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Proceedings of IV International Congress of Speleology in Artificial Cavities
Italy, Genoa, September 29th / October 1st



EDITORS

Stefano Saj, Carla Galeazzi

Michele Betti, Francesco Faccini, Paolo Madonia





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Piazza Matteotti 9, Genova



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CENTRO STUDI SOTTERRANEI

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St. Euphemia's cave inscriptions: ancient navigation, beliefs and devotion (Vieste, Italy)

Giuliano De Felice¹, Danilo Leone², Mario Mazzoli^{3,4,5,6,*}, Maria Turchiano², Giuliano Volpe¹

Abstract

The paper will refer to the 'sacred' dimension of navigation, which has developed over the centuries and in which it is difficult to distinguish the clear separation between religion, superstition, and beliefs, also testified by the number of cults and deities linked to travelling by sea, from Poseidon to Aphrodite, to the Dioscuri, later replaced by Christ, Mary and Christian saints. The paper will mention this aspect of the navigation, focusing on the lower Adriatic coastal landscape marked by the presence of landings connected to places of worship, sometimes true 'coastal maritime sanctuaries'. Reference will be made to the coastal shrines that mark the Apulian and Albanian shores, in particular to the Venere Sosandra cave at Vieste (Apulia), where a wide archaeological project is underway, carried out by the Universities of Bari and Foggia.

Keywords: cave inscriptions, ancient navigation, Vieste, St. Euphemia.

Introduction

There is now substantial agreement in the scientific community in identifying Vieste with the ancient *Uria*. The various discoveries made over time, the collation of materials and documents and, above all, recent archaeological investigations have increased our knowledge of this Gargano settlement, located on a fundamental stretch of Adriatic navigation in every era (Lippolis, 1984; Petrone, 1984; Ruggieri, 1989; Mazzei and Volpe, 1998; AA.VV., 1998; D'Ercole, 2015).

For some years now, an archaeological team from the Universities of Bari and Foggia, in collaboration with the Rome-based A.S.S.O. and the support of the Municipality of Vieste, the ESAC-Euro Mediterranean Seascapes Archaeology Centre, the Apulia Region and the company ArcheoLogica, as part of a broader research project on the archaeology of Adriatic coastal and underwater landscapes, *The Sea and the Sacred. Landings of men and gods*, has launched an investigation on the islet of St. Eufemia, overlooking the city and dominated by the 20th-century lighthouse (fig. 1). It was the historian and epigrapher Angelo Russi who first drew attention, in the 1980s, to the rich epigraphic heritage engraved on the walls of two artificial cavities excavated along a rocky ridge of the islet, among which stand out some inscriptions mentioning Venus Sosandra, datable between the 2nd and 1st centuries BC (Russi, 1971; 1992; 1998a; 1998b).



Fig. 1 – The islet of St. Eufemia (photo M. Potenza).

The archaeological investigations, which began in 2019, were carried out under a concession from the Soprintendenza Archeologia, Belle Arti e Paesaggio di Foggia. The intervention strategy followed a global approach, which included the survey of the islet and the cavities, the investigation of the shoreline and the opening of some stratigraphic excavation sectors and made it possible to identify important traces of a large and articulated rock system developed along the rocky ridge (De Felice *et al.*, 2020a; 2020b) (fig. 2).

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Fig. 2 – The entrance to the main cavity on the side of the rocky bank (photo G. Volpe).

Archaeological investigations (2021-2022)

After several preliminary investigations conducted in 2019, the two excavation campaigns of 2021 and 2022 (a third campaign will take place in June 2023) provided for the opening of distinct areas, located both in the caves and at certain points on the surrounding plateau, and made it possible to define the characters, nature, and duration of the frequentation of the context and to analyse its articulation and transformations in detail.

The first peculiarity of the context highlighted by the archaeological investigations is the intense and prolonged use of the entire island for the extraction of stone blocks, which it is easy to imagine began in antiquity to obtain material for use in the buildings of *Uria* but continued until recent times, including for the construction of the lighthouse. In particular, the excavation carried out under the modern floor of the underground cavities made it possible to identify the presence of a stone quarry at a lower level and to date the quarrying activity to before the construction of the cavities themselves (fig. 3). Excavation in the external sectors confirmed that the inner plateau in front was a large quarry, both cave and open pit. Deep cuts in the vertical rock faces, straight or circular grooves, flat grooves, alignments of freshly hewn blocks left *in situ* and other indicators of such quarrying activities

are still clearly legible on the outcropping limestone surfaces and provide good evidence of a quarrying practice that continued at least until modern times on other slopes of the rocky ridges as well. Finally, the numerous partially worked millstones found during the survey along the islet's shoreline, reused as mooring bollards, can be linked to the same mining activity.

