

# The role of marble between as an economic resource and cultural uses in the industrial tourism context

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## 1. The economic importance of marble and the Alentejo region in the Portuguese geological context

Marble are a metamorphic rock derived from limestone that was exposed to high temperatures and great pressures. In commercial terms marbles are classed as a carbonate rock that can be polished. They are included in the ornamental rock sector, which also includes among others: granites, shales and slates. Today, are mainly intended for the sculpture production and urban ornamentation. Their origins are quite diverse, there are marble deposits in many countries, but the most appreciated coming from European production centers, particularly in Belgium, Italy, Spain and Portugal.

In Portugal, the main deposits are found in the Alentejo region, and concentrated in the *Estremoz Anticline*, a tectono-stratigraphic unit, that is part of Ossa Morena zone, one of the geological structures of Iberian Meseta.

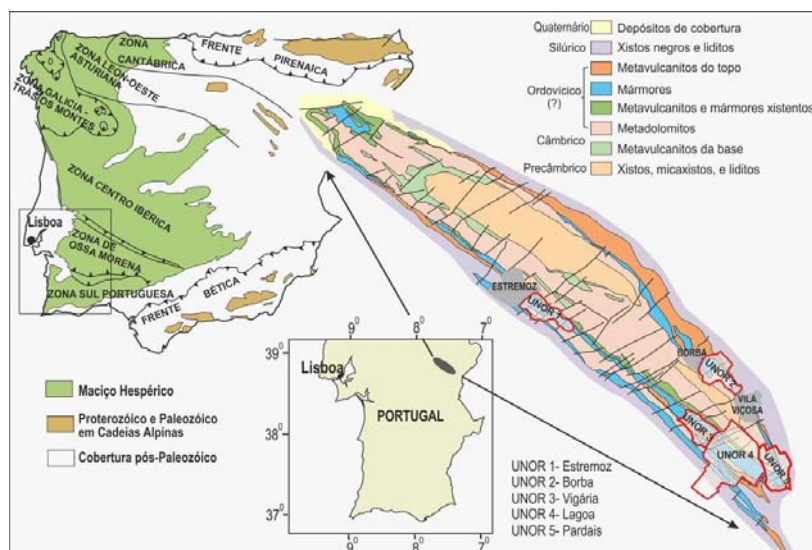


Fig. 1. The Estremoz Anticline (Geological Institute, 1997)

The Anticline territory comprises a dimension about 40km long by 20km wide and encompassing the municipalities of Borba, Estremoz and Vila Viçosa. He presents a crystalline and translucent marble, formed between the Devonian and Carboniferous periods, about 500 million years ago. In terms of chromatic variants, predominate the gray or black marble, called *Ruivina*, the rose marble and a white marble whit shade of pink, cream and blue. (Cevalor, 1992).

According to data from 2012, the extractive industry in Portugal, had a value of 1.037 million Euros, in which, the 31% correspondent to the ornamental rocks. These rocks, recorded at 2.462,468 tonnes of production, which 849,749 tonnes correspondent to marbles and limestones.

The Alentejo region is the largest ornamental rock – producing center in Portugal, where we can find the main areas of granite and marble. In Évora district were placed the marble territory (the Anticlinical), were made the 25% of the total value of the national ornamental

sector, with only 6,7% of the extracted volume, which demonstrates the importance of rocks, namely the marble.

Marbles, and limestones were the most exported category (55% of the total) and the country, in that year, took the place of 5<sup>th</sup> exporter of marbles in the world. (Bes, 2014, D.G.E.G., 2013) Lastly, regarding the future expectations, the reserves of marble in the anticline are estimated around 103 million cubic meters. (Falé, 2006; Cartografia Temática, 2008)

## 2. The historical landscape of marble exploration

The availability of marble in great quantity and quality, led, as would be normal, to the exploration of this resource by different people and civilizations. The archaeological testimonies, the urban civil and religious edification that was erected and arrived to the present day and the descriptive documents of landscapes, histories and visits, send us to the importance of this territory characterized by their permanence as a production center by the last two millennia. (Nunes,1996 ; Maciel,1998 ; Lopes,2000 ; Carneiro,2013 ; Filipe, 2015)

However, for centuries the work in marble activity was made by human and animal effort, using techniques and tools practically unchanged since Roman times. The modernization of this activity only arrives at the beginning of the 20<sup>th</sup> century with the big enterprises whose aim was the exportation to the major international markets.

