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MALTA  
ARCHAEOLOGICAL  
REVIEW

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## THE ARCHAEOLOGICAL SOCIETY

The Archaeological Society is formed of members with a genuine interest in archaeology in general and that of the Maltese Islands in particular. Anyone with such an interest, whether a professional archaeologist or not, is welcome to join.

The Society is concerned with all matters pertaining to archaeology. One of its principal objectives is to promote and enhance the study of archaeology at all levels. It is not a pressure group. It believes that it is only when there is a sufficient interest in, and understanding of, our archaeological heritage among the public at large, that this priceless heritage can be protected and preserved.

The Society organises meetings and seminars, some of which are open to the public, as well as site visits both in the Maltese Islands and abroad. It publishes the *Malta Archaeological Review*. It endeavours to maintain close relations with Heritage Malta, with the Superintendence of Cultural Heritage and also the Department of Classics and Archaeology of the University of Malta and to support their activities. It also maintains a network of relations with archaeological societies and organisations abroad.

The *Malta Archaeological Review* welcomes the submission of papers on the subjects mentioned above. Contributors are requested to keep papers to a maximum of 2000 words but may also submit two or three illustrations. The editors reserve the right to limit the reproduction of illustrations, which are not an integral part of the text, according to availability of space.

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## THE ARCHAEOLOGICAL SOCIETY


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# MALTA ARCHAEOLOGICAL REVIEW





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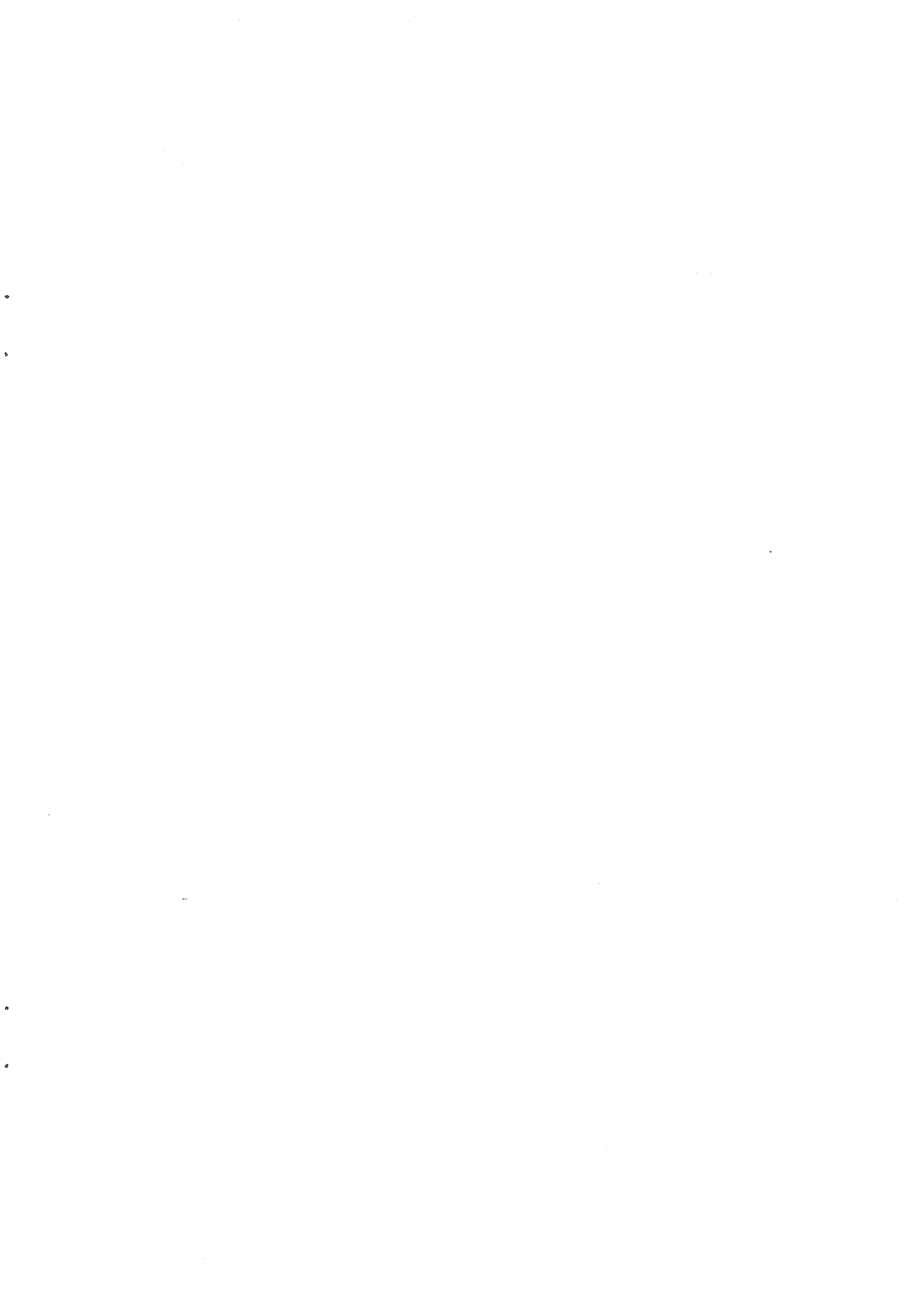
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# From the President

