct comparison of these *fabrics* with that of misfired pieces and spacers is difficult, as wasters normally have been exposed to very different firing conditions. On the other hand, spacers are made of coarse clay and can only be compared to samples of coarse ware or tiles, but are not very helpful for fine table wares. To a large degree we also took into consideration archaeological arguments, like the frequentness of *fabrics* among coarse wares, often thought to be local, or the chronological range, as *fabrics* in use in the Late Geometric and Archaic period are supposed to come rather from Cumae or Ischia than from Naples or

²⁷ For this part of the history of research, see Comfort 1963-64 who also presents photos of decorated sigillata and moulds at the Louvre, Paris as well as a list of stamps.

²⁸ Comfort 1973; see also Soricelli 1982, but contra Pucci 1975.

²⁹ See e.g. Ettliger 1990, 11 who argues for the use of the terminus “Puteolana”.

³⁰ Soricelli 1987, 112–22; Soricelli 2004, 303–4.

³¹ See from the beginning Lasfargues and Picon 1982, 21, but also shortly Schneider and Hoffmann 1990, 31; Schneider 2006, 165 to his group III.

³² For possible other workshops producing terra sigillata in Campania, see the résumé of Soricelli 2004, 304–5 and recently McKenzie-Clark 2012.

³³ Gassner and Trapichler 2011.

Pozzuoli based on archaeological reasons. Also the occurrence of similar characteristics in *fabrics* of different ware groups (e.g. black glaze ware and finer banded and coarse ware) has been observed and can be taken as an indication for an origin from the same, probably local production centre.

In recent years Italian and Austrian geologists also carried out several geological surveys in the region, mostly in the area of Cuma (Campi Flegrei) and at Ischia, the Volturnus Valley and the peninsula of Sorrent, but to a minor degree also in Naples itself³⁴. So hopefully in the future we will have the possibility to compare our *fabrics* to local raw materials, but as the analysis and evaluation of these studies is still going on at the moment, for this second edition of **FACEM** we decided to concentrate on the first topic and give only an overview of supposed local/regional *fabrics* from the Bay of Naples from the Archaic Period to the first c. A.D. in regard to fine and coarse wares, leaving also transport amphorae for the next edition.

The code chosen for these *fabrics* is rather generic and reflects our current (poor) state of research: BNAP, short for Bay of Naples (Baia di Napoli), includes the Bay of Naples from Pozzuoli to Naples and the southern plain as far as the peninsula of Sorrentum, but at the same time also the territory of Kyme/Cuma and the island of Pithekoussai/Ischia. However, in our papers suggestions for the possible attribution of *fabrics* or groups of *fabrics* to specific sites are made. It is clear that they have to be regarded as preliminary for the moment.

REFERENCES

- Accorona, F. 1985. "La fornace di Corso Umberto". In *Napoli Antica*: 378–85.
- Ampolo, C. 1996. "Greci d'Occidente, Etruschi, Cartaginesi. Circolazione di beni e di uomini". In *Magna Grecia, Etruschi, Fenici. Atti del 33 convegno di studi sulla Magna Grecia, Taranto, 8–13 ottobre 1993*, 223–252. Taranto: Istituto per la Storia e l'Archeologia della Magna Grecia.
- Arnold, D. E. 1985. *Ceramic Theory and Cultural Process*. Cambridge: University Press.
- Arthur, P. 1999. "La città in Italia meridionale in età tardoantica. Riflessioni intorno alle evidenze materiali. In *L'Italia meridionale in età tardo antica. Atti del 38 convegno di studi sulla Magna Grecia, Taranto, 2–6 ottobre 1998*, 167–99. Taranto: Istituto per la Storia e l'Archeologia della Magna Grecia.
- Belvedere, O., Burgio, A., Iliopoulos, I., Montana, G., and Spatafora F. 2006. "Ceramica a vernice nera di età ellenistica da siti della Sicilia nord-occidentale". *MEFRA* 118/2: 549–71.
- Boardman, J. 1956, "Chian and Naucratis". *BSA* 51: 55–62.
- Boriello, M. R., Greco G., Pontrandolfo, A., Lista, M., and Prisco, G. 1985. "La necropoli di Castel Capuano". In *Napoli Antica*: 228–30.
- Bragantini, I. 1991. *Ricerche archeologiche a Napoli. Lo Scavo di Palazzo Corigliano, 1*. AnnArchStorAnt 15, Quad. 7. Naples: Istituto Universitario Orientale.

