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Amphorae Production in Calabria

Introductory Note

Our knowledge of the Greek amphorae production in Calabria is still very limited as until now only one single pottery workshop has been explored extensively at the site of Lokroi/Locri on the Ionian coast.¹ While the production of Greek amphorae in Sicily or Campania has been explored in a series of studies, for reconstructing the amphora repertory of Calabria we still have to rely on assumptions, some of which are rather verisimilar, or on analyses of finds from the export region.² Most of these publications concentrate on the presentation of the morphological repertory and in general are not connected with archaeometric research.³

Therefore the following classification of fabrics is based on our own studies, conducted mainly in the years 1996–1998 together with Roman Sauer who carried out the mineralogical and petrographical analyses.⁴ The approach of that project was to collect samples of various wares supposed to be local, as plain wares or ceramic building materials, and to compare them to local raw materials. Thus on that occasion we did not concentrate on amphorae, but tried to gain an overview over the characteristics of the respective local production in general. Due to various reasons⁵ our sampling area on the Tyrrhenian coast concentrated mostly to the south of the gulf of Lamezia reaching as far as Rhegion/Reggio di Calabria, while on the Ionian side important centers like Locri,⁶ Caulonia, Croton and Sybaris were included. Unfortunately, we were not able to obtain samples from amphorae that can be securely attributed to the gulf of Taranto with Taranto itself, Siris/Heracleia and Metaponto. Because of the geographic vicinity, the long lasting and very differentiated political and cultural contacts of the Gulf of Taranto and the Adriatic coast on the one hand, and the Illyrian and Epirote side on the other, the situation here is without doubt more complex than in other region of Magna Grecia.⁷

As in the majority of cases an important percentage of our samples stems from Velia where imports from Calabria are particularly frequent in the fifth century B.C.E.⁸ The remaining part of the samples consists of finds from various other sites in the Central Mediterranean like Pithekoussai/Ischia⁹ or Buthrotum/Butrint. An important contribution is owed to the ampho-

¹ Barra Bagnasco 1992; Barra Bagnasco et al. 2001.

² For finds from Sicily: Spagnolo 2002; Barone et al. 2002; Barone et al. 2004; for Lipari see Cavalier 1986; Campana 2000. For the hypothesis of an amphorae production at Sybaris see e. g. Sourisseau 2000, 137–46 and Van der Mersch 1996, 163 note 106 for the assumption of wine production at Sybaris. For morphological studies of finds from the export region see e.g. Di Sandro 1986; Van der Mersch 1989 and – in general – Van der Mersch 1994; Savelli 2006; Savelli 2009.

³ See however Sauer and Gassner 1999; Gassner 2003; Gassner and Sauer 2002; Gassner et al. 2003; Gassner 2006; Gassner and Trapichler 2010.

⁴ These studies have been financed by a project of the Austrian Science fund (P-10476-SPR) and strongly supported by Giovanna Greco, Luigi Cicala and Luigi La Rocca, all then Università di Studi Napoli, Federico II, Dipartimento delle discipline storiche E. Lepore.

⁵ Main reason is that the sampling strategy in this project depended strongly on personal contacts, disponibility of responsables and other coincidences.

⁶ See the paper “Amphorae Production of Locri” by V. Gassner in **FACEM** (version, 06.06.2011).

⁷ See the paper “Amphorae Production of the Ionic-Adriatic Region” by V. Gassner in **FACEM** (version, 06.06.2011).

⁸ See Gassner 2003, 113–19; 186–95.

⁹ See Di Sandro 1986 and – re-evaluating Di Sandros provenance classification – Gassner 2003, 194, tab. 16. Note that in this publication the samples from Ischia have been attributed in a general way to Calabria while now we have worked out a more detailed classification.

rae from the shipwreck of Cala San Vicenç.¹⁰ Most of these samples have been analyzed by Roman Sauer who identified or confirmed the provenance from Calabria. In many cases he also suggested a possible region of origin, mostly by comparison with local clays which he collected during the campaign 1996 to 1998.