Antony de Bono

The grim date of Friday 13<sup>th</sup> April, Good Friday, will, to borrow a phrase, live long in infamy in the annals of Maltese archaeology. On that night vandals threw down a large number of stones of the famous Neolithic temple of Mnajdra. The damage has been painstakingly repaired. Security measures are now in place to make a repetition of this type of mindless cultural terrorism at least more difficult.

Questions abound, some answered, others fudged. Who was responsible? How did it happen that these World Heritage sites were had been left totally unguarded? There was much outcry, much tearing of hair, yet apparently no-one bore responsibility for this sacrilege, no-one resigned.

That is not the point. Perhaps out of this infamous episode some good might be distilled.

The public at large have woken up to the fact that they have a stake in these unique monuments and share a responsibility for their preservation. This belated wakening of conscience has in part stimulated the politicians to agree on a radical review of legislation concerning the cultural heritage of the country, and on a more immediate level put in place a degree of protection of major archaeological sites.

However, the problem of the protection of archaeological remains that have already been excavated from the threat of vandals, tourists, and the weather, remains of pressing concern. Given the will, and the knowledge, all means of preservation require funds which are often outside the capabilities of a small economy. Dramatic vandalism such as the attack on Mnajdra raises instant alarm and outrage, which unfortunately rapidly dissipates; the more insidious damage done by uncontrolled mass visitors and the relentless erosion by sun, wind and rain are certainly less obvious though equally damaging. Thus remains that have survived many millennia can be destroyed in a very short time indeed. It would be relatively simple to re-bury any excavation. However, the Neolithic temples in particular, having been exposed for many decades,

are an important element in the tourist industry which underpins the Maltese economy.

The dilemma is certainly not confined to Malta. Viable compromises have to be reached.

In Stonehenge in the UK the exclusion of visitors from the monument itself has greatly improved preservation albeit at the expense of tourist satisfaction; but there the megaliths are very much harder than the relatively soft limestone of our temple remains. An excellent example of compromise has been the changes that have been put in place at the remarkable burial complex, the Hypogeum at Hal-Saflieni. Here water erosion has been largely dealt with, and the damage due to mass visitors greatly reduced by controlling both their number and passage. In a previous number we argued that landscape considerations could not be a block to covering the important megalithic temple sites to protect them from the weather; in principle it has been agreed to cover the monuments and at the present time ways of doing this are being explored.

It is not only vandals, unbridled tourism, and weather which threaten the survival of our priceless archaeological treasures; they are often destroyed unseen, by unsupervised development. In theory this should never happen. In practice it does. An example of this potential destruction was the sinking of 40ft piles for the foundations of a sports building at Marsa, in what was probably the ancient haven of Qormos. The 40ft cores that were extracted might well have contained invaluable archaeological information from an area the planning authorities regard as being archaeologically sensitive. Yet apparently the archaeological authorities were unaware of the development and certainly no archaeologist was present when the cores of alluvial mud were extracted.

Awareness and sensitivity are essential elements for the public at large to contribute towards the preservation of a unique heritage that is of its very nature irreplaceable. The long term key to success must be to engage the interest of school children. A

few years ago the Society held a symposium on Archaeology in Education which was enthusiastically received but widely misinterpreted. It sought to introduce archaeological topics as an educational stimulus to learning. However this seems too subtle an approach. The Society is now exploring ways in which it can contribute to

interesting children in archaeology, as such, not only as a means of ensuring an understanding and therefore promoting a culture of care for their heritage, but also in much broader educational terms.

