

The Bricks of Elea-Velia: Archaeology and Epigraphy of Production

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Abstract

The bricks' production represents the most significant Velia's craftwork in the Hellenistic age. The bricks' analysis, still in progress in a large research project, has been developed both on the morphological and on the epigraphic level. Production is characterized by a high degree of bricks' standardization, square and rectangular shape, and for the stamp's system with a "constant" and an "invariable" stamp. The considerable quantity of specimens available in the urban area, in situ or erratic, offers a very broad sample of analysis, destined for increase with the continuation of research. Production, strictly controlled by the local administration, it seems to be aimed at large public construction sites. Its circulation, however, it remains tied to an exclusively sub-regional context.

The production of fired bricks constitutes one of the most distinctive aspects of the crafts of Elea/Velia in the Hellenistic period. The authors are engaged in a new archaeological and epigraphic study of this production, based on a complete census of all the specimens from the urban area. This study is yielding new data on the organization of brick manufacturing and regarding the issue of where these bricks were first employed.¹ In the present paper, we give a brief outline of our ongoing work. This outline is intended as a contribution to the debate on the creations of Magna Graecia workshops in the Hellenistic period.

Typology

The bricks under study are square or rectangular in shape, have one or two rectangular grooves on the top, and a flat bottom.² Their dimensions are modular, which is evidence of the synchronous use of different types in the same walls.

Type 1 is square in plan, measuring 38 cm on average on the side, and 8/10 cm in height. Type 2, which is rectangular, measures 56/57 × 37/39 × 8/10 cm, and is thus longer than it is wide. Type 3 is also rectangular in plan and has a single groove (fig. 1). Its dimensions (37/39 × 17/18 × 8/10 cm) correspond to half the base module. Type 4 is, again, rectangular in plan, but wider than it is long (37/38 × 55/57 × 8/10 cm), which obviously reflects on the dimensions of the two grooves. So far, no specimen ascribable to Schleuning's type *d*, distinguished by three grooves, has come to light;³ however, the type is reported in R. U. Inglieri's excavation's report of the eastern neighborhood.⁴



Tipo 1



Tipo 2



Tipo 3



Tipo 4

1:5

Fig. 1: Typology of Elean Bricks.

While this basic repertoire is well-known in the literature, we have detected some variants whose typological features will need to be defined more accurately as our cataloguing work goes on. The variations regard both the module and the morphology of the bricks. Regarding the former, the presence of Type 1 specimens with a module reduced by at least 7 cm should be remarked (fig. 2, f). Since they carry the city stamp, they were evidently part of the overall brick production placed under the control of the local administration, just like their larger counterparts, of which they clearly constitute an intentional variant, whose purpose still needs to be clarified.⁵

As to the morphology of the bricks, some remarkable specimens, with a single groove (17.4 max × 18.2 × 9 cm) or a double groove (54.5 × 23 max × 9.7 cm), are characterized by an oblique short side, sloping inward either from right to left or vice versa (fig. 2, b–c).⁶ Bricks of this type – which are not easy to spot among the fragmentary specimens – may have been placed at obtuse angles in walls, with the oblique short side on the face. In other cases, instead, we observe variations in the size of one of the longitudinal sections of the brick reserved between the grooves, which is wider than the other longitudinal sections in the same specimen, and than the average width of the longitudinal section in other bricks of the same type.

Another variant encompasses specimens with the same shape and size as Type 3 bricks, but where the grooves extend across the whole length of the brick, to the two short sides (fig. 2, a).⁷ This variant was apparently meant to be laid only lengthwise. Alternatively, these bricks may have been used to build special structures, such as small canals, vents or drains built into walls, etc.

A particularly interesting specimen lacks grooves, is square in plan, and has a slightly smaller module (35.6 × 36.5 × 6 cm) than Type 1 – from which it obviously derives, given its 6 cm height (fig. 2, f).⁸ Remarkably, this brick does not carry the typical stamps of Elean-produced bricks. It could hence bear witness to a parallel production, intended for a different use.

The final type in this overview of Elean brick workshops is represented by ring or disc-shaped specimens (diam. 30 to 35 cm and 28.5 cm, respectively), both with the same average thickness of 8.5 cm (fig. 2, d–e). Some fragments of the ring type still bear their stamp, indicating that bricks of this format, too, were part of the large-scale brick production carried out for the state administration. In view of this, a further reflection on how the ring and disc-shaped bricks were employed is in order.

At this stage of the project, it may be useful to take stock of the preliminary quantitative data, which pose several problems, especially as regards the fragmentary specimens. We have recorded 3021 specimens so far, a truly remarkable number compared to other archaeological contexts in Magna Graecia. They come from different sectors in the city. Some are *in situ*, others are sporadic finds. Of course, this number is destined to increase as the project goes on. The repertoire may thus grow into one of the broadest and most significant in southern Italy.