To sum up, at the present state of research our knowledge of the amphora production in Calabria is so limited that the attribution of fabrics to a single production center did not seem appropriate, so we decided to subsume all those fabrics under the fabric code "Calabria". In those cases in which we have some ideas of the area the fabric could come from, these hypotheses are mentioned in the following text that is organized according to possible geographic regions.

Fabrics from Western (?) South Calabria

For the fabrics CAL-A-1 to CAL-A-3 Roman Sauer suggested an origin in Southern Calabria, most probably in an area from Capo Vaticano (near Vibo Valentia and Tropea) to the surroundings of Reggio Calabria. A more detailed distinction of the raw materials of the Tyrrhenian side from those of the Ionic coast still has to be done.

CAL-A-1 This fabric is characterized by a buff matrix that is densely tempered with rather coarse, colorless, white and grey quartz inclusions. To a minor degree we also see carbonate-pseudomorphoses. Typical is the discrete, but constant presence of mica, sometimes poorly visible in the images.

The fabric CAL-A-1 has been defined on the material from the mud brick houses at Velia¹¹ where it appeared rather frequently; it also could be identified among the amphorae of the fifth century B.C.E. from the Scarico Gosetti.¹² Two other samples of a comparable type come from Rhegion (M 55/1) and from the Stombi material at Sybaris (M 45/4). One of the samples from Caulonia (M65/5) also corresponds largely to CAL-A-1.

CAL-A-2 This fabric represents a variant of CAL-A-1 and is distinguished from it by the frequent appearance of carbonate-pseudomorphoses and by red inclusions that cannot be observed on CAL-A-1. Both fabrics were attributed to the same mineralogical-petrographical group (RVA010) by Roman Sauer.

CAL-A-3 CAL-A-3 is very similar to the previous fabrics as well, and like these, characterized by the rather coarse tempering with quartz. It can be distinguished from CAL-A-1 by the occurrence of red inclusions, while the carbonate-pseudomorphoses, characteristic for CAL-A-2, are missing.¹³

While most samples from Velia belong to the first half of the fifth century B.C.E., the sample M10/13 (CAL-A-3) comes from a Late Graeco-Italian amphora.¹⁴ The percentage of red inclusions seems to be slightly higher than in the earlier samples but the similarities are so close as to make a common origin probable. Thus the export of South Calabrian amphorae to the Campanian region did also take place in the second century B.C.E.¹⁵ Imports from Calabria to Campania have not only been found at Velia, but also at Pithekoussai where CAL-A-3 was observed on a Western Greek Amphorae with Gassner's rim 1, corresponding to the type A-MGR 1 of Sourisseau (M37/1). At Paestum we sampled an amphora of the same type from the necropo-

¹⁰ See Santos Retolaza 2009; Sauer and Gassner 2009. We are grateful to Marta Santos Retolaza for entrusting us with the archaeometric analyses of these important finds.

¹¹ Gassner 2003, 115, fabric A 21.

¹² Di Sandro 1986, sg 88, sg 90; see Gassner 2003, 194, tab. 16.

¹³ These samples have earlier been attributed to various fabrics, like A 11 (Gassner 2003, 353) or AH 20 (Liko 2001c).

¹⁴ *Anfore greco-italiche recenti* of Manacorda 1989, 443–67.

¹⁵ See also below CAL-A-5 and 6.

lis Ponte di Ferro (M 28/1). A more complex situation emerged at Caulonia where we sampled amphorae from Tréziny's excavations of the fortification, unfortunately none of the published samples.¹⁶ One of our samples (M 65/3) is very similar to the specimens from Velia, but we cannot decide if at Caulonia this is a local or an imported piece. In the first case this would be a hint to similarities of raw materials on both sides of the peninsula.

Fabrics from Eastern South Calabria (region of Rhegion)

The fabrics CAL-A-4 and CAL-A-5 can be linked to the pottery production of the coastal strip immediately south of the area of Reggio di Calabria. When looking for good evidence for the identification of the amphorae production of this area we were kindly offered samples from the late antique kiln area of Pellaro, loc. Fiumerella, where Keay 52 amphorae were produced.¹⁷ The fabrics of these samples displayed the general characteristics observed for other Calabrian fabrics, but could be definitely distinguished from those of the group CAL-A-1 to 3 by another color, finer temper and the more frequent occurrence of carbonate-pseudomorphoses. The petrographic analyses showed further that CAL-A-4 and CAL-A-5 are distinguished by a different spectrum of heavy minerals. We therefore have to conclude that two slightly different raw materials were available in the area and that both were used contemporaneously by amphorae workshops in the classic and Hellenistic period as well as in Late Antiquity.