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## SOCIETY ACTIVITIES IN 2001

Among the Societies activities in 2001 were a visit to the **Roman domus** in Rabat, under the guidance of **Professor Anthony Bonanno**, who pointed out a number of features that were of the greatest interest even to those who had visited the place a number of times before. The remains of this Roman town house of high status stands outside the present old city of Mdina, but in Roman times was very much in the centre of the town which extended to the church of St. Paul. Its original owner is unknown but various artifacts give an intriguing glimpse of shifting loyalties in Imperial favour.

**Tas-Silġ** was the next site to be visited in early June. The site is of remarkable importance with evidence of being a centre for religious ritual spanning millennia, yet it has a lingering aura of neglect to which the road that runs through the middle contributes a great deal. The visit was to the part of the site north of this sacrilegious intrusion into one of the important Mediterranean sites. The *Missione Archeologica Italiana* has been excavating here for many years, a task which owes much to the erudition and enthusiasm of the late Professoressa Antonia Chiasca. Recent re-assessment of the evidence of the remains shows a remarkable continuity from Neolithic times with the physical and presumably spiritual incorporation of the remains of the apse of a Neolithic temple into the later structures which extend into the Byzantine period. Our guides were **Dr Alessandro Quercia** and **Dr Davide Locatelli**.

Later in June **Dr Nicholas Vella** gave a talk on **Politics and Archaeology in Malta 1880-1964**. This interesting talk illustrated the effect of attempts by politicians to distort interpretation of archeological evidence in the service of their own political propaganda. Examples included the efforts of the Fascist regime's Ugolini with his attempts to provide evidence for Malta's *Italianità* and therefore

prove that it was part of *Italia Irredenta*. This was countered by Strickland's enthusiastic backing of the Phoenician evidence.

It was followed in July by a talk by **Simon Mason** on **Archaeology in Kent**. Simon has been visiting Malta for a number of years to help supervise excavation of the part of the Tas-Silg site situated south of the infamous road by the University Department of Archeology. He is now the Kent County Archeologist and thus in a key position to talk about some of the extremely interesting archaeological developments in that county a considerable number of which were created by the work on the high speed Tunnel Link.

The next talk was by **Dr Nicholas Vella** entitled **At sea with the ancients along foreign shores**. This included examples of a re-interpretation of coastal sites in antiquity which were regarded as sacred, the choice of whose location could only be explained by looking at them from the sea rather than from ashore; thus headland sites, particularly for the Phoenicians, acquired their status by their function as beacons or waypoints of navigational significance. They did not have temples erected on them as, contrary to the Greek custom, the rituals took place aboard the vessels themselves. However, from a navigator's viewpoint, prominent and identifiable features on shore were very much a common heritage of the sea.

Later in October **Nathaniel Cutajar** took us on a visit to the **excavations in Mdina** the opportunity for which had been given by extensive works to put the Mdina electricity and water services underground. The escarpment on which Mdina is situated has almost certainly been occupied since Neolithic times. Excavations on any scale are obviously very difficult as the city is densely built

over but the excavations gave a fascinating glimpse of some of the earlier structures and artifacts, from possibly Hellenistic period wall foundations to medieval structures. One of the most interesting ideas derived from these is that the remains may point to a fortified or at least enclosed citadel area towards the northeast part of the escarpment which might have contained the important buildings such as church and administrative buildings. The visit was of particular interest as it served to enhance a new interest in periods other than the Neolithic, which has hitherto, quite understandably, tended to dominate Maltese archeology.

**Ms Martina Caruana**, who explained the scope and function of this important new facility, guided a visit to the new **Centre for Restoration** at Bighi, in early November. Among its objectives will be the training of conservators and restorers. A tour of the centre gave an interesting insight into the very high level of achievement and expertise of the staff.

The role of museums and their mission was the subject of a talk by **Ms Patricia Camilleri** who gave a talk on **Museum Meanings**. She discussed the different aspects of museum development from mere collections towards much wider objectives which included not only the being the repository of artifacts, their conservation, preservation and display, but also a role which plays a vital part in engaging the interest of the public at large while at the same time providing an essential source for scholars.

**Professor Anthony Frendo** gave an interesting talk on **Archaeology and the Bible** in which he used his expertise both in Hebrew studies and in archaeology to great advantage.

