

# The Use of Alcover Stone in Roman Times (Tarraco, Hispania Citerior). Contributions to the Officina Lapidaria Tarraconensis

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# ASMOSIA XI

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# THE USE OF ALCOVER STONE IN ROMAN TIMES (*TARRACO*, *HISPANIA CITERIOR*). CONTRIBUTIONS TO THE *OFFICINA LAPIDARIA TARRACONENSIS*

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## Abstract

After the recent re-edition of Tarraco's epigraphic corpus (CIL II<sup>2</sup>/14), we initiated a multidisciplinary project to study the stones used for the town's inscriptions. The study of Santa Tecla stone and the knowledge of the quarries of the territory provides a basis for the study of stone from Alcover, which was employed during the founding period of the *colonia*. Its lithology is very different from the bioclastic limestones and calcarenites so common around Tarragona that supplied large blocks and ashlar (El Mèdol and soldó stones) and facilitates obtaining uniform, thin pieces perfect for plaques. Its use for the earliest epigraphy is one of the clearest pieces of evidence to date the first historic urban phases. Alcover stone was used alongside another local stone, Santa Tecla limestone, which was gradually introduced during Augustan and Julio-Claudian times. However, in Flavian times, Alcover stone was no longer used in epigraphy.

## Keywords

Tarraco, Alcover stone, Roman inscriptions

## Introduction

Updating of the recently re-edited epigraphic corpus<sup>1</sup> is a key element in a multidisciplinary project aiming at understanding the stones used for the inscriptions of Tarraco (Hispania Tarraconensis).<sup>2</sup> After a study of Santa Tecla



Fig. 1. Tarraco in the western Mediterranean context

stone<sup>3</sup> and after advances in our knowledge of the quarries of the territory of Tarragona,<sup>4</sup> (Fig. 1) we now tackle the study of a material employed during the earliest period of the town: Alcover stone. Its lithology is very different from the bioclastic limestones and calcarenites (El Mèdol and soldó stones) that supplied Tarraco with large blocks and ashlar; its structure makes it possible to obtain uniform, thin slabs, which are perfect for plaques. No archaeological evidence at the Alcover quarries sheds light on the beginning or the end of exploitation there, but fortuitous ceramic findings in

1 CIL II<sup>2</sup>/14, 2-4.

2 This paper based on the preliminary results from the ongoing R&D Research project "*Officinae lapidariae Tarraconenses*. Canteras, talleres y producciones artísticas en piedra de la *Provincia Tarraconensis*" (I+D HAR2015-65379-P (MINECO/FEDER, UE)), funded

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3 ALVAREZ *et al.* 2009.

4 GUTIÉRREZ GARCIA-M. 2009; 2011.





Fig. 2. Two examples of the strong bedding of Alcover stone outcrops. A: millimetric/centimetric and B: decimetric bedding (photos: authors)

the quarries have demonstrated the Roman presence at least during the 1<sup>st</sup>-2<sup>nd</sup> centuries AD.<sup>5</sup>

Epigraphy, which provides well-dated inscriptions, is crucial to delineate the chronology of the stone's extraction and use; in this case, its start in the early 1<sup>st</sup> century BC. In fact, the use of Alcover stone in the earliest epigraphy of Tarraco, as in the honorific inscriptions commemorating

the foundation of the colonia in Caesar's time, provides solid evidence to advance our knowledge of the first historic phases of the town.<sup>6</sup>

### Characteristics of Alcover stone

Alcover stone is a sedimentary carbonate rock formed during the Middle Triassic in a shallow lagoon of calm water connected to the Sea of Tethys through a coral reef that restricted the entrance of seawater. These particular conditions created a context in which the continuous sedimentation of very fine particles at the bottom of this lagoon produced this fine-grained stone in which various fossils have been perfectly preserved. It belongs to the Upper Muschelkalk<sup>7</sup> and is a very homogeneous and very fine-grained stone with strong bedding, which results in the natural splitting of the rock into sheets between a few millimetres and 10 cm thick (Fig. 2).<sup>8</sup> Macroscopically it is a compact, grey to light brown, almost beige, calcareous mudstone. Sometimes it may have a red colour which has occasionally led to erroneous identifications with red-toned *marmora* (Fig. 3).<sup>9</sup>

### The epigraphic survey

An epigraphic survey was carried out in spring 2015 by revisiting and updating a previous work of J. F. Roig; this was the sole study until now of inscriptions on Alcover stone and it included 25 entries.<sup>10</sup> Despite its usefulness, a new appraisal was done because of additional archaeological findings; some important pieces led to general considerations about the stone's use.