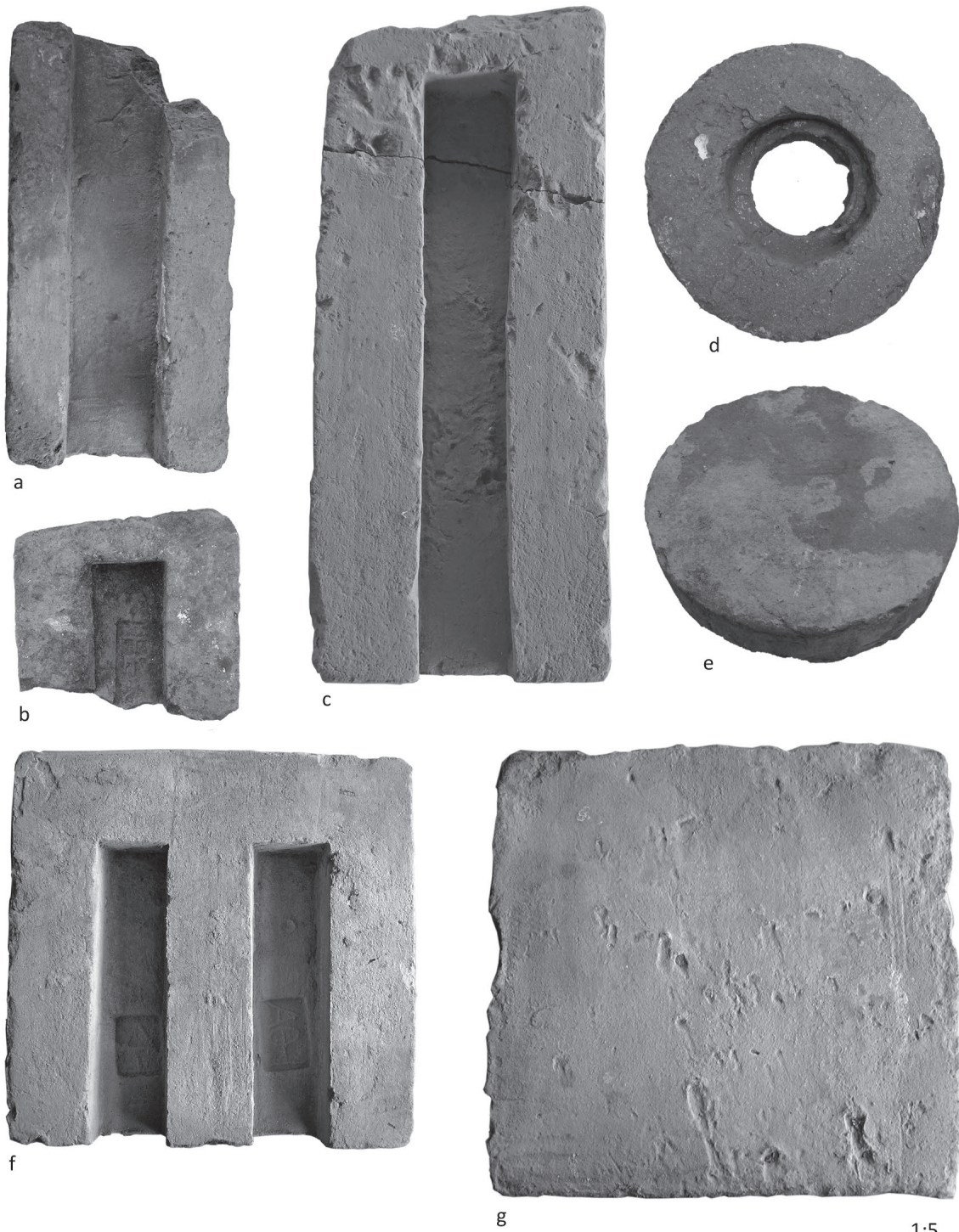


Fig. 2: Specimens of Elean Bricks.

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The quantitative data about the recognized types – excluding variants, for the time being – must be regarded in the light of several aspects. For example, our classification only took account of whole specimens or stamped fragments, to minimize the risk of overestimating the number of individuals. In many cases (988 out of 3021), the presence of a stamp potentially identifies an individual, but poor preservation precludes typological attribution. Among the material recorded so far, Type 1 is the most frequently occurring, with 1186 specimens (fig. 3). It is followed by Type 2, with 554 specimens, and then by Types 4 and 3. Type 5, which lacks grooves, has been recognized in only two cases and is hence so far statistically insignificant. Round bricks also occur in low numbers (23 out of 3021); most are ring-shaped. The relative frequency of types in this sample may not fully reflect the actual original frequency of different types of bricks in buildings, since the sample includes prevalently reemployed materials from different areas of the city. However, this first sample seems large enough to be regarded as indicative at least of a rough trend, especially if we only take into consideration whole specimens and fragmentary specimens whose type can still be recognized. Another argument in favor of the representativeness of our sample is that Type 1 bricks, the most frequent, are square, and thus very versatile for use in wall-building. They are also closer than other types to the traditional formats of mud bricks. Further classification will certainly shed new light on these questions.