The last activity of the year was a site visit to the remains of the **Roman Baths** at Ghajn Tuffieha conducted by **Mr Joseph Magro Conti**. Once again one is struck by the air of neglect that seems to pervade this site, which has so much of interest.

## The Malta Archaeological Society

The Malta Archaeological Society holds activities throughout the year including talks on archaeology issues as well as site visits led by well known local and overseas scholars.

The Society welcomes new members. If you wish to join, please contact the Hon. Secretary. Details are available on the inside cover of this Review.

# Erich Becker and *Malta Sotterranea* – exposing the achievements of a dark horse of Christian archaeology

Katrin Fenech

Becker's 1913 publication *Malta Sotterranea, Studien zur altchristlichen und jüdischen Sepulkralkunst* - studies of Malta's early Christian and Jewish sepulchral art - is a work often quoted and sometimes even copied by authors writing on Malta's catacombs and Late Antiquity. Its value was recognised by many scholars, but to date very few have managed to fully grasp and understand it. Certainly, one does not need to understand much German to realise that his study was exceptionally thorough and methodical. But one needs to master German and German grammar perfectly in order to follow his line of reasoning – which is why many remarkable conclusions and discoveries in *Malta Sotterranea* were at best ignored, or at worst wrongly quoted or totally misunderstood. Ironically, it is thanks to the latter that his book never slipped into oblivion.

Like every scholar, Erich Becker was a product of his time. His background and context, however, set him apart. Born in Düsseldorf, Germany, on December 5, 1883, he was the third and last child of Ferdinand and Martha Becker. His sisters Antonie and Diletta were born in 1873 and 1875, and he was probably a long-awaited son. His father was already 43 years old when Erich was born, but he exercised the most crucial influence on Erich Becker's career.

Ferdinand Becker had studied theology at the famous Humboldt University in Berlin. His passion for early Christian epitaphs and Christian art and iconography led to the publication of four books between 1876 and 1881. His main source of income, however, came from his profession as a Lutheran pastor for the army garrison. In 1871, his calling led him from Berlin to Düsseldorf, where he and his young wife Martha also enjoyed a good social life. They regularly attended and held social gatherings where they met other clerical people, a school headmaster and the director of a rescue service. At these evening gatherings they read books, followed by a discussion, a simple dinner and more discussions that often lasted until after midnight (Höhndorf, 1873). Six years after Erich

Becker's birth, the family moved to Magdeburg and later back to Berlin, Martha's hometown. Here, Erich attended the Prinz-Heinrich Gymnasium in Berlin-Schöneberg, a reputable lyceum of the upper middle-class, where he passed his final examinations with flying colours in 1902. This was followed by two years of compulsory military service in the Imperial Prussian Army and, in 1904, Becker started to follow his father's footsteps, by enrolling at the Lutheran Faculty of Theology. His choice of universities was definitely motivated by ambition: one semester at Erlangen, two at Tübingen and six at the Humboldt University in Berlin. No doubt, he chose the best faculties available at the time, and these faculties still enjoy an excellent reputation today.

Like his father, he specialised in Christian archaeology, an independent discipline within the Faculty of Theology that aims to thoroughly research the life of early Christians and Christian art since its graspable beginning around 200 AD till 600 AD by ascertaining “all that is possible relative to the manners and customs of the early Christians from the monuments of Christian antiquity” (Hasset, 1908).

This methodological investigation of the material remains from early Christianity was nicknamed ‘Monumental Theology’ by Ferdinand Piper. The most important components of Christian archaeology are burial complexes (catacombs and others), sculpture (sarcophagi), architecture and also minor art and iconography. Piper had been the founder and director of the first German Institute of Christian Archaeology at the Humboldt University of Berlin. Piper, who had also been a lecturer of Erich Becker's father, started a large collection of early Christian art and monuments and after nearly fifty years of his directorship (which lasted until 1890), the documentary value of monuments for historical theology was finally established. Despite this, Christian archaeology only occupied a fringe existence. Piper's successor, Nikolaus Müller, continued to promote the value of monuments and other material remains as an





Erich Becker

important source for the understanding of church history (Strohmaier-Wiederanders, 1999). Since the aim of Christian archaeology is to reconstruct the life of the early Christians from literary and monumental sources, the course itself comprised, among other, a thorough study of these literary sources and art literature, iconography and methodology. The literary material was studied in the original language: Latin, Greek and Hebrew. However, an excellent Hebraicum, Latinum and Graecum were in any case admission conditions for most faculties, including the Faculty of Theology, and part and parcel of the school syllabus and were tested in the final examinations at most lyceums. History of art was also an important component and it was dominated by iconography. Thus, a strong emphasis was put on the training of a sharp and comprehensive observation, the establishing of parallels and comparisons, and the analysis and stylistic criticism of the art object as a whole.