Thirty-six Latin inscriptions in CIL II<sup>2</sup>/14 are listed as being made of Alcover stone. We excluded three of them because of erroneous information and we registered two as post-classical. We examined 51 inscriptions autoptically, most of which are currently in the warehouse of the archaeological museum.<sup>11</sup> Fifteen inscriptions still

6 ALFÖLDY 2000; 2011, 430.

7 RIBA ARDERIU 1997.

8 GUTIÉRREZ GARCIA-M. 2009, 224.

9 Such as in the case of the inscription CIL II<sup>2</sup>/14, 977, a dedication to Cn. Domitius Calvinus (36 BC) (Fig. 3A).

10 ROIG 2001. Roig provides a useful list of inscriptions in Alcover stone, but his main goal is updating the archaeological data about the quarries and their exploitation in ancient times, and consequently the paper lacks a deeper analysis about the use, function and chronology of the inscriptions.

11 The National Archaeological Museum of Tarragona (MNAT).

5 MASSÓ, ROIG 2004.





Fig. 3. Alcover stone slabs in different colours: A: beige red (due to fire) (CIL II2/14, 977), B: beige (CIL II2/14, 1270) and C: a case of combination of two tones in the same slab (photo: authors)

Fig. 4. Inscriptions of private persons: a freedman (CIL II2/14, 1487) and a freeborn man (CIL II2/14, 1080) (photos: MNAT)

remain to be checked, but these slabs are very fragmentary with just one or two letters. The main result is an updated catalogue that doubles the number of total entries.

Despite its appearance, which is not particularly attractive, Alcover stone was the main material used by people belonging to the higher and upper middle social strata of Tarraco in Late Republican and Augustan times. Indeed, the palaeographic technique of the inscriptions is of top quality (Fig. 4). This rock allows a deep and well-defined cut, which results in lettering that is clear and magnificent, in contrast with the other inscriptions of the time. A comparison between Alcover and El Médol stone inscriptions with similar contents demonstrates great differences in style and appearance.

Epigraphic practice for public tributes to Roman magistrates in Republican times at Tarraco shows that local magistrates, prominent members of the municipal





Fig. 5. Inscription of Divus Iulius from Otriculum (CIL VI, 872 = CIL I, 797) (photo: EDCS/M. Claus)

society and wealthy private individuals preferred local Alcover stone for public as well as private inscriptions.

This preference was also connected with a specific workshop of carvers, which seems to have had connections with Italy. An inscription of Divus Iulius from Otricoli<sup>12</sup> (Fig. 5) dated to 42 BC shows a specific feature that is only known in another case from Tarraco: the dedication to P. Mucius Scaevola<sup>13</sup> (45/44 BC), in a reused slab with a previous inscription for Cn. Pompeius Magnus on the back<sup>14</sup> (71 BC) (Fig. 6). The characteristic hook-shaped apex attached to the letter V<sup>15</sup> confirms the chronology of both inscriptions and testifies to a workshop connection. The palaeographic parallel from Italy highlights the importance of epigraphy as dating element for the use of Alcover stone at Tarraco, and as evidence for the arrival of Italic stonecutters in Hispania at this time.<sup>16</sup>

This preference for Alcover stone in elite epigraphy contrasts clearly with the use of other local limestones, among them El Mèdol stone, which was mostly used for structural purposes. For instance, El Mèdol stone appears in funerary buildings and in parallelepiped blocks that contain private epitaphs.<sup>17</sup> These monuments belonged mainly to ordinary people, freeborn people, freedmen and slaves. According to the palaeography, onomastics and formulae, they date from the first century BC to the



Fig. 6. Opisthographic inscription from Tarraco (CIL II2/14, 991-988) (photos: MNAT)

Augustan age. This type of Mèdol epitaph characterizes the Republican epigraphy of Tarraco and disappears in the first decades of the 1<sup>st</sup> century AD.<sup>18</sup>