In addition to the traces of mining activity, the excavations outside the caves have revealed the presence of other structures that can be traced back to a second characteristic that determined the strategic role of the islet over the centuries, namely the presence of fresh water. In particular, the excavation of the rock wall between the two caves, near a staircase cut into the rock to connect the access plateau to the upper level where the lighthouse was built, led to the discovery of two structures excavated in the rocky bank, which can be identified as the remains of two 'bell-shaped' cisterns and a network of open-air catchment channels (fig. 4). It is possible that the cisterns were used for a very long time, before being transformed, by cutting away part of the walls, into tanks for washing or, more likely, for storing and processing fish. In addition to the rainwater collected in the cisterns, the availability of fresh water on the islet was also ensured by some underground springs: the exploration - conducted by ASSO speleologists - of a well lo-



Fig. 3 – The interior of the main cavity: note the two excavation sectors below the modern floor (photo G. Volpe).



Fig. 4 – The cisterns dug into the rocky bank and the system of channels for collecting rainwater (photo G. Volpe).



Fig. 5 – Inspection of the well and freshwater spring (photo M. Vitelli).

cated near the rock context, confirmed the presence of a freshwater spring, active until recent times (fig. 5). The presence of wells and freshwater storage facilities can be related to the need for water supply for seafarers: especially in ancient times, the route was chosen not only for its length, but also for its safety in relation to winds and weather conditions and the presence of intermediate stopovers useful for logistical or commercial needs or to prevent any unforeseen situations; one of the important factors was precisely the possibility of stopping during the voyage to refuel with fresh water, the so-called *aquata* (Leone and Turchiano, 2017). Refuelling points were also always indicated in portolans, along with conspicuous points, warnings of dangers (shoals, shallow waters, etc.), advice on advantageous ports, landings, and anchorages in relation to winds, the direction to follow, favourable and unfavourable winds for certain routes.

Archaeological investigations have also recovered elements on the dimension of the sacred, a further characteristic of the frequentation of this islet over time. A survey and a complete mapping of the vast repertoire of inscriptions covering the walls of the two cavities were carried out, testifying to the cult function of the settlement, its Christianisation during the Middle Ages, and at last its use in modern and contemporary times.

In a general perspective, archaeological investigations

have begun to shed light on a vast rock system, whose traces remain clearly legible all over the rocky face of the islet, and of which the two cavities constitute only a part. The numerous traces of other niches and structures support the hypothesis that a small community of people engaged in productive activities and cult management lived here. In this sense, the conspicuous quantities of ceramic materials (amphorae of African and eastern origin, tableware and kitchenware, common pottery, etc.) from the Late Antique period (IV-VI AD) can be interpreted. These findings confirm the frequentation of the islet in Late Antiquity as well when the conversion of the pagan sanctuary into a Christian sanctuary can be dated and allow us to reconstruct the dense network of Mediterranean trade in which *Uria* was still fully integrated. Finally, two burials also document the funerary destination, which seems to have developed from the postclassical age, as suggested by the C14 dating of some bone fragments (V-VI and XI-XII centuries AD) and the Late Antique pottery recovered inside.

Shrine inscriptions

Research activities also involved the survey and analysis of the inscriptions found in the two cavities. The smaller one is a small chamber, on the walls of which there are some graffiti inscriptions, mainly from the modern period. The room is closed externally by a modern wall and is internally equipped with an *arcosolium* and several small niches. The main cavity, on the other hand, is a large, very irregularly shaped room with a floor of slabs made in recent times (fig. 6). The cavity has undergone various modifications over the centuries, and only traces of a rather regular parallelepiped room and some flaps of a massive, moulded lintel remain from the earliest phase in the front, near the present entrance. On the other hand, the shape of the rear part of the hypogeum, which is much more irregular and characterised by two large niches on the short sides, is in all probability later, perhaps late antique and medieval. Lastly, the transformation into a dwelling and warehouse which has severely compromised the legibility of the oldest inscriptions dates to modern and contemporary times.