The choice of Christian archaeology was no doubt influenced by his father, who had passed away before Erich's graduation. He makes no secret of the great loss he experiences: he dedicates his PhD dissertation to his father and adds a mission statement to which he adheres for the rest of his life: "These pages are dedicated to the man, whose work I shall continue and this will remain at all times my dear legacy". (Becker, 1909). And true to his word, in all works that he subsequently publishes, there is a reference in one way or other to his father.

Becker's specialisation in Christian Archaeology had far-reaching consequences for his career. The Institute of Christian Archaeology at Humboldt University was under Nikolaus Müller, one of the most distinguished professors at the time when Becker studied Christian archaeology in Berlin. Müller was also his tutor for his PhD dissertation. *Das Quellwunder des Mose in altchristlicher Kunst* discussed the representation of Moses' miracle at the spring in early Christian art and was partly a catalogue and partly a scientific discussion. He

emphasises the sepulchral idea of the refrigerium [Refrigeriumgedanke] and traces the miracle at the spring back to this. In his preface, he makes no secret about his innovative conclusions and their digression from the opinions of established authorities, without forgetting for a moment how much he is indebted to their contributions (Becker, 1909).

Through Müller he was introduced into the inner circle of other great Christian archaeologists of the time. While there was often tension between Lutherans and Catholics with regard to research, aims and interpretation of the evidence, this never seems to have stood in Becker's way – on the contrary, he used it to his advantage when it came to publishing or funding. In research, Becker was an open-minded person, and for him it was the method used and the interpretation of the evidence that were important, and not the religion of the author. Müller opened the doors to the Deutsches Archäologisches Institut – the German Institute of Archaeology in Rome – for Becker, who gained the support of Prof. Dr. Christian Hülsen. He was also introduced to Monsignor Josef Wilpert, one of the greatest Christian archaeologists who dedicated his research to method and principles of interpretations, and to Monsignor Anton de Waal, founder and editor of *Römische Quartalschrift (RQS)*, a periodical that specialised in Christian Archaeology and Church History. This encounter proved to be crucial to Becker's career, as between 1909 and 1913 he published all his papers in the RQS. In Rome, he also met leading Italian Christian archaeologist, Prof. O. Marucchi. The research for his PhD was not confined to Rome and he spent some time also in Provence, where he studied the sarcophagi in the museums of Aix, Arles and Marseille.

He boasts of his linguistic abilities, and his publications are littered with quotations in Italian, French and English (apart from Latin, Greek and Hebrew!). But although he expected his readership to be at least equally educated – there is never any translation of the quotations – he uses a simple German terminology wherever possible, helping the reader to follow better his long sentence constructions.

Becker received excellent marks for his PhD thesis, and it was later published by Heitz & Mündel in Strassburg. Already in the preface of this publication



Fig. 1: Inscription found “near Sta. Venera catacombs”. Becker proves it to be a fake. (Becker, 1913: Pl. XXVII.3.)

he announced the forthcoming publication of two further articles on the subject, which subsequently appeared that same year in *Zeitschrift für Kirchengeschichte* and in *Römische Quartalschrift*. The latter periodical also carried another five papers, the last of which was published in 1913. In 1910, there are no publications, presumably because he then was ordained as a Lutheran priest, but this did not put an end to his archaeological research. In the same year, he applied for, and received, a research and travel grant from the Supreme Lutheran Church Council of Prussia in Berlin to investigate the Maltese catacombs. This subject was Becker’s choice and he was well prepared for the trip.

The Maltese catacombs were not *terra incognita* for German researchers. They had already been visited by Nikolaus Müller, Victor Schultze, Georg Stuhlfauth and Albert Mayr, who all either published short papers about them or included them in the larger context of the Sicilian catacombs. Additionally, the works by A.A. Caruana, Abela and Ciantar were available in the Berlin libraries. Evaluating the works of these authors, Becker felt that the catacombs deserved a more thorough study and needed to be put into context and comparison with the catacombs of other countries. After having visited many Sicilian sites and museums, he arrived in Malta from Syracuse on Christmas Day, 1910.