Alcover stone was also used alongside Tarraco marble (Santa Tecla limestone), a fine easily workable stone that is characterized by a bright yellowish colour and occasionally a rosy tone. In contrast to the Alcover and Mèdol types, Santa Tecla stone stands out for its beauty and, in fact, its use gradually increased in Augustan and Julio-Claudian times.<sup>19</sup> The earliest inscription in Santa Tecla stone is a dedication to Tiberius dated to 16-14 BC,<sup>20</sup> and it could represent the beginning of the exploitation of this limestone, which was a prestigious local material reserved for the most elite commissions. During the Julio-Claudian period, Alcover stone is well documented as an epigraphic support, but its presence had diminished by the end of the century, at the time of the urbanistic reforms under the Flavians. These changes involved a massive exploitation of Santa Tecla stone as a favourite local building and ornamental material alongside the newly imported Luna (modern Carrara) marble.<sup>21</sup> The Santa Tecla stone quarries continued to be heavily exploited from this period onwards.

At the same time, a change of technique took place in Flavian times when the *officina lapidaria* began to favour new epigraphic monuments in the shape of

12 CIL VI, 872 = CIL I, 797.

13 CIL II<sup>2</sup>/14, 988.

14 CIL II<sup>2</sup>/14, 991.

15 GORDON 1983, 97.

16 ALFÖLDY 2011, 431.

17 GOROSTIDI, LÓPEZ VILAR 2015.

18 For characteristics and formulae in the Republican epigraphy of Hispania, cf. DÍAZ ARIÑO 2008.

19 For private uses in the early Julio-Claudian period: (CIL II<sup>2</sup>/14, 1270; 1620 a-b). A slab containing a dedication to the Victoria Augusta offered by the *colonia Tarraconensium* seems to be the newest public inscription in Alcover stone (CIL II<sup>2</sup>, 14, 864).

20 CIL II<sup>2</sup>/14, 879.

21 ÁLVAREZ *et al.* 2009.



Fig. 7. Slab with an epitaph from the 4<sup>th</sup>-5<sup>th</sup> centuries (CIL II2/14, 1603) (photos: authors)

parallelepiped blocks, a kind of support that previously only stones similar to El Mèdol were capable of providing. As previously noted, archaeology does not offer evidence of when the Alcover quarries were abandoned, but one can have some confidence that their stone was gradually replaced by Santa Tecla and other minor local limestones - among them the so-called “llisós”- until its total disappearance from the epigraphic record.<sup>22</sup>

In fact, Flavian workshops specialized in producing a support that became common in the town: the tripartite monolithic pedestals elaborated in Santa Tecla stone. This type was widespread on the whole conventus Tarraconensis, at the expense of the characteristic inscribed plaques of the Julio-Claudian era.<sup>23</sup> This phenomenon occurred simultaneously with the important urbanistic developments in the upper part of the town under the Flavian dynasty.

### Brief considerations

Alcover stone went out of use for inscriptions after the Julio-Claudian period until Late Roman times, when inscriptions of the 4<sup>th</sup> to 6<sup>th</sup> centuries testify to its use once more (Fig. 7). As we have tried to demonstrate, the reason behind this chronological gap lies in the introduction of the local Santa Tecla stone as well as in

the massive arrival at Tarraco of other types of marble in Flavian times.<sup>24</sup> This promoted a change in epigraphic practices, involving the privileged use of monolithic blocs and the monumental inscriptions in marble from Luna, the imperial marble par excellence.<sup>25</sup>

In this sense, assembling the Roman inscriptions of Tarraco creates an attractive epigraphic landscape composed according to the principles of Late Republican, Augustan and Julio-Claudian aesthetics. The use of Alcover stone as a prestigious support for official monuments derives from previous traditions, but the palaeography reveals the arrival of craftsmen from Italy, who introduced the practice of institutional epigraphy of quality.<sup>26</sup>

In conclusion, the detailed exam of the inscriptions enables the identification of a hierarchy of the use of all these stones; in this hierarchy, Alcover stone is consigned to private uses after Late Republican times through the Julio-Claudian period and gives way to foreign, prestigious marbles and the above-mentioned Santa Tecla stone. Its complete disappearance in the epigraphic record coincides with a change of technique of the *officina lapidaria*. The workshops from the following period were specialized in making a new kind of support that would become the most common in the town: the tripartite pedestals in Santa Tecla stone. This typology was largely widespread on the whole of the conventus Tarraconensis, at the expense of the previously common plaques. This phenomenon occurred simultaneously with important urbanistic changes that were undertaken in Flavian times.

