

THE USE OF “AURISINA LIMESTONE” IN THE ROMAN ARCHITECTURE (MILAN AND LOMBARDY)

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Riassunto

L'impiego in epoca romana della pietra calcarea fossilifera del Carso Triestino (Aurisina) raggiunse anche l'attuale territorio lombardo. Non solo in alcune città (Pavia, Voghera ecc), ma anche a Milano sono stati identificati diversi manufatti (stele, cornici, conci) dal periodo Augusteo ai Flavi. Il trasporto avveniva nell'Adriatico e lungo le vie d'acqua della pianura Padana, allora perfettamente navigabili come testimoniato da diversi Autori latini.

Introduction

A fossiliferous limestone quarried in the Karst near the Adriatic sea (North-Eastern Italy) was employed in the Roman times in the neighbouring Regio X (Venetia): Cividale, Aquileia, Concordia, Altino, Torcello (stele, funerary monument, capital, ashlar etc). The use of Aurisina stone is also reported in the Regio VIII Aemilia (Emilia-Romagna): Modena [1] or Ravenna. In particular, Theodoric's mausoleum (Ravenna, around 526) shows huge blocks of ashlar and a circular dome (diametre 11 m) hewn from a single block [2].

Transport

The use of Aurisina stone involved also the Regio XI Transpadana (Lombardia) despite a very long distance from the quarries (about 400 km). The quarry location was close to the sea coast, but the delivery of the stone artifacts was a great challenge. Some quotations of Latin Authors may suggest a transport via the Adriatic sea to the river Po and tributaries along the Padania Plain. Vitruvius wrote on the transport of larch “down the Po to Ravenna” (*De Arch.* 2,9,16). Strabo wrote on a two days and two nights journey “down the Po from Piacenza to Rimini” (*Geogr.* 5,1,12). Pliny the Elder wrote on Turin “at which place the Po become navigable” (*Nat. Hist.* 3,17,123). Sidonius in a letter to Heronius, wrote on a quick travel from Pavia “down-stream to the Po” (*Epist.* 1, 5, 3-4).

Petrography

Light grey limestone with irregular white spots, the main feature is the presence of *Rudists*. The *Rudists* are extinct epifaunal bivalves (*Hippuritidae* and *Radiolitidae*): the attached left valve was a tall, conical-shaped shell while the right valve became a lid-like cover. The present-day exploitation embraces three varieties: Fiorito (deformed shells), Granitello (coarse shell fragments - packstone), Roman stone (fine shell fragments - wackestone).

Geology and outcrops

The Aurisina stone pertains to the “Calcari di Aurisina”, a formation made of carbonate platforms deposits and referred to a shallow and warm marine water environment of Upper Cretaceous (Turonian- lower Senonian). The average bed thickness is about 1 metre. The outcrops occupy two different areas of the Karst: southern slope of Monte

San Michele, near Gorizia between Sagrado e Gabria or from the Adriatic sea coast (Sistiana) to the Slovenian territory. The thickness ranges from 1800, near Gorizia, to 4000 m in Slovenia [3].

Quarries

The quarry area is located near Aurisina (Nabrežina), some hundreds metres from the sea coast, about 10 km North of Trieste. Some big chambers supported by huge rock piers are still visible.

Microscopic features

A distinguishing feature is the microscopic aspect of the Rudist shell wall with a part of cellular calcite and a part of equant calcite spar, originally made of aragonite. The examined samples coming from Milan's sites are referred to the "Granitello" with syntaxial overgrowth cement on bioclasts.

Use in Lombardy

Different artifacts made of Aurisina stone were reported in Lombardy: Sale Marasino. Mantua, Cremona, Pavia, Casteggio, Voghera (votive altar, stele, cippus, urn) [4].

New acquisition about the use of Aurisina stone in Lombardy comes from Cremona (p. Marconi excavations): many architectural fragments pertaining to an important building in the southern part of the town, burned after the pillage (69 CE).

Use in Milan

The use of Aurisina stone in Milan was not reported till now [4], but some artifacts made of Aurisina stone were recently detected using optical microscopy. Three funerary stelae: Geminius (Augustan), Magii (Claudian), Vettius (Neronian), previously displayed in the "Archi di Porta Nuova" (via Manzoni) [5]. Many architectural fragments from the site of via Broletto - Lauro: two capitals (St.168516, St.170909 - Augustan); lintels (St.16890), carved profiles (St.16874) and corinthian capitals (St.11057 - Flavian). In the same site were identified thirty-one cornice fragments (St.16923) and some fragments of a lintel (St.16922) pertaining to a corinthian building (Flavian) [6].

Some Aurisina dimension stones are still visible *in situ* in a tower of the city wall at Carrobio (via Medici): Aurisina blocks (size cm 60 - 30) make the lower part of the tower together with blocks of a Quaternary conglomerate (Ceppo Brembo).

Finally, some shafts and capitals in the crypt of the former church of St Giovanni in Conca (11th century) are the consequence of the medieval reuse of Roman pieces.

Conclusion

The fossiliferous limestone of Aurisina, quarried from a marine formation (Upper Cretaceous) near Trieste, was identified in some Roman remains of Milan. The examined artifacts are architectural elements: cornices, lintels, capitals, funerary stelae and ashlar for masonry, dating back to the 1st century (from Augustus to the Flavian emperors). The long distance between the quarries and Milan was probably overcome using a waterway along the Po and other rivers.

References

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