His arrival in Malta was greeted by local quarantine problems, and he emphasised in his preface later that things would have been different, had he not met Prof. Themistocles Zammit. His admiration for Zammit knew no bounds. No doubt, Becker’s contagious enthusiasm for archaeology and Malta’s sepulchral world convinced Zammit not only to give Becker free access to catacombs, finds and information, but also to accompany him to the

various catacombs whenever possible. Among other, they discovered together a closed floor tomb in St. Paul/ St. Agatha 14, which Zammit then had opened. To the surprise of both Becker and Zammit, this floor tomb (with one head-rest) turned out to be an ossuary for five burials (Becker, 1913: 27; Zammit, notebook 3: 83).

Becker intended his studies to be regarded as a supplement to the research done by Caruana and Mayr and he published in *Malta Sotterranea* descriptions and plans of catacombs that were hitherto unpublished. However, his descriptions of the catacombs are more than that. He draws on the findings of previous authors and adds his own interpretations.

Today, some of these plans have been lost, as have some of the artefacts that he mentioned or discovered. Furthermore, some of the catacombs he describes have also been destroyed, but at least the memory of their existence is preserved.

#### *Becker’s findings*

Divided into seven chapters, *Malta Sotterranea* is to this day one of the most thorough in-depth studies of the Maltese catacombs. In it, Becker applied all his knowledge and abilities, ranging from observation to general archaeological method, analysis and interpretation, all of which he

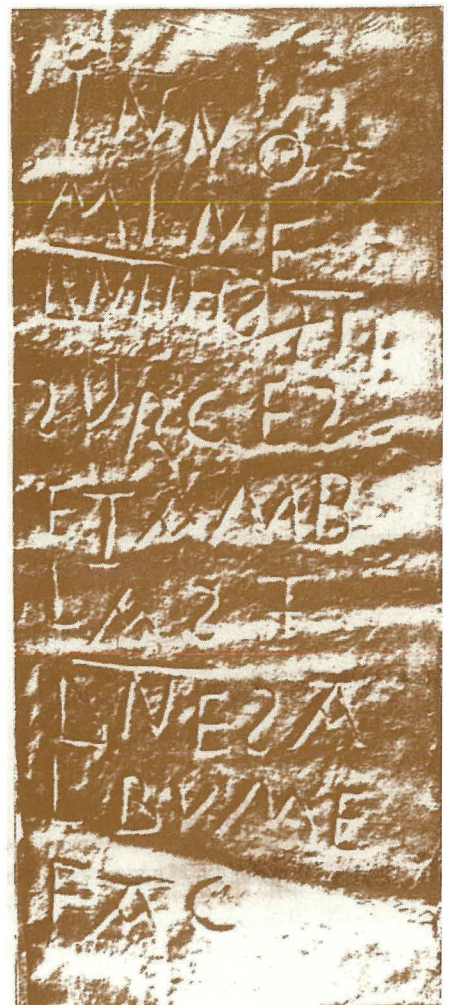


Fig. 2: Inscription at St. Thomas Bay catacombs. According to Becker it is not an epitaph, but possibly the graffiti of a pilgrim. Photograph of the plaster cast (Becker, 1913: Pl. XXVII.1.)

put in a broad context. He made many great discoveries, but so far only a few of these have reached the English-speaking reader or scholar. Perhaps his most important discovery is that of Jewish catacombs. As such, this is not surprising since they are also found in Sicily, Sardinia and Tunis, but he was astonished that this escaped Caruana, who had even published a plan of two of these catacombs in

*Ancient pagan tombs* (1898: pl. XXVI – St. Paul/Agatha 14 and 17A). He is sure, however, that Mayr would have discovered them had he spent more time at St. Agatha (Becker, 1913: 70ff). Becker also gave the name to the anthropoid burial cells: window tomb. Comparatively rare in the Rabat area, the window tomb is the most frequently found tomb type in the countryside. Becker provides vivid descriptions of their varieties and decorative richness.