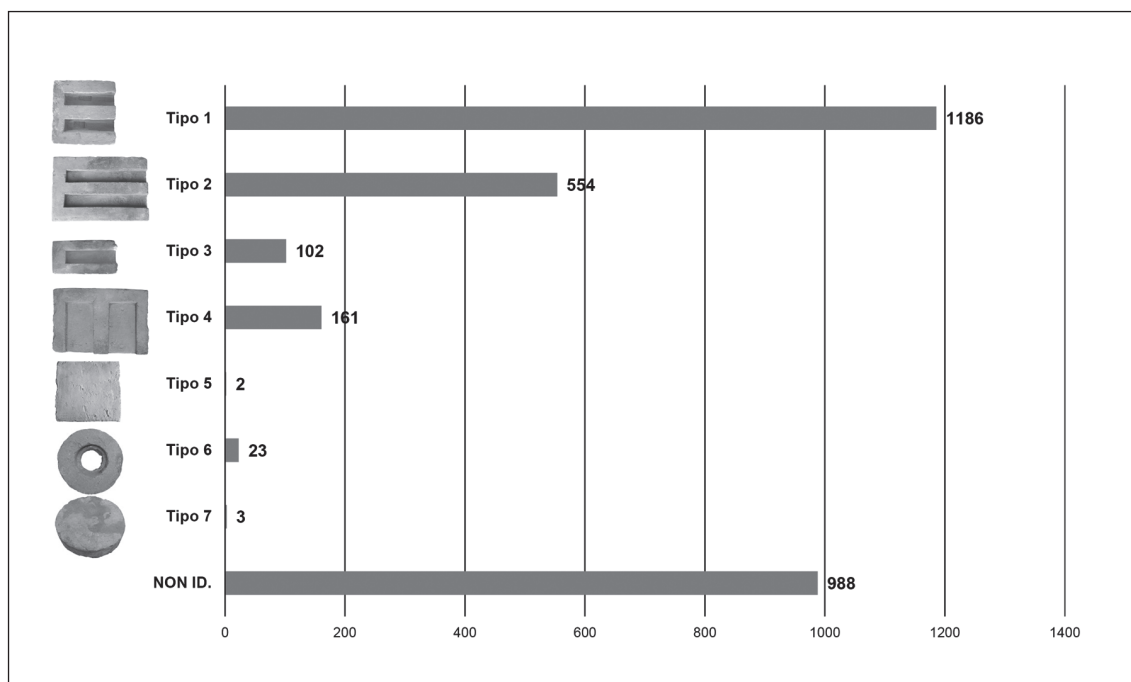


Fig. 3: Chart of Elean Bricks' Sample.

The Organization of Production

These bricks are a distinctive development of the Velia workshops, probably derived from the local mudbricks, whose 8–10 cm thickness they retain. The grooves, which extend for the whole length and breadth of the bricks, were made by means of stamps. Various interpretations have been offered for the purpose of the grooves. They certainly ensured better firing and reduced the weight of the brick. Interestingly, however, the grooves are different in Types 2 and 4, which are of the same size. Schleuning's Type *d*, also of the same size, has the same arrangement of grooves as in Type 4, but the grooves are three and smaller in size, as in Type 2.

While our sample is vast, we do not have any information about the location and organization of the brick manufacturing areas. A single kiln has been recorded so far. It dates to the Hellenistic period and lies in the southern suburb, in the valley of the Fiumarella. Furthermore, its actual use for brick production is debated.⁹

Brick production was promoted and controlled by the local administration, as the stamping system bears out. This control guaranteed a high degree of standardization in a manufacturing activity that lasted for over two centuries. According to the most accepted chronologies, the Elean bricks were produced from the late fourth or early 3rd century BC to the 1st century BC. However, we still lack reliable stratigraphic associations to confirm this timeframe, especially as regards the initial production phase.

The use of the bricks is still debated. Their first study, by P. Mingazzini, did not address this issue, limiting itself to illustrating the morphology of the bricks and possible parallels.¹⁰

Considering the scope and characteristics of brick production at Velia, and the fact that it was under strict control by the local administration, the hypothesis has been put forward that the bricks were made for a specific building program, and particularly for the erection of the town walls.¹¹ It should be noted, in this regard, that C. P. Sestieri, who discovered the first stretch of the lower city along the tower of the southern Porta Marina, hypothesized that the upper part of the walls, above the *opus quadratum* part, had been built of bricks.¹² Sestieri draw the attention to the regularity of the razing of the stone curtain, which suggested that the fired brick part had been removed for reuse elsewhere.