³⁴ A. De Bonis, member of the team of E. Morrà from the Università di Studi Napoli Federico II and R. Sauer, Universität für Angewandte Kunst, Wien. For first results, see Munzi et al. in this edition of **FACEM**.

- Briant, P., and Descat, R. 1998. "Une registre douanier de la satrapie d'Égypte à l'époque achéménide". In *Le commerce en Égypte ancienne*, edited by N. Grimal, and B. Menu, 59–104. Cairo: Institut Français d'Archéologie Orientale.
- Bruzza, L. 1875. "Scoperta di Figuline in Pozzuoli", *Bullettino dell'Istituto di Corrispondenza Archeologica*: 242–56.
- Buchner, G. 1970/1971. "Recent Work at Pithekoussai (Ischia), 1965–71". *AR* 17: 63–7.
- Buchner, G. 1972. "Pithecosa: scavi e scoperte 1966–71". In *Le Gente non greche della Magna Grecia. Atti dell'11 Convegno di Studi sulla Magna Grecia, Taranto 1971, Napoli 1972*, 361–74. Taranto: Istituto per la Storia e l'Archeologia della Magna Grecia.
- Buchner, G., and Ridgway, D. 1993. *Pithekoussai I. Monumenti antichi*, IV. Rome: Accademia nazionale dei Lincei: Giorgio Breitschneider.
- Buchner, G. 1994. "I giacimenti di argilla dell'isola d'Ischia e l'industria figulina locale in età recente". *Quaderno del Centro studi per la storia della ceramica meridionale*: 17–45.
- Caputo, P., and Regis, C. 2009. "Rinvenimento di una fornace di età bizantina a Cuma: L' area della Cava Greca a Cuma". In *Les céramiques communes d'Italie et de Narbonnaise*, edited by M. Pasquali, 109–15. Collection du Centre J. Berard, 30. Naples: Centre J. Berard.
- Carsana, V., Boetto, G., Giampaola, D. 2009. "Il porto di Neapolis e i suoi relitti". *Arqueologia nautica mediterranea*: 457–470.
- Chiosi, E. 1996. "Cuma: Una produzione di ceramic a vernice rossa interna". In *Les céramiques communes de Campanie et de Narbonnaise (1er s. av. J.-C.-2e s. ap. J.-C.)*. *La vaisselle de cuisine et de tables. Actes des Journées d'Étude, Naples, 27–28 mai 1994*, edited by M. Bats, 233–255. Collection du Centre J. Berard, 14. Naples: Centre J. Berard.
- Comfort, H. 1963/1964. "Puteolan Sigillata at the Louvre", *RCRF Acta* 5–6, 7–28.
- Comfort, H. 1973. "Terra Sigillata: La ceramica a rilievo ellenistica e romana". *EAA*: 810–11.
- Cuozzo, M., d'Agostino, B., and Del Verme, L. 2006. *Cuma: le fortificazioni 2. I materiali dai terrapieni arcaici*, AION 16. Naples: Edizione Lui.
- De Bonis, A., Grifa, G., Langella A., Morra, V. 2009. "Le ceramiche comuni di Cuma". In *Les céramiques communes d'Italie et de Narbonnaise: structures de production, typologies et contextes inédits, IIe s. av. J.-C.-IIIe s. apr. J.-C.* *Actes du colloque de Naples, organisé les 2 et 3 novembre 2006 par L'ACR "Archéologie du territorial national" e le Centre J. Bérard*, edited by M. Pasqualini, 309–30. Naples: Centre J. Bérard.
- De Carolis, E., Grifa, C., Langella, A., Morra, V., and Soricelli, G. 2009. "Ceramiche tardo antiche da Pompei". In *Les céramiques communes d'Italie et de Narbonnaise: structures de production, typologies et contextes inédits, IIIe s. av. J.-C.-IIIe s. apr. J.-C.*, *Actes du colloque de Naples, organisé les 2 et 3 novembre 2006 par L'ACR "Archéologie du territorial national" e le Centre J. Bérard*, edited by M. Pasqualini, 651–72. Naples: Centre J. Bérard.
- De Rossi, G. 2008. "Le Produzioni ceramiche in età bizantina". In *Museo Archeologico dei Campi Flegrei 1. Catalogue*, 425–26.
- Dupont, P. 2000. "Traffics méditerranéens archaïques. Quelques aspects". In *Die Ägäis und das westliche Mittelmeer. Beziehungen und Wechselwirkungen 8. bis 5. Jh. v.Chr. Akten des Symposions, Wien 24. bis 27. März 1999*, edited by F. Krinzinger, 445–60. *Archäologische Forschungen*, 4. Vienna: Verlag der Österreichischen Akademie der Wissenschaften.
- Ettlinger, E. 1990. "Die italische Produktion". In *Conspectus formarum terrae sigillatae italico modo confectae*, edited by E. Ettlinger, B. Hedinger, B. Hoffmann, Ph. M. Kenrick, G. Pucci, K. Roth-Rubi, G. Schneider, S. von Schnurbein, C. D. Wells, S. Zabehlicky, 4–13. *Materialien zur römisch-germanischen Keramik*, 10. Bonn: Habelt.