A dense array of inscriptions stretches along the walls of the cavity, reflecting the long chronological span of frequentation, from Roman times to the 20th century, and testifying to sacred use in ancient and medieval times, but also to later uses after the construction of the 19th-century lighthouse. The oldest inscriptions are located at the front of the main cave. They consist of at least four texts (the poor state of preservation makes it impossible to tell if there were more), datable between the 2nd and 1st centuries BC, in Greek and Latin, in which the name of Venus Sosandra recurs (fig. 7). These exceptional epigraphs constitute only a small part of an extraordinary heritage of around two hundred engravings traced on the walls of the main cave. These are simple and small signs, the most common being crosses, in a repertoire of shapes and sizes



Fig. 6 – Three-dimensional survey of the main cave (G. De Felice).

ranging from very large symbols to tiny, evanescent engravings found almost everywhere on the walls.

Other more elaborate inscriptions give the names of presbyters and other individuals who frequented the shrine and testify to the transformation of the site into a Christian shrine during the centuries of the Middle Ages. Extraordinary, both for its monumentality and its historical importance, is the inscription engraved inside a niche, recalling the passage, in the year 1002, of the Venetian doge Pietro II Orseolo, who stopped by the island with hundred ships on the route that would bring him to the rescue of Bari besieged by the Saracens (Beatillo, 1637). The last two lines, reporting the victorious outcome of the battle, were added by a different hand later (fig. 8).

Other visitors engraved their names, and fortunately also the year, between the 17th and 19th centuries, but it was mainly the lighthouse keepers stationing on the island after the construction of the lighthouse in 1867 who left a mark of their stay in the cave. It is conceivable that it is precisely the presence of this vast heritage of inscriptions that may have encouraged them to draw their names and to create inscriptions that were also very meticulous in both outline and decoration, giving rise to an original practice, which, however, is at the same time the cause of the loss of the oldest inscriptions. The presence of some intact or more probably abraded epigraphic frames is a clear indication, at least in some places, of the continuous reworking of

the walls and the erasure of previous testimonies, if not of a precise intention of *damnatio memoriae*.

The cult of Venus Sosandra

The sea has always been perceived as a complex, unknown, and dangerous reality, which, in imagination and in real experience, has been imbued with multiple meanings and values. Throughout the centuries of antiquity, a sacred dimension linked to navigation has therefore developed, as witnessed also by the number of cults and deities linked to sea travel, from Zeus to Poseidon, Apollo, Hera, Artemis, Venus, Isis, Serapis and the Dioscuri, each associated with very precise aspects of the marine dimension (Lambole, 2000). Venus, for instance, always had a positive effect, with her ability to calm the waters and ensure a peaceful voyage for sailors. As is well known, shrines to Aphrodite-Venus, the celebrated *euploia* deity, protector of seafarers, dotted the Mediterranean coastlines, particularly at strategic points along cabotage routes, landing places, river mouths, headlands (Sandberg 1954). Examples include the sanctuary of Aphrodite Ericina in Sicily, the extramural sanctuary of St. Venera in *Paestum*, the sanctuary of San Giovanni in Venera at the mouth of the Sangro on the Adriatic coast, or Populonia. The association between such sanctuaries and the practice of so-called sacred prostitution is



Fig. 7 – Two of the dedicatory inscriptions to Venus Sosandra (photo G. Volpe).

also well known; once again, Populonia yields a possible trace of a *hierodula* (i.e., a sacred slave), *Filica*, whose speaking name ('loving', 'delightful', 'amiable well disposed') is graffitied on a black-painted cup (De Tommaso and Patera, 2002).

In the case of Vieste, the devotion to Venus Sosandra (the saviour of men), attested by the inscriptions on the main cavity of the islet of St. Euphemia, is to be seen in relation to other attestations: Catullus seems to allude to the presence of the cult of the goddess when, in Carme 36, he mentions *Uria* (... *Nunc o caeruleo creata ponto, quae sanctum Idalium Uriosque apertos quaeque Ancona Cnidumque harundinosam*...) among the localities connected to the veneration of the goddess. In this regard, mention should also be made of the discovery of a pre-Roman cippus with a dedication in Messapian language to Zeus, Demeter and Aphrodite and a draped statuette of the goddess, which occurred in front of the islet of in 1930, which has unfortunately been lost.