These bricks may thus have been mainly produced for the building of the city walls and subsequent maintenance work, in the light of the fact that they do not seem to be commonly used within the city, with the exception of some public complexes, such as the Hellenistic baths and the western building of the acropolis temple. So far, only one stretch of the walls still retains part of the brick curtain in situ. It lies in the northern quarter of the city, and belonged to the inner curtain. It is not clear whether the upper part of the walls of both curtains was built of bricks, and whether they were built separately or connected by a filling to form a wall walk.

When the defensive circuit lost its usefulness from the early imperial period onward, the second major cycle in the lives of these bricks began. Both the whole and the fragmentary specimens were systematically reemployed. The bricks stripped from the walls were used especially in private buildings, where they were adapted to Roman building techniques, as in a distinctive *opus reticulatum* observed in some funerary enclosures in the necropolis of Porta Marina Sud.

The Bricks of Velia: Production and Use

As is the case for several other sites in Magna Graecia, there was no significant circulation of the bricks produced at Elea outside of the city's territory. Their dissemination appears to be limited to a sub-regional, prevalently coastal context, where their employment shows no distinctive features. Only few specimens have been recorded immediately north of Elea, at Paestum. Surveys in the coastal strip to the south of the city have detected some fragment dispersion areas and, in some cases, reemployment of whole specimens (fig. 4).¹³ It has recently been suggested that bricks were produced in



Fig. 4: Distribution Map of Elean Bricks.

the valley of the Mingardo to be employed at the site of Palinuro, which in the Hellenistic period was part of the territory of Velia.¹⁴ Interestingly, no Elean bricks are attested at the Moio della Civitella,¹⁵ a fortified site whose attribution to Elea itself or to Lucanian peoples is still debated in the literature. Likewise, at the Lucanian site of Caselle in Pittari chessboard-style technique has been recorded, which is well documented at Elea in the Hellenistic period, but so far no specimens of Elean bricks.¹⁶ The occurrence of the chessboard-style technique here can be interpreted as evidence of the circulation of technical knowledge and/or workers.

Even further south, the only evidence comes from Blanda, a Lucanian fortified settlement which has so far yielded three brick fragments in secondary contexts. These fragments could reflect different circulation dynamics than those related to building sites.¹⁷

The presence at other sites, such as Locri, of bricks that resemble Elean types, but do not display exactly the same features, poses a more complex problem.¹⁸

The Stamping System

The stamped bricks of Velia, which have always attracted the interest of both scholars and visitors, usually bear two stamps. One is constituted by the unchanging acronym ΔH , and we have hence labeled it the “constant” or “invariable” stamp. The other, constituted by a sequence of letters, from a minimum of two to a maximum of five, varies from one specimen to the other, and we thus call it the “variable” stamp (fig. 5).¹⁹

The letters are enclosed in cartouches that are almost always rectangular or square, although oval or round cartouches occasionally also occur. They are never located on the smooth face of the bricks, but always on that with the grooves, clearly to hide them from sight when the bricks were laid, whether in floors or in walls. Their position on the brick, however, varies. They may both be impressed in the same groove or the same raised section, or freely arranged on different grooves or raised sections.

The stamps are mostly obtained from hollowed-out punches yielding letters in relief inside a cartouche. In some cases, instead, they feature hollow letters impressed with punches in relief. Sometimes the letters were traced manually in the clay, with no recourse to punches.

The letters are between 1 and 3 cm tall. They are often tied together and usually arranged horizontally, rightward or leftward, sometimes vertically. Different punches were usually employed for “invariable” and “variable” stamps, but some cases of both being impressed with a single punch are also known.

Along with these more common types, there are some stamps constituted by an unabbreviated anthroponym, in the genitive case, arranged on two lines (fig. 6). Since the bricks carrying this kind of stamp are only partly preserved, we do not know if they were associated with the “invariable” stamp or not.