- Febraro, S., and Giampaola, D. "Scarti di ceramica comune di età ellenistica dallo scavo di piazza Nicola Amore a Napoli: dati preliminari sulla produzione". In *Les céramiques communes d'Italie et de Narbonnaise*, edited by M. Pasquali, 117–32. Collection du Centre J. Berard, 30. Naples: Centre J. Berard.
- Gasparri, C., and Greco, G. 2007. "Cuma. Il foro. Scavi dell'Università di Napoli Federico II, 2000–2001". *Atti della Giornata di Studi, Napoli*, 22 giugno 2002, edited by C. Gasparri, and G. Greco. Quaderni del Centro Studi Magna Grecia, 5. Studi Cumani, 1. Pozzuoli: Naus.
- Gasparri, C., and Greco, G. 2009. "Cuma. Indagini archeologiche e nuove scoperte". In *Atti della Giornata di Studi, Napoli*, 12 dicembre 2007, edited by C. Gasparri, and G. Greco. Quaderni del Centro Studi Magna Grecia, 7. Studi Cumani, 2. Pozzuoli: Naus.
- Gassner, V. 2003. *Materielle Kultur und kulturelle Identität in Elea in spätarchaisch-frühklassischer Zeit. Untersuchungen zur Gefäß- und Baukeramik aus der Unterstadt (Grabungen 1987–1994)*. Velia-Studien 2. Wien: Verlag der Österreichischen Akademie der Wissenschaften.
- Gassner, V., and Trapichler, M. 2011. "About **FACEM**. The Method of Description of Fabrics". In **FACEM 2011** (www.facem.at)
- Gassner, V., Greco, G., and Sauer, R. 2003. "Analisi archeometriche a Velia: ceramiche arcaiche e laterizi". In *Elea – Velia, le nuove ricerche, Atti del Convegno di studi*, 14 dicembre 2001, *Quaderni del Centro Studi Magna Grecia I*, edited by G. Greco, 199–205. Pozzuoli: Naus.
- Gassner forthcoming. "Le anfore Greco-occidentali: riconsiderando la loro evoluzione e l'identificazione dei centri di produzioni". In *Hommages à Michel Bats*, Biama (forthcoming).
- Giampaola, D. 2005. "Il mare bagna Neapolis: archeologia urbana del porto antico". *Aequora, jam, mare..._Mare, uomini e merci nel Mediterraneo antico*. Atti del Convegno Internazionale Genova, 9-10 dicembre 2004, edited by Canepeta, C., Grasso, L., and Gianatassio, B. M., 87–99. Firenze: All'Insegna del Giglio.
- Giampaola, D., Fratta, F., and Scarpati, C. 1996. Neapolis: la mura e la città. Indagini a S. Domenico Maggiore e a S. Marcellino. *AnnAstorAnt* 3: 115–138.
- Gill, D. W. J. 1987. "Positivism, Pots and Long Distance Trade". In *Classical Greece: Ancient Histories and Modern Archaeologies*, edited by I. Morris, 99–107. Cambridge: Cambridge University Press.
- Greco, G., Ferrara, B., and Tomeo, A. 2012. "L'area sudoccidentale del Foro di Cuma: le produzioni ceramiche". In **FACEM 2012** (www.facem.at).
- Hampe, R. 1965. *Bei Töpfern und Ziegeln in Süditalien, Sizilien und Griechenland*. Mainz: Verlag des Römisch-Germanischen Zentralmuseums Mainz.
- Hedinger, B. 1999. *Die frühe Terra Sigillata vom Monte Iato, Sizilien, Ausgrabungen 1971–1988, und frühkaiserzeitliche Fundkomplexe aus dem Peristylhaus 1*. Studia Ietina, 8. Lausanne: Payot.
- Hedinger B., von Schnurbein, S., and Schneider G. 1999, Die frühe Terra Sigillata aus den Grabungen des Deutschen Archäologischen Instituts in Karthago 1974–1991, in: *Karthago III*, edited by F. Rakob, 289–402. Mainz a. Rh.: Philipp von Zabern Verlag.
- Kenrick, P. M. 1985. "The Fine Pottery. Excavations at Sidi Khrebish, Benhazi (Berenice) III 1". *Libya Antiqua Suppl.* 5. Tripoli: Department of Antiquities.
- Kenrick, P.M. 1987. " "Tripolitanian Sigillata". North African or Campanian". *Libyan Studies* 18: 73–88.
- Kenrick, P. M. 1996. "The Importation of Italian Sigillata to Algeria". *Antiquités Africaines* 32: 37–44.
- Kenrick, P. M. 2002. "N. Naevius Hilarius at Cumae". In *Céramiques de la Graufesenque et autres productions d'époque romaine. Nouvelles recherches. Hommages à Bettina Hoffman*, edited by M. Genin, and A. Vernheit. 13–15. Montagnac.

