

Cambrian archaeocyathan limestones in monuments of the Spanish historical cultural heritage

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Introduction

Scientific interest in stone materials used in the historical architecture of monuments and buildings of the Spanish cultural heritage has increased in recent decades. Basically it is a concern to preserve them, therefore the knowledge and study of the decay processes are essential. Also from a historical point of view, it is important to document the provenance of these materials. In many cases, the location of the historic quarries from which the material was extracted is difficult because the mining labors have stopped long ago, or because a lack of record keeping. Among the stone materials used in the monuments and buildings of the Spanish architectural historical heritage are some of early Cambrian limestone with archaeocyaths. Its use as building or ornamental material dates back to several centuries ago from more current times. They can be both seen in the archaeological heritage of Roman times and in Christian cathedrals. The main objective of this study is to recognize previously unknown early Cambrian limestone with archaeocyaths in the architectural elements of Spanish cultural heritage and identify the Cambrian geological unit and the geographical location from which come.

Early Cambrian limestone with archaeocyaths in the Spanish cultural heritage

These limestones have been recognized in some architectural elements of the Roman theatres of Mérida and Regina (Badajoz) and in sculptures of the Royal Palace of Madrid (Menéndez, 2014). Tárraga Baldó (2002) documents the presence of early Cambrian limestone with archaeocyaths in the high altar of the Cathedral of Segovia. Regarding religious architecture, some columns from the Mosque of Córdoba and Cathedral of Toledo were built with limestones with archaeocyaths.

In the cases of the Royal Palace of Madrid and Cathedral of Segovia, it was possible to identify the original quarries from which the stones were extracted. Historical and lapidary archives guarantee that these materials came from Consuegra (Toledo) and Córdoba (Tárraga Baldó, 1992, 2002, 2009).

Recently, early Cambrian limestone with archaeocyaths have been identified in a chapel known as “Hornito de Santa Eulalia”, next to the Basilica of Santa Eulalia (Mérida, Badajoz). The building preserves in its atrium several remains of the Temple of Mars from Roman times that were reused in its construction. Among them, two columns stand out for the presence of easily recognizable skeletal elements of archaeocyathan cups. Cambrian marbles with archaeocyaths have also been recognized in the columns of the Roman Theatre of Regina (Badajoz) (Fig. 1).

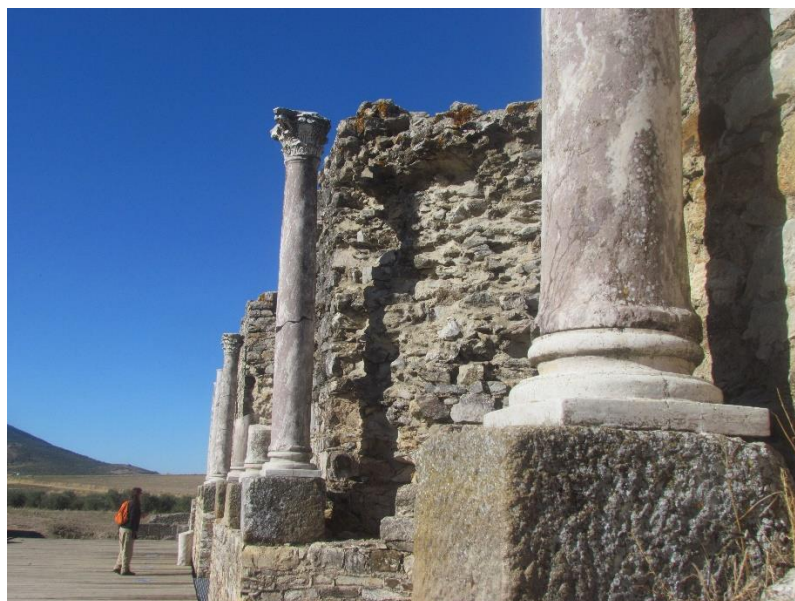


Fig. 1. Detail of a column in the Roman Theatre of Regina (Badajoz).

Conclusions

In the historical and lapidary archives that are still preserved, different sources and information about Cambrian materials used in heritage monuments of Spain were collected. Unfortunately, in other cases there are no such records making it harder to achieve the objectives of this study. Until now, early Cambrian limestone with archaeocyaths have been recognize in a no numerous group of the architectural elements of Spanish cultural heritage. Therefore, all of the cultural heritage that could have incorporated this kind of limestone in its construction or decoration has not yet been explored. Furthermore, to identify the geological unit and the geographical location from which come is very interesting, because of they can be used in the restoration of the monument.

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