From 1918, these companies will carry out a modern exploration, bringing through a process of technology transfer, (from Belgium and France) the adoption of steam and diesel, new machineries, the use of the helical wire to cut larger blocks inside the quarry, compressed air drills, the Deucauville rails system, motorized winches to drag the stones and later, with the electrification of the sixties, the large derrick cranes. (Turgan, 1878; La Machine Moderne, 1918; Bavy,1994; Quintas, 2015, Quintas and Filipe,2015)

The chronology of the first wave of companies was as follows: 1918 Society of Marbles and Ceramics of Borba and Estremoz; 1923 *Society of Marbles of Portugal*; 1927 *Sousa Batista Marbles*; 1928 *Society of Marbles of Vila Viçosa*, and *Solubema – Society Luso – Belgian of Marbles*. (Portas, 1931 ; Ribeiro,1933 ; Ribeiro,1934 ; Quintas, 2015)

The most outstanding company has been without doubt the Luso – Belgian society, which has most contributed to the technological modernization of the sector. It was founded in 1928 by several Belgian and Portuguese industrialists and by the great Belgian society *Société Anonyme des Merbes – Sprimont*, with headquarters at that time at Sprimont, in the Belgian region of Wallonia. It was based on other ancient commercial companies dating from the XVIII century, and in that year of 1928, also had the control of three other companies in France, three in Germany, one in England, another in Holland and another in Italy, also with quarries and workshops in Algeria and Morocco. The Italian company was the *Société Anonyme S. Henraux*, in Quarceta, in the province of Luca. It was founded in 1921 and had the control of a dozen quarries scattered throughout the region. (S.A. Merbes – Sprimont, 1928)

This great technological development, coupled with the arrival of many other companies in the following decades (only in the 1960's and 1970's had been registered 182 new marble explorations), resulted in a new great industry with many economic benefits, but also with a great change in the regional landscape. The activity of hundreds of quarries with ever-increasing depths exceeding a half-hundred meters in a so meager and so deeply industrialized territory would end up completely altering the landscape, as never seen before.

This process laid the foundations of the current industrial landscape, which is characterized by hundreds of open pits, mountains of discarded stone debris and an abundance of machinery, especially the large cranes that populate the horizon of the marble zone in Alentejo.

### 3. Culture and industrial tourism in the marble sector

Marble industry, in fact, is more than an economic extractive activity, is also a cultural asset. The raw material, after be worked and transformed, turn in to a artistic or ornamental and contemplative element, a piece of art, a part of a monument, etc. A element that exist everywhere, from the ancient times, the Renaissance, and whit the twentieth century massif exportation, for all the world, then, becomes a universal reference of a specific territory. Also, generated a way of life, a very own community around an ancestral practice and a heritage based in immaterial knowledge, in a production structures and in a muted landscape.

It means, marble industry is also a heritage and identity of the communities, the region and also the country, a symbol, a mark of differentiation. Because that, and also because the industry still alive, in spite of recurring economic crises, it becomes pertinent to study and boosting it from the cultural point of view, as a way to diversifying their economy.

To achieve this objective, the CECHAP association whit university collaboration, has been promoting the study of history and heritage of the marble industry from to 2012, complementing it whit the marble route, a project of industrial tourism, in a multidisciplinary and inclusive perspective.<sup>1</sup>

Their goals are understand the historical evolution of the sector and the territory, using this information in the visit of sites, showing the quarries, the workshops and monuments where exist marble. But goes beyond that, striving to rediscover the countries and places where Portuguese marble was applied, as a way of valuing the material, the restoration practices and also the enterprises.

This strategy brings in account four factors: the dynamics generated by marble industry are also a heritage like others, factories, quarries, machines, are at the same level of a church or a cathedral; the landscape of marble is also a cultural landscape whit their context of production, and relations to the environment; the collective memory is a great element of community aggregation and the collaborative networks whit artisans, catering sector, and of course the university, are fundamental.

The preliminary results are interesting: the research project will enter soon into second phase and becomes a great source of information for other scholars and researcher and the visits have reached a few hundred, whit a growing interest mainly of architecture students from the center of Europe, that have the desire of knowing a landscape of production and the provenience of one of the noblest materials of the construction and urban decoration<sup>2</sup>.