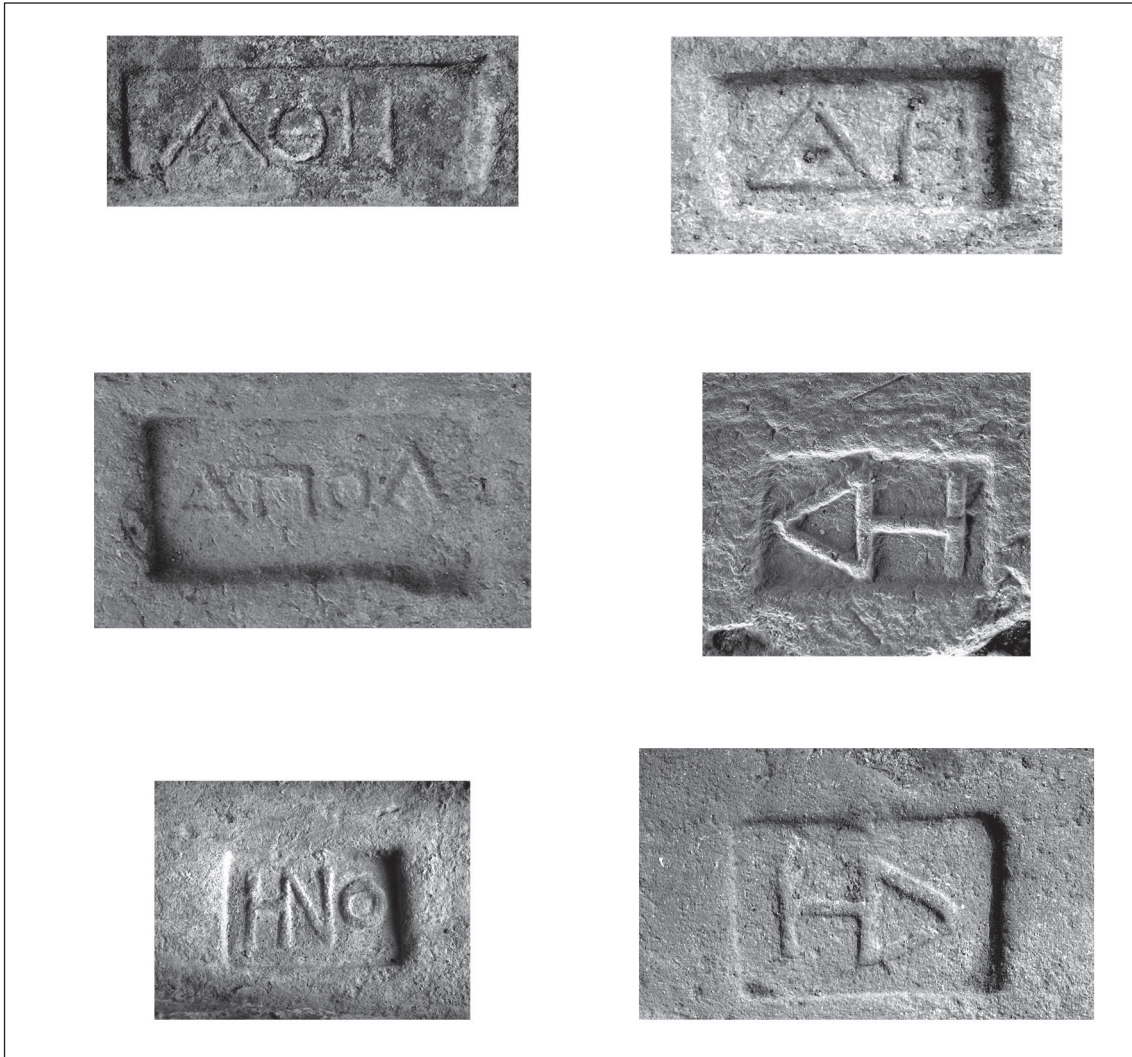


Fig. 5: Elean Bricks. A sample of Stamps.

As regards the “invariable” stamp, in some of the round stamps the acronym ΔH is associated with the letter Π , which could be the initial of *plinthos*; the acronym may thus stand for *demosia plinthos*, that is, “public brick” (fig. 6).

The paleographic features of the letters in the stamps point to a chronological range spanning the third and 2nd centuries BC.

The “variable” and the “invariable” stamp have been interpreted in different ways.²⁰ The “invariable” one, constituted by the acronym ΔH , has been explained as an abbreviation of the adjective *demosios*, referring to an implicit noun such as *keramos*, *keramis* or *plinthos*. It is thus believed to denote the public ownership of the bricks, their destination for public building projects, or a form of control or management of brick production by the state.²¹



Fig. 6: Elean Bricks. A sample of Stamps.

In the past it has often been suggested that the “variable” stamp could refer reference to the building the bricks were made for, or a production connected to a sanctuary, but this hypothesis does not seem to be tenable. All of the many acronyms recorded so far are explainable as anthroponyms, many of which are attested in local onomastics, including the apparent theonyms (e.g., AΘH, AΠO, EPM) (fig. 5–6).²² It is unlikely that a double set of references is involved, consisting partly of anthroponyms and partly of theonyms, without one being distinguishable from the other.

In general, the “variable” stamp has been thus regarded as the abbreviation of an anthroponym, identified as the name of the eponymous magistrate, that of the owner or manager of the workshop, that of the person charged with controlling the production, or that of the manufacturer of the brick.²³

As to the acronym ΔH, it is important to note that it also appears on tiles and on blocks of the city walls and other public buildings at Velia between the 4th and 2nd century BC.²⁴

It thus evidently alludes to the state through a reference to the assembly of the *demos*. This institution is documented by a decree of the city of Elea found at Cos, datable to 242 BC²⁵ and thus coeval with the use of the acronym ΔH on bricks or blocks.