In his chapter on inscriptions, he applies his knowledge of classical languages, the Bible and epigraphy. His results have to date been ignored, although they are most interesting and fascinating. He makes a thorough and critical investigation of the presumed Christian inscriptions mentioned in Caruana's Report (1882) and adds some recent discoveries, including his own discovery, the Leonia inscription at St. Agatha. Again, he slams Caruana for his uncritical approach, but is highly amused that it remained to his day unnoticed that the inscription, presumed to have been found near the catacomb of Sta. Venera, is in fact a fake (see Figure 1). Originally, this inscription had been found in Tunisia and is registered in the CIL VIII.1.1100 as a "*fragment d'une pierre sépulcrale, trouvée entre la Goulette et Carthage*" [fragment of a tomb stone, found between La Goulette and Carthage]. He has no doubt that the Maltese inscription is a fake – the fragmentation is identical, and the text of the Tunisian inscription had been published in Leyden in 1858 – 17 years before the inscription was 'discovered' in Malta. Becker's verdict is quite final, especially since the Valletta Museum also had another inscription that Stuhlfauth had already proved to be a fake. This inscription, according to Caruana (1882:153), was a lead tablet epitaph, found "within the rubbish of the exterior wall of the ditch of Notabile ... in early christian style,

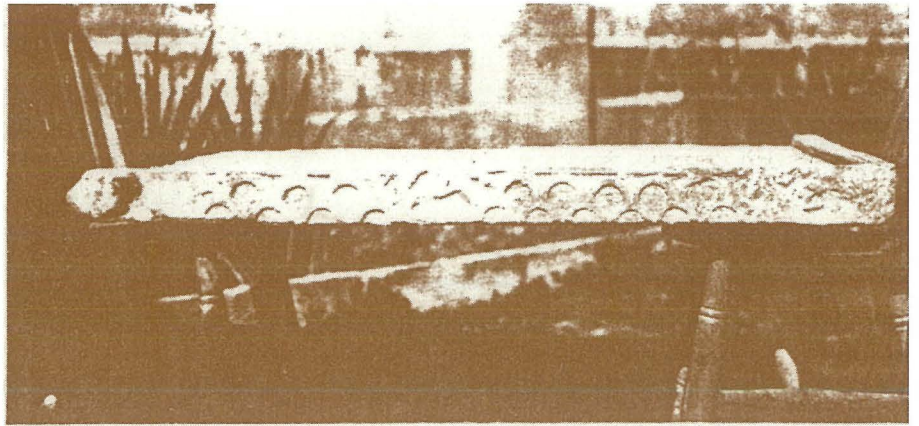


Fig. 3: Altar slab with pseudo-transennae relief and Christ monogram, used as a covering slab for a tomb in St. Paul/St. Agatha No. 4. Photographed by Becker in 1911 (Becker, 1913: Pl. XIII.3). The slab has since been lost.

having a dove at the bottom bearing an olive branch." Stuhlfauth's reasoning and evidence that this inscription is a forgery could not be verified as Stuhlfauth's essay seems not to be available in any library in Malta.

The inscription found at the St. Thomas Bay hypogeum (Figure 2) is today often linked to the beginning of a North-African prayer. Yet, Becker's intrinsic knowledge of the Bible in Latin traces the wording back to two Biblical quotations, both sayings of Peter. The wording of the first six lines is strikingly similar to "*In nomine Jesu Christi Nazareni, surge et ambula*" (in the name of Jesus Christ the Nazarene, rise and walk), which is found in the Acts, 3:6. The second quotation is *Domine, salvum me fac*, which is found countless times in the Bible, especially in the Psalms. It is also found in Matthew 14:30, when, Peter sinking into the water, calls out "Lord, save me!". In Becker's eyes, despite the funerary context, it is not an epitaph at all, but the inscription – or rather graffiti – of a pilgrim, dating probably to the seventh century.

His overall conclusion of the value of the thirteen so-called Early Christian inscriptions is rather disillusioning: two are fakes, many are ambiguous, some are clearly pagan, one is not an epitaph and thus cannot be used to date the catacomb and only one inscription is definitely Christian. All in all, he believed this critical investigation was necessary, since it would ensure that, in future, unreliable material would not be used for dating. The appeal fell on deaf ears, presumably because of the language.

Becker (1913: 15, 128-9) also discovered an Early Christian marble altar slab (Figure 3), probably originating from the crypt of St. Paul's Catacombs, which had been cut and re-used as a covering slab for an arcosolium in No. 4, St. Paul's Catacombs. Today, this slab