- Laforgia, E. 1986. "Ceramica a vernice nera dallo scarico di fornace di Corso Umberto". In *Atti del 25 Convegno di studi sulla Magna Grecia. Taranto, 3-7 ottobre 1985*, 362-66, Taranto: Istituto per la Storia e l'Archeologia della Magna Grecia.
- Lamboglia, N. 1952. "Per una classificazione preliminare della ceramica campana". In *Atti del 1 Congresso internazionale di Studi Liguri. Monaco, Bordighera, Genova, 10-217 apr. 1950*, 139-206. Bordighera: Istituto Internazionale di Studi Liguri.
- Lasfargues, J., and Picon, J.-M. 1982. "Die chemischen Untersuchungen". In *Die unverzierte Terra Sigillata aus Haltern*, edited by S. v. Schnurbein, 6-21. *Bodenaltertümer Westfalen 19*. Münster: Aschendorff.
- Lepore, E. 1967. "La vita politica e sociale". In *Storia di Napoli I*, 139-371.
- McKenzie-Clark, J. 2012. The Supply of Campanian-Made Sigillata to the City of Pompeii. *Archaeometry* 54/5: 796-820.
- Mirti, J., and Davit, M. 2001. "Technological Characterization of Campanian Pottery of Type A, B, C and of Regional Products from Ancient Calabria (Southern Italy)". *Archaeometry* 43: 10-33.
- Morel, J.-P. 1981. *Céramique Campanienne. Les Formes*. BEFAR 244. Rome: École Française.
- Morel, J.-P. 1985. "La ceramica campana A nell'economia della Campania". In *Napoli Antica: 372-78*.
- Morel, J.-P. 1985a. "Remarques sur l'art et l'artisanat de Naples antique". *Atti del 25 convegno di studi sulla Magna Grecia, Taranto*, 305-25. Taranto: Istituto per la Storia e l'Archeologia della Magna Grecia.
- Morel, J.-P., and Picon, M. 1994/1995. "Les céramiques étrusco-campaniennes: recherches en laboratoire". In *Ceramica romana e archeometria: lo stato degli studi*, edited by G. Olcese, 23-46. Quaderni del Dipartimento di Archeologia Università di Siena, 37. Firenze: All'Insegna del Giglio.
- Morra, F., De Bonis, A., Grifa, C., Langella, A., Cavassa, L., and Piovesan, R. 2012. "Minero-Petrographic Study of Cooking Ware and Pompeian Red Ware (*Rosso Pompeiano*) from Cuma (Southern Italy)". *Archaeometry* 54: 1-28.
- Munzi, P. 2007. "Un contesto arcaico da Cuma : le ceramiche decorate, non figurate, di produzione colonial". In *Ceramiche fini a decoro subgeometrico del VI secolo A.C. Etruria meridionale e in Campania*, edited by D. Frère, 9-30. Rome: Ecole française de Rome.
- Munzi, P., Guarino, V., de Bonis, A., Grifa, A., Langella, A., and Morra, V. 2012. "Le ceramiche ellenistiche del santuario perturbano settentrionale di Cuma. In **FACEM 2012** (www.facem.at).
- Napoli antica. 1985. *Napoli Antica. Catalogue of an Exhibition*, edited by Soprintendenza Archeologica per le Province di Napoli e Caserta. Naples: Macchiaroli.
- Nizzo, V. 2007. *Ritorno ad Ischia: dalla stratigrafia della necropoli di Pithekoussai alla tipologia dei materiali*. Collection Centre J. Bérard, 26. Naples: Centre J. Bérard.
- Olcese, G., Picon, M., and Thierrin Michael, G. 1996. "Il quartiere ceramico sotto la chiesa di Santa Restituta a Lacco Ameno d'Ischia e la produzione di anfore e di ceramica in età ellenistica". *BA* 39/40: 7-29.
- Olcese, G. 1999. "La produzione di anfore e ceramica a vernice nera a Ischia in età ellenistica: il quartiere artigianale sotto la chiesa di Santa Restituta a Lacco Ameno". In *Proceedings of the XVth International Congress of Classical Archaeology, Amsterdam July 12-17*, edited by R. F. Docter, and E. M. Moorman, 290-93. *Allard Pierson Series*. Amsterdam: Allard Pierson Museum.
- Olcese, G. 2004. "Anfore greco-italiche: Anfore greco-italiche antiche. Alcune osservazioni sull'origine e sulla circolazione alla luce di recenti ricerche archeologiche ed archeometriche". In *Metodi e approcci archeologici: l'industria e il commercio nell'Italia antica*, edited by E. De Siena, and H. Dessales, 173-92. *BAR Int. Ser. 1262*. Oxford: Archaeopress.