It is thanks to this decree that we have some information about the political organization of Elea, such as the fact that it featured an unspecified number of *archontes* and an assembly designated as *demos*. The term is used again to designate the local political assembly in a later inscription, a dedication in honor of Caius Iulius Naso datable between the 1st century BC and the 2nd century AD. The epigraph also refers to a *synkletos*, a more restricted assembly, or possibly a council of sorts.²⁶ Scholars have debated whether this *synkletos* already existed before this period; however, this decree being bilingual, it is likely that here *synkletos* is merely the canonical Greek rendering of the term *senatus*.

The acronym ΔH, written with the same lettering as in the stamps, also occurs on a *kerykeion* discovered in the nearby Lucanian center of Roccagloriosa. In this case, it has been interpreted as an expression of the local community, which allegedly borrowed the symbol and term (*demosion*) from Italiot cities.²⁷ This interpretation, however, is unconvincing, because Roccagloriosa is also the place of origin of a well-known decree in Oscan where the local community is designated as *touta*.²⁸ It is likely, instead, that the *kerykeion* from Roccagloriosa actually came from Velia, and thus constitutes a valuable testimony of diplomatic relations between the two communities.²⁹ This obviously raises questions about the relations between Velia and the Lucanian town and, in general, the Oscan-Lucanian world. Strabo's well-known passage³⁰ mentioning Velia's defeating of the Poseidoniates and the Lucani suggests that the city escaped the Lucanian "conquest"; however, the epigraphic evidence clearly indicates that it was hardly impermeable to Oscan influence.³¹

The acronym ΔH could thus be an abbreviation, not of the adjective *demosios* but of the term *demos*, and designate the use the bricks were intended for and, hence, the fact that they were public property. Indeed, in their first employment the Eleatic bricks were only used in public buildings, and never exported. Their (quantitatively negligible) dissemination exclusively along the coast possibly depends on their use in defensive works or even as ballast on sea vessels. A local production at Palinuro may be a case unto itself, but even then the bricks would have still been intended for public use.

The invariable stamp, ΔH, is attested in a variety of graphical variants. This suggests that it is not the stamp of a state organization, but was applied by the producer himself, who thereby possibly guaranteed the standard of his product, since it was destined to be employed in public building projects.

As to the second stamp, the "variable" one, it seems unlikely that it designated the magistrate. This is often the case in the Greek world, but the name is then expressed in

a non-abbreviated form, in the nominative or genitive case, with or without ἐπί; besides, the state is already represented by the “invariable” stamp. A further argument against this hypothesis is that the acronyms are just too numerous. Only a very long duration of the building projects could justify such a variety of stamps, which would correspond to as many years.

The interpretation of the acronyms as a reference to the owners or managers of the brick factory, or the individual charged with controlling the production, is also unlikely: again, they number is too large, even for a production extending over a couple of centuries. It is much more likely that the acronyms refer to the craftsmen working in private or public workshops. This would explain both the number of the acronyms and the many variant abbreviations of the same name or of similar ones, such as Apollodoros or Apollonides.

Some bricks simultaneously carry two different variable stamps.