The sea of the sacred

Other coastal shrines are attested in the Otranto Channel and, more generally, in the Adriatic. The coastal landscape of the lower Adriatic, in particular, is, in fact, marked by the presence of small bays, promontories, cliffs and islets, crucial places of navigation,

also connoted as places of worship. These are sometimes true 'coastal maritime sanctuaries', which not only represented mere geographical references or emergency shelters, but also symbolised the interaction between needs related to sea travel, religious beliefs, superstition, devotion and, in some cases, economic practices (Lambole, 2000; Fenet, 2005).

In the maritime space of the lower Adriatic, the religious and devotional dimension connected to navigation and, in some cases, to the economic sphere, have taken on peculiar forms that define an entirely original 'sacred geography' and landscape of the sacred. Emblematic cases are, along the coast of Salento, the promontory of Roca with the sanctuary of Grotta Posesia, and Punta Matarico with the cave of San Cristoforo, gravitating on the inlet of Torre dell'Orso; or again, Punta Ristola, with Grotta Porcinara, in connection with the Leuca landing place (Pagliara, 1971-73; 1987; 1991; Auriemma, 2001; 2004).

The bay of *Grammata*, with its open-air sanctuary along the Karaburun peninsula on the Albanian side, also falls within this category, as it is an isolated place located at a 'strategic' passage for navigation, the Strait of Otranto, also characterised in Antiquity by a sinister reputation for danger (Volpe et al., 2013; Leone and Turchiano, 2017). Many of these 'sanctuaries' belong to the so-called *euploia* sanctuaries, identifiable with places frequented by sailors who left traces of their devotion, beliefs and hopes in the face of the



Fig. 8 – The inscription of Doge Pietro II Orseolo (1002 AD). Other inscriptions graffitied on the sides can be seen (photo G. Volpe).

dangers of the sea through inscriptions, engraved directly on the rocks, expressing either vows before departure, or thanks after the crossing, or through other manifestations.

A typical characteristic of these sanctuaries, and of the context of St. Euphemia, in which traces of worship seem to be confined to the underground environments, is the absence of more structured constructions or other cultic devices. The architectural and monumental aspect, in fact, was not a relevant element for these sites, which, particularly in the Adriatic, are characterised by their integration into the natural landscape. Priority factors underlying the location and fame of such coastal shrines were their geographical position, their maritime visibility, their role as topographical markers and their function as landing places for navigation.

The archaeological research activities on the islet of St. Euphemia have revealed a context of great importance not only for reconstructing the articulation and transformations of the rock sanctuary that took place over the centuries, but also for acquiring valuable information on the general organisation of the structures and devices connected to navigation. When it appeared on the horizon to sailors, the islet must not only have represented a temporary landing place, an anchorage point where one could pause while waiting for weather conditions to improve and replenish the water supply, but was also a stopover on the cabotage route and the longer-distance routes that wound their way along this stretch of the Adriatic coast, both as a point of nautical orientation and at the same time as a place of devotion, the recipient of the prayers of sailors, to whom it must evidently have been well known.

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Bibliography

- AA.VV., 1998, *Uria Garganica e la grotta di Venere sull'isola del Faro di Vieste (3rd century BC)*, 1998, Atti del Convegno Internazionale di Studi (Vieste, 17-18 October 1987), Foggia.
- Auriemma R., 2001, *Gli approdi minori del Salento Adriatico: il contributo della ricerca archeologica subacquea*, in Zaccaria C. (ed), *Strutture portuali e rotte marittime nell'Adriatico di età romana*, Antichità altoadriatiche XLVI: pp. 415-429.