It should be noted that both fabrics resemble the fabric LOC-A-1, which might be due to similar geological conditions in the South Eastern part of Calabria.¹⁸

CAL-A-4 The sample M 55/2 has been defined as a representative sample for the fabric CAL-A-4. It is characterized by a light brown matrix with clearly visible, irregular quartz inclusions. Seldom, but well visible are carbonate-pseudomorphoses. The sample could be compared to a specimen from Velia (M 10/6) that was taken from an amphora of the type MGS III.¹⁹ Very similar is a sample from an amphorae of the type "rim figure of 8" from Butrint (M 79/73).²⁰ These specimens of Hellenistic date can be taken as an indication that the South Calabrian area was involved in the production of amphorae (and therefore of commodities like wine) for a long time from the Late Archaic and Classic periods to Late Antiquity. Indications for non interrupted continuity of this production also in the Early and Middle Imperial period, however, are not currently available.

CAL-A-5 A macroscopically very similar fabric has been identified on another of these Late Roman amphorae (M 55/3). The matrix is much more orange than CAL-A-4; the temper consists of quartz and white particles, probably carbonate. These differences obviously are of importance as the spectrum of heavy minerals of CAL-A-5 is different from that of CAL-A-4.

¹⁶ Tréziny 1989; the amphorae have been studied by Van der Mersch 1989, 90–109.

¹⁷ We are deeply indebted to the then Soprintendente Dr. Elena Lattanzi for her courtesy. For the excavations of the kiln sites see Andronico 1991; Lattanzi 1991. For the type Keay 52 see Arthur 1989, 133–42; Di Gangi-Chiara et al. 1998, 761–8.

¹⁸ See the paper "Amphorae Production of Locri" by V. Gassner in **FACEM** (version, 06.06.2011). The fabrics of Locri have been defined according to finds from the site and from the kiln area.

¹⁹ The amphora was found in the huge construction pit of the Augustan Insula II where many finds from the Late classic to the Hellenistic period appeared. The fabric was defined as AH 10 in the internal classification of Velia, see Liko 2001c.

²⁰ The amphorae should be published in a volume edited by K. Neeft and R. Docter, Bouthrotos II. La Céramique. Unfortunately, the publication of this profound study is in delay until today. The amphorae were studied by Rold Docter, archaeometric analyses was conducted by Roman Sauer together with Verena Gassner. For the time being see Nanaj 1995, 149–73.

Fabrics from the Eastern Coast of Calabria

The following group of fabrics could be correlated to production sites on the Ionian side of Italy in the region between Crotona and Sybaris/Thurioi. During the campaign 1996-1998 several samples of raw material were taken and it appeared that a very similar clay reaches from the south of Sybaris to the region of Crotona. Therefore it remained debatable if the products of these two important towns can be discerned by the raw materials used. The same problem was encountered with samples from Caulonia that are very similar to this group as well as to CAL-A-1 to 3.

CAL-A-6 The matrix of this fabric is light brown to pink and rather hard with a large amount of regularly sorted inclusions, mainly quartz of white, grey, red and black color. The so-called bimodal sorting of the inclusions as well as the different color of matrix and inclusions make sure that this fabric cannot be confused with CAL-A-1. The fabric CAL-A-6 has been defined on two samples from Sybaris in the material of the Stombi excavations which belong to the type of Western Greek amphorae of the Late Archaic period.²¹

Archaeometric analysis and the comparison of the fabric with local raw materials collected in the area south of Sybaris were able to prove that the clays used for that fabric did not come from the immediate surroundings of Sybaris, but potentially from the region to the south of the town in direction to Capo Cirò and Crotona where similar raw materials could be found. The direct and exclusive correlation of CAL-A-6 with the famous and much discussed amphora production of Sybaris is therefore not possible²². It is possible that the workshops of Sybaris used clay sources in the south of the territory but the sampled vessels might also have been imported from neighboring Crotona, the amphorae production of which is unfortunately still rather unknown.