22 About “llisós” and its geological association with Santa Tecla stone, cf. GUTIÉRREZ GARCIA-M. 2009, 208-221.

23 Santa Tecla stone is diffused out of Tarraco in various ornamental purposes. For example, the honorific tripartite pedestals of the Flavian *officina* in Barcino and its territorium, Egara, Sigarra and Ilerda are well documented (cf. ÁLVAREZ *et al.* 2009, 71-80).

24 ÁLVAREZ *et al.* 2009, 81-82.

25 GUTIÉRREZ GARCIA-M, RODÀ 2012  
RUÍZ RODRÍGUEZ 2016.

26 Cf. GOROSTIDI, LÓPEZ VILAR 2015.

## REFERENCES

- ALFÖLDY G. 2000: "Wann wurde Tarraco römische Kolonie?", in G. PACI (ed.): *Epigraphai. Miscellanea epigrafica in onore di Lidio Gasperini*, Tivoli, 3-22.
- ALFÖLDY G. 2011: "*Officina lapidaria Tarraconensis*", in A. DONATI, G. POMA (eds.): *L' officina epigrafica romana*. In ricordo di Giancarlo Susini, Faenza, 429-471.
- ÁLVAREZ A., GARCÍA-ENTERO V., GUTIÉRREZ GARCIA-MORENO A., RODÀ I. 2009: *El marmor de Tarraco. Explotació, utilització i comercialització de la pedra de Santa Tecla en època romana / Tarraco marmor. The Quarrying, Use and Trade of Santa Tecla Stone in Roman Times*, Tarragona.
- CIL II2/14 = ALFÖLDY G., *Inscriptiones Hispaniae Latinae. Pars XIV Conventus Tarraconensis. Colonia Iulia urbs triumphalis Tarraco*, Berlin, 2011-2012.
- DÍAZ ARIÑO B. 2008: *Epigrafía latina republicana de Hispania*, Barcelona.
- GORDON A. E. 1983: *Illustrated introduction to Latin Epigraphy*, Berkeley-Los Angeles-London.
- GOROSTIDI D., LÓPEZ VILAR J. 2015: "La *officina lapidaria* Tarraconense en época augustea: actualización del corpus y primeras consideraciones", in LÓPEZ VILAR, J. (ed): *Actes de 2on Congrés Internacional d'Arqueologia i Món Antic Tarraco Biennal. August i les províncies occidentals. 2000 aniversari de la mort d'August* (Tarragona, 26-29 de novembre de 2014), Tarragona, 257-262.
- GUTIÉRREZ GARCIA-MORENO A. 2009: *Roman Quarries in the Northeast of Hispania (Modern Catalonia)*, Tarragona.
- GUTIÉRREZ GARCIA-MORENO A. 2011: "The exploitation of local stone in Roman times: the case of north-eastern Spain", *World Archaeology* 43 (2), 318-341.
- GUTIÉRREZ GARCIA-M. A., RODÀ I. 2012: "El marmor de Luni-Carrara en la fachada mediterránea de Hispania", in KEAY, S. (ed.) *Rome, Portus and the Mediterranean*. London, Oxbow Books, 293-312.
- MASSÓ J., ROIG J. F. 2004: "Notes sobre un lot de gerres de ceràmica trobat a la pedrera de la Lloera", *Butlletí del Centre d'Estudis Alcoverencs* 107, 13-19.
- MNAT = Museu Nacional Arqueològic de Tarragona.
- RIBA ARDERIU O. (dir.) 1997: *Diccionari de Geologia*, Enciclopèdia Catalana, Barcelona.
- ROIG J. F. 2001: "Inscripcions romanes sobre pedra d'Alcover", *Butlletí del Centre d'Estudis Alcoverencs* 95, 22-46.
- RUÍZ RODRÍGUEZ J. C. 2016: "El uso del mármol lunense en la epigrafía de ámbito público. El caso de Tarraco en época altoimperial (siglos I y II n.e.)", *Cuadernos de arqueología de la Universidad de Navarra* 24, 103-121.