- Olcese, G. 2010. *Le anfore greco italiche di Ischia: archeologia e archaeometria. Artigianato ed economia nel Golfo di Napoli*, Roma: Edizione Quasar.
- Olcese, G. 2012. *Atlante dei siti di produzione di ceramica (Toscana, Lazio,, Campania e Sicilia) con le tabelle dei principali relitti del Mediterraneo occidentale*. Immensa Aequora, 2. Rome: Quasar.
- Oxé, A., Comfort, H., and Kenrick, P. M. 2000. *Corpus Vasorum Arretinorum. A Catalogue of the Signatures, Shapes and Chronology of Italian Sigillata*. *Antiquitas* 3/41, 2nd ed. Bonn: Habelt.
- Petacco, L., and Rescigno, C. 2007. I saggi sul Capitolium e il settore occidentale di piazza forense, In *Cuma. Il foro. Scavi dell'Università di Napoli Federico II, 2000–2001. Atti della Giornata di Studi, Napoli, 22 giugno 2002*, edited by C. Gasparri, and G. Greco. 77–117. Quaderni del Centro Studi Magna Grecia, 5. Studi Cumani, 1. Pozzuoli: Naus.
- Picon, M. 1988. "Sur l'origine de quelques groupes de céramiques d'Olbia". In *Vaisselle et alimentation à Olbia en Provence (v. 350–v.50 av. J.-C.)*, edited by M. Bats, 250–55, *RANarb Suppl.* 18. Paris: Editions du Centre national de la recherche scientifique.
- Pontrandolfo, A. 2000. "La ceramica attica di IV secolo in area tirrenica". In *La céramique attique du IVe siècle en Méditerranée occidentale. Actes du colloque international organisé par le Centre Camille Jullian, Arles 7–9 décembre 1995*, edited by B. Sabattini, 121–130. Collection du Centre J. Bérard, 19. Naples: Centre J. Bérard.
- Porten, B., and Yardeni, A. 1993. *Textbook of Aramaic Documents from Ancient Egypt III*. Winona Lake, Ind.: Eisenbrauns.
- Pucci, G. 1975. "Cumanae Testae". *La Parola del Passato* 30: 368–71.
- Ridgway, D. 1984. *L'Alba della Magna Grecia*. Milan: Longanesi.
- Rescigno, C. 1998. *Tetti campani, età arcaica: Cuma, Pitecusa e gli altri contesti*. Rome: Giorgio di Bretschneider.
- Sauer, R., and Gassner, V. 1999. Archäometrische Herkunftsbestimmung von Gefäßkeramik und Dachziegeln aus Velia. *Forum Archaeologiae* 10/III/99.
- Schneider, G., and Daszkiewicz, M. 2006. "Chemische Analysen zum Tafelgeschirr aus dem Militärlager von Dangstetten". In *Dangstetten III. Das Tafelgeschirr aus dem Militärlager von Dangstetten*, edited by K. Roth-Rubi, 169–83. *Forschungen und Berichte zur Vor- und Frühgeschichte in Baden-Württemberg* 103. Stuttgart: Theiss.
- Schneider, G., and Hofmann, B. 1990. "Chemische Zusammensetzung italischer Sigillata". In *Conspectus formarum terrae sigillatae italico modo confectae*, edited by E. Ettlinger, B. Hedinger, B. Hoffmann, P. M. Kenrick, G. Pucci, K. Roth-Rubi, G. Schneider, S. von Schnurbein, C. D. Wells, and S. Zabehlicky, 27–38. *Materialien zur römisch-germanischen Keramik*, 10. Bonn: Habelt.
- von Schnurbein, S. 1982. *Die unverzierte Terra Sigillata aus Haltern*. Bodenaltertümer Westfalen 19. Münster: Aschendorff.
- Soricelli, G. 1982. "Un'officina di N. Naevius Hilarus a Cuma". *Archeologia Classica* 34: 190–94.
- Soricelli, G. 1987a. "Appunti sulla produzione di terra sigillata nell'area flegreo-napoletana. Puteoli". *Studi di storia antica* 11: 107–22.
- Soricelli, G. 1987b. " "Tripolitanian Sigillata": North African or Campanian?". *Libyan Studies* 18: 73–87.
- Soricelli, G. 1993. "La 'Terra Sigillata' puteolana". In *Puteoli*, edited by F. Zevi, 48–50. Napoli.
- Soricelli, G. 2004. "La produzione di Terra Sigillata in Campania". In *Early Italian Sigillata. The Chronological Framework and Tradepatterns. Proceedings of the First International ROCT Congress*, edited by J. Poblome et al., 299–307. *BABesch Suppl.* 10, Leuven: Peeters.