- Auriemma R., 2004, *Salentum a salo. Porti, approdi, merci e scambi lungo la costa adriatica del Salento*, Congedo, Galatina, 360 pages.
- Beatillo A., 1637, *Historia di Bari Principal Città della Puglia nel Regno di Napoli*, Napoli.
- D'Ercole C., 2015, *Les commerces dans l'Italie adriatique (VI^e - IV^e s. a.C.): notes pour un bilan*, in Marion Y., Tassaux F. (eds), *AdriAtlas et l'histoire de l'espace adriatique du VI^e s.a.C. au VIII^e s.p.C.*, Actes du colloque international de Rome (4-6 November 2013), Bordeaux: pp. 403-418.
- De Felice G., Leone D., Turchiano M., Volpe G., 2020a, *Un santuario marittimo lungo le rotte adriatiche. La grotta di Venere Sosandra a Vieste*, *L'archeologo subacqueo* XXVI: pp. 16-24.
- De Felice G., Leone D., Turchiano M., Volpe G., 2020b, *Il mare e il sacro. Landing places of men and gods. La Grotta di Venere Sosandra a Vieste*, in Martinelli N., Carlone G. (eds), *Vieste. Il faro di Sant'Eufemia*, Mario Adda Editore, Bari: pp. 40-50.
- De Tommaso G., Patera A. (eds.), 2002, *Il mare in una stanza. Un pavimento musivo dall'acropoli di Populonia*, Museo archeologico del territorio di Populonia, Piombino.
- Fenet A., 2005, *Sanctuaries marins du canal d'Otrante*, in Deniaux E. (éd.), *Le canal d'Otrante et la Méditerranée antique et médiévale*, Colloque organisé à l'Université de Paris X-Nanterre (Nanterre, 20-21 November 2000), Bari: pp. 39-49.
- Lambole J.-L., 2000, *Les cultes de l'Adriatique méridionale à l'époque républicaine*, in Delplace C., Tassaux F. (éd.), *Les cultes polytheists dans l'Adriatique romaine*, Bordeaux: pp. 133-141.
- Leone D., Turchiano M., 2017, *Liburna 1. Underwater archaeology in Albania. Ports, landings and maritime routes*, Bari.
- Lippolis E., 1984, *Testimonianze di età romana nel territorio garganico*, in *La ricerca archeologica nel territorio garganico*: pp. 171-196 (= in *Uria garganica*, 183-201).
- Mazzei M., Volpe G., 1998, *La documentazione archeologica di Vieste: la città e il territorio*, in *Uria garganica*: pp. 119-158 (= *Studi Bitontini*, 63, 1997, 5-28).
- Pagliara C., 1971-73, *La Grotta Porcinara al Capo di S. Maria di Leuca. I. Le iscrizioni*, *AnnLecce* 6: pp. 5-67.
- Pagliara C., 1987, *La Grotta Poesia di Roca (Melendugno-Lecce). Preliminary notes*, *AnnPisa* 17.2, s. 3: pp. 267-328.
- Pagliara C., 1991, *Santuari costieri*, in *I Messapi*, Atti del Trentesimo Convegno di Studi sulla Magna Grecia (Taranto-Lecce, 4-9 October 1990), Taranto: pp. 503-526.
- Petrone M., 1984, *Note di storia antica garganica e viestana*, Vieste.
- Ruggieri V., 1989, *Una nota sulla topografia medievale di Vieste*, *Vetera Christianorum* 26, 361-369.
- Russi A., 1971, *Uria Garganica and a new funerary inscription*, in *Terza miscellanea greca e romana*, Rome: pp. 211-223.
- Russi A., 1992, *Sul complesso epigrafico rupestre della "Grotta di Venere Sosandra" nell'isolotto del faro di Vieste (Foggia)*, in Uggeri G. (ed.), *L'età annibalica e la Puglia*, Atti del Convegno (Mesagne, 24-26 March 1988), Fasano: pp. 103-110.
- Russi A., 1998a, *Navi, marinai e dèi in epigrafi greche e latine scoperte in due grotte del Gargano nord-orientale*, in Laudizi G., Marangio C. (a cura di), *Porti, approdi e linee di rotta nel Mediterraneo antico*, Atti del seminario di studi, (Lecce, 29-30 novembre 1996), Lecce: pp. 104-135.
- Russi A., 1998b, *Gli dei e il mare: le grotte del Gargano*, in R. Cassano, R. Lorusso Romito, M. Milella (eds.), *Andar per mare. Puglia e Mediterraneo tra mito e storia*, Bari: pp. 97-102.
- Sandberg N., 1954, *Euploia. Études épigraphiques*, *Acta Universitatis Gotoburgensis, Göteborgs Högskolas Arsskrift* LV, 8, Göteborg.
- Volpe G., Leone D., Turchiano M., 2013, *Il progetto Liburna: Ricerche archeologiche subacquee in Albania (campagne 2007-2010)*, *AS Atene* LXXXIX, s. III, 11 (2011): pp. 251-286.