The fabric CAL-A-6 had also been recognized in one group (group A) of amphorae found in the shipwreck of Cala Sant Vicenç near Mallorca which all belong to Sourisseau's type A-MGR 1.²³ The discovery of a quite conspicuous amount of amphorae from this production center, evidently destined for a market in the Western Mediterranean proves the importance of the production which is underlined by the identification of the fabric also on a Late Archaic Western amphora of the same type among the finds of the *scarico Gosetti* at Ischia.²⁴

It also has been observed on few amphorae from Butrint (M 79/66-67) that all belong to Western Greek amphorae with Gassner's rim 1.²⁵

CAL-A-7 is rather similar to the previous fabric, but on the macroscopically examination the matrix seems finer, the sorting of the quartz particle is more irregular and also the size of the particle varies. The fabric was found on an amphora of Sybaris which belongs to the group of Western Greek amphorae with Gassner's rim 2.²⁶

CAL-A-8 is rather similar to CAL-A-6, but is distinguished from it by its natural temper content. The inclusions are smaller and poorly sorted, the black ones being dominant besides the quartz particles. All samples come from the shipwreck of Cala Sant Vicenç near Mallorca.²⁷ Some particularities of their production, like a significant low firing temperature, make it verisimilar that they were all produced in a workshop. The interesting fact is that unlike the samples of CAL-A-6, they all belong to Sourisseau's type A-MGR 2. As they were found together on

²¹ Both samples were not published in the excavation reports: Sibari II-V. M 45/1 belongs to Gassner's rim 2, M 45/5 was classified as A-MGR 2 of Sourisseau 1993, 64-7 = Gassner's rim 3.

²² E. g. Sourisseau 2000, 140.

²³ Santos Retolaza 2009; for the fabrics see Sauer and Gassner 2009.

²⁴ Sample M 37/2, Di Sandro 1986, sg 82, see also Gassner 2003, 194, tab. 16.

²⁵ For the general state of publication at Butrint see note 20. The amphorae in question were published in Nanaj 1995, 158-59, pl. IV.

²⁶ Gassner 2003, 188 tab. 12; Sauer and Gassner 2009, 367-68.

²⁷ Santos Retolaza 2009; for the fabrics see Sauer and Gassner 2009.

board a single ship, a chronological difference can be excluded and it seems that the choice of a different morphological type was rather due to the traditions of various workshops or production centers.

CAL-A-9 is characterized by a rather compact orange matrix and poorly sorted inclusions of quartz; dominant are angular red and dark grey particles. The analysis of Roman Sauer showed that the sample petrographically is similar to CAL-A-6, but macroscopically it can be clearly distinguished. The amphora M 45/3 comes from Sybaris and is a Western Greek amphora with Gassner's rim 1 (=Sourrisseau A-MGR1)²⁸.

Calabrian Fabric of Unclear Provenance

CAL-A-10 is a rather fine fabric with a pale brown matrix, tempered by very fine quartz inclusions and fine white particles which may be referred to carbonate-pseudomorphoses. Most typical is, however, the high percentage of dark mica by which this fabric can easily be recognized in reality. As mica is unfortunately one of the features that might appear poorly on photos, this might require particular attention for identifying the fabric. Petrographically CAL-A-10 is very close to the group CAL-A-1 to 3 (RVA010a), but macroscopically it is very distinctive because of the fine tempering.

At our present state of research, the fabric has been identified only on Western Greek amphorae with Gassner's rim 3 and 4 from Velia.²⁹ Very similar, is a sample of the same type from the Scarico Gosetti at Ischia (M 37/8).

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²⁸ Published in *Sibari II*, 94, no. 12264, figs. 67, 86.

²⁹ It occurred in the (hitherto unpublished) amphorae material from the crossroad in front of Insula II in contexts of the second half of the fifth century B.C.E. For the context see now Trapichler 2003b, presenting the repertory of glazed wares.

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