### 3. Bibliography

Alves, Daniel (coord.) Mabre, Heritage for Alentejo: Contributions for its History (1850-1986), CECHAP, 2015

[http://phim.cechap.com/uploads/media/data\\_items/0001/01/Estudo\\_INGLES.pdf](http://phim.cechap.com/uploads/media/data_items/0001/01/Estudo_INGLES.pdf).

Bavay, G. , La «Grande Carrière» P.-J. Wincqz à Soignies, Carnets du Patrimoine n° 3, Ministère de la Région Wallone – Direction Général de l'aménagement du Territoire et du Logement, Division de Monuments, Sites et Fouilles, 1994.

BES – Banco Espírito Santo Research – *Produção de Rochas Ornamentais. Análise sectorial de Fevereiro*, Lisboa, 2014.

Boletim de Informação Estatística da Indústria Extractiva, n° 15, Lisboa, D.G.E.G. - Direcção Geral de Energia e Geologia, 2013.

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<sup>1</sup> <http://phim.cechap.com/en/project>; <http://www.rotadomarmoreae.com>.

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Carneiro, André, « Um primeiro olhar sobre o povoamento romano no concelho de Vila Viçosa », *Callipole, Revista de Cultura*, 21, 2013, pp.199-220.

*Cartografia Temática do Anticlinal – Zona dos Mármore*, Évora, CCDRA – Comissão de Coordenação e Desenvolvimento Regional do Alentejo, 2008.

*Estudo de inventariação das Rochas Ornamentais e Industriais em Portugal*, Cevalor, Centro Tecnológico para o aproveitamento e Valorização das Rochas Ornamentais e Industriais, Borba, 1992.

Falé, Patrícia; P. Henriques; Carvalho, Jorge; Midões, Carla, «O Reordenamento da actividade extractiva como instrumento para o planeamento regional: Vila Viçosa, Portugal», *Boletín geológico y mineiro*, Vol. 2, 2006, pp. 227-288.

Filipe, Carlos, O património edificado em Vila Viçosa no século XVIII: encomenda, financiamento e construção, Lisboa, Tese de Mestrado em História, ISCTE-IUL, 2005.

*La Machine Moderne*, no 104, Décembre 1918, Paris, pp.358-378.

Lopes, Luís et al., « Caracterização Petrográfica dos Monumentos Romanos de Évora », *Revista a Cidade de Évora*, II Série, 4, 2000, pp.129-142.

Maciel, Manuel Justino, « Arte romana e pedreiras de mármore na Lusitânia: novos caminhos de investigação », *Revista da Faculdade de Ciências Sociais e Humanas*, 11, 1998, pp.233-245.

Nunes, Manuel Castro, Os mármore do Alentejo, Uma patine Milenar, Borba, Cevalor, 1996

Portas, Leopoldo, « Os mármore de Vila Viçosa » *Álbum Alentejano*, T. II – Distrito de Évora, Lisboa, Imprensa Beleza, 1931, pp.481-482.

Quintas, Armando, “Técnicas e tecnologias ligadas ao mármore: uma viagem pela história” *Mármore*, Património para o Alentejo: Contributos para a sua História (1850-1986), (Coord. Daniel Alves), CECHAP, Vila Viçosa, 2015, pp.129-159.

Quintas, Armando e Filipe, Carlos, Entrevistas: Firmino Barradas - Metalúrgica António Barradas e Filhos; José Pousadas Pereira - Pirra Máquinas e Ferramentas, Arquivo CECHAP, 2015.

Ribeiro, Félix, Os mármore do Alentejo e a legislação em vigor – tese apresentada ao congresso Alentejano, Lisboa, Oficinas Fernandes, 1933.

Idem, A indústria dos Mármore, Tese apresentada ao I Congresso da União Nacional, Lisboa, Oficinas Fernandes, 1934.

Société Anonyme Merbes – Sprimont, Bruxelles, J. Rozez, 1928.

Turgan, Julien François, Les grandes usines de la France, Études Industrielles en France et à l'étranger, vol.XI, Paris, Calmann Lévy – Libraire Éditeur, 1878.