- Soricelli, G., Schneider, G., and Hedinger, B. 1994. "L'origine delle „Tripolitanian Sigillata“/„Produzione A della Baia di Napoli“ “. In *Ceramica Romana e archeometria: lo stato degli studi, Atti delle Giornate Internazionali di Studio, Castello di Montegufoni (Firenze), 26–27 aprile 1993*, edited by G. Olcese, 67–88. Firenze: All'Insegna del Giglio.
- Sourisseau, J. C. 2011. "La diffusion des vins grecs d'Occidente du VIIIe au IVe s. av. J.-C., sources écrites et documents archéologiques". In *La vigna di Dioniso. Vite, vino e culti in Magna Grecia. Atti del quarantunesimo convegno di studi sulla Magna Grecia. Taranto 24–28 settembre 2009*, 143–252. Taranto: Istituto per la Storia e l'Archeologia della Magna Grecia.
- Trapichler, M. 2006. "Kontinuität und Veränderung. Studien zur Keramik spätklassischer und hellenistischer Zeit aus Velia", Ph.D. diss., Vienna University (unpublished).
- Trapichler, M. 2012a. "The Pottery Production in the Bay of Naples. The Glazed Wares". In **FACEM** 2012 (www.facem.at).
- Trapichler, M. 2012b. "The Pottery Production in the Bay of Naples". The Coarse Wares". In **FACEM** 2012 (www.facem.at).
- Trapichler, M. 2012c. "The Pottery Production in the Bay of Naples". The Fine Banded Wares. In **FACEM** 2012 (www.facem.at).
- Yardeni, A. 1996. "Maritime Trade and Royal Accountancy in an Erased Custom Account from 475 B.C.E. on the Ahiqar Scroll from Elephantine". *BASOR* 293: 67–78.

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