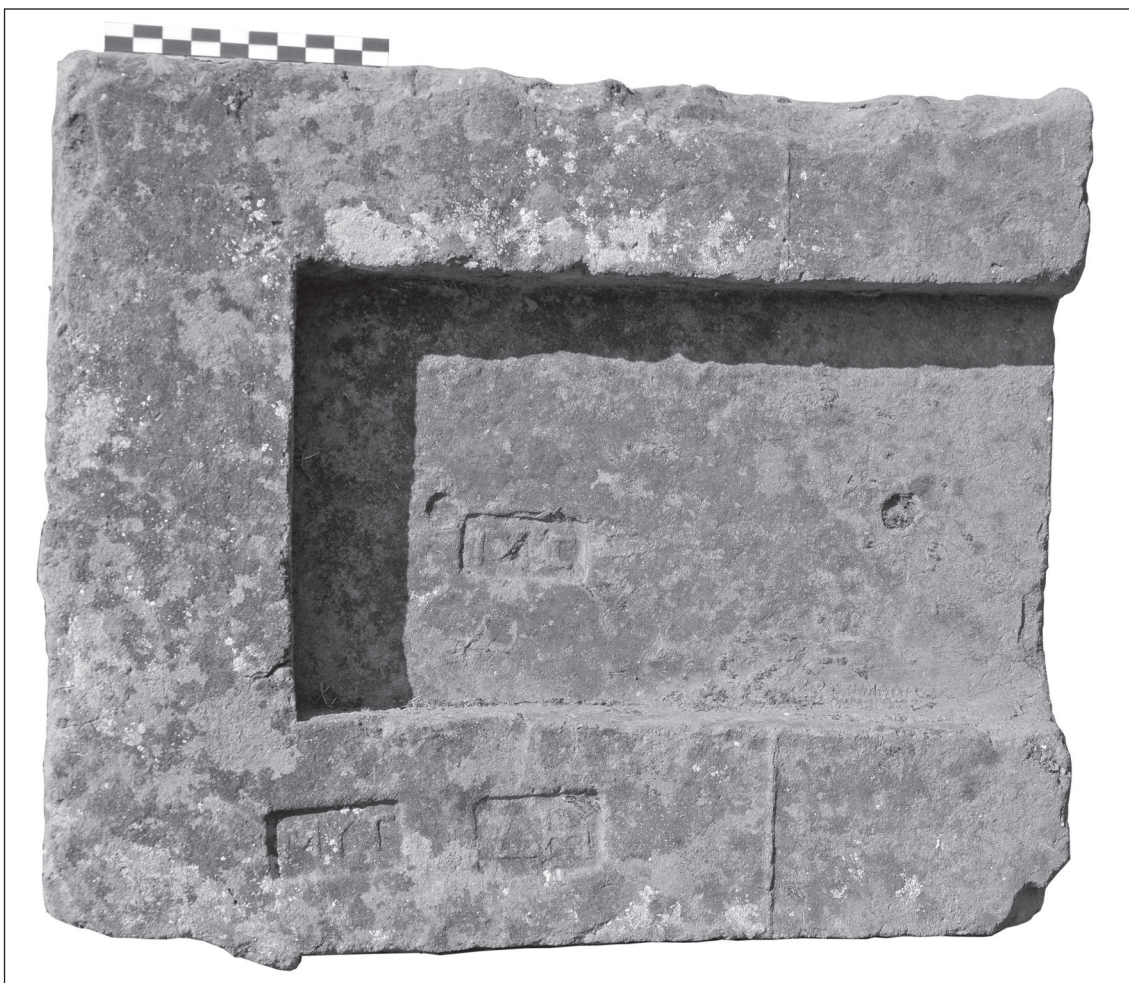


Fig. 7: Elean Brick with two Different Variable Stamps.

In all of these cases, one of the stamps reads ΖΩΙ, with an illegible omega, and is impressed inside the groove, while the other reads ΜΥΤ and is located on the raised section, next to the invariable stamp ΔΗ.

How are these cases to be explained? Was one of the two stamps – presumably that in the groove – impressed by mistake, and the brick then stamped again with the correct stamp, next to ΔΗ?

In any case, the significant datum here is that in the same workshop there would be punches for different stamps. In my opinion, this reinforces the hypothesis that the variable stamp did not identify the owner of the *figlina*, but the *officinator* who materially fashioned the bricks and evidently needed to distinguish his production from that of the others to allow the factory owner to keep the work of his individual *officinatores* under control. One could even construe these individuals as specialized craftsmen who used the stamps to “sign” their work, and may have actually owned the bricks, which were then fired in common kilns; the purpose of the stamp would thus have been to make the brick traceable to its original owner.

As regards chronological aspects, in the lack of a seriation of stamps – one of the objectives of our ongoing project – their date is mainly based on their epigraphic features, which indicate a time range spanning the third and 2nd centuries BC. So far, we lack cases of confirmed first employment of the bricks in dated buildings, with the exception of the Hellenistic baths, which have been dated to the second half of the 3rd century BC, but may actually be as late as the early 2nd century BC.

In contrast with the frequency of the stamp on bricks, we know of only very few tiles bearing the ΔΗ stamp. On these, it is punched or scratched, and differs in size and writing features from those found on bricks.³² Naked-eye examination of the clay indicates that these tiles are largely non-local products, mostly from the Phlegraean area.³³ Here a stamping system similar to Velia’s is documented at Pithecusa in the Hellenistic period, specifically on flat and barrel tiles, which carry two stamps: the usual invariable one, ΔΗ, and a variable one constituted by an abbreviation of a Greek or Oscan name enclosed, as is often the case at Velia, in a single cartouche. Two specimens from Neapolis, instead, are only stamped with the acronym ΔΗ.³⁴

The Elean stamping system has no other parallels in the Western Greece, although bricks stamped with the acronym ΔΗ occur at many sites of Magna Graecia and Sicily.³⁵ Outside of the West Mediterranean, the only other parallel is Thasos, where the bricks are stamped with the adjective *demosios*, written in full or abbreviated, combined with an anthroponym in the genitive which is believed to refer either to the factory owner or to the craftsman.³⁶

The connection of the Elean stamping system with the Pithecusa-Neapolis horizon is very interesting. In the fourth and 3rd centuries BC, Pithecusa was under the control of Neapolis.³⁷ At the time, at least as far as the production of amphorae is concerned, the two constituted a “multi-nuclear productive system”, as it has been recently defined.³⁸ The brick and amphora stamping system should thus be regarded as the expression

of a single state entity. Tiles with the ΔH stamp occur in both cities, whereas only at Pithecusa does the stamp occur on amphorae, in combination with the anthroponymic acronyms. Many of the latter also appear on Neapolitan-made amphorae, but without the ΔH stamp; the latter instead is found on some blocks of the fortifications of Neapolis. At Neapolis, as at Elea, the acronym ΔH appears to refer to the political decision-making institution, the *demōs*, which was also present at Pithecusa, as attested by a decree found at Cos.³⁹ The few specimens of tiles with the ΔH stamp known from Velia so far, some of which are indeed imported from the Bay of Naples, thus again raise the question of the relations of Velia with that area, which are well documented ever since its foundation. The possibility that these relations may also concern the city's brick stamping system is intriguing, and we hope our ongoing work will be able to shed further light on this matter.

Notes

¹ A L. Cicala is the author of the sections “Typology”, “The organization of production”, “The bricks of Velia: production and use”; L. Vecchio of sections “The stamping system”. The study of Elean bricks was resumed in the framework of the project “MaVe. Mattoni velini. Archeologia ed epigrafia della produzione”, directed by L. Cicala (Università di Napoli Federico II) and L. Vecchio (Università di Salerno), cf. Cicala – Vecchio 2014, 301–302.

² On the typology, see Cicala – Vecchio 2014, 284–285; Cicala – Vecchio 2017, 1010–1011.

³ Schleunig 1889, 185 fig. 19; Cicala – Vecchio 2019.

⁴ Cicala 2012, 153 fig. 3.37.

⁵ Cicala – Vecchio 2017, 1010; Cicala – Vecchio 2019.

⁶ Cicala – Vecchio 2017, 1010; Cicala – Vecchio 2019.

⁷ Cicala – Vecchio 2017, 1010; Cicala – Vecchio 2019.

⁸ Cicala – Vecchio 2017, 1010; Cicala – Vecchio 2019.

⁹ Cf., most recently, Gassner – D’Angiolillo 2017; Cicala – Ferrara 2018, 44.

¹⁰ Mingazzini 1954.

¹¹ Cicala – Vecchio 2014, 295–296; Cicala – Vecchio 2017, 1009; Cicala – Vecchio 2019; On “special-purpose brick” see Gerding 2006, 357.

¹² Sestieri 1960, 308.

¹³ Vecchio 2009–2012, 79. On occurrences of bricks at coastal sites and their use in cultic contexts (Palinuro, Isola dei conigli), see, most recently, De Magistris 2016.

¹⁴ De Magistris 2016, 24. 47. 81, who hypothesizes that there were one or two kilns.

¹⁵ Most recently De Magistris 2016, 52, who puts forward the hypothesis that the *opus quadratum* lower part of the wall was topped by a wooden palisade.

¹⁶ Cf. most recently Serritella – Rizzo 2019.

¹⁷ Mollo 2006, 395–396.

¹⁸ Vecchio 2009–2012, 80.

- ¹⁹ For an overview of the question of the stamping system of Elean bricks, we refer the reader to Vecchio 2009–2012, 63–114; cf. also Cicala – Vecchio 2014; Vecchio 2015; Cicala – Vecchio 2017; Cicala – Vecchio 2019.
- ²⁰ Vecchio 2009–2012, 74–77.
- ²¹ Vecchio 2009–2012, 75–77.
- ²² Vecchio 2003, 156–160.
- ²³ For the literature, see Vecchio 2009–2012, 74–75.
- ²⁴ Vecchio 2009–2012, 82–83; Vecchio 2010, 321–361.
- ²⁵ SEG XII 378, 12–16.
- ²⁶ Vecchio 2003, 67–72; Vecchio 2015, 571–576.
- ²⁷ Gualtieri 2011, 99–112.
- ²⁸ Poccetti 2001, 197–274.
- ²⁹ Cf. Vecchio 2010, 342–343.
- ³⁰ Strabo, VI 1,1 C 252.
- ³¹ Vecchio 2003, 109–113.
- ³² Vecchio 2009–2012, 82–83.
- ³³ Vecchio 2016.
- ³⁴ Pugliese 2014, 68–69, with further literature.
- ³⁵ For the literature on this subject, see Vecchio 2009–2012, 67–69.
- ³⁶ Garlan 2001.
- ³⁷ Strabo, V 4, 9 C 248.
- ³⁸ Pugliese 2014, 138–140.
- ³⁹ SEG XII 378, 1–11.

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Figs. 1–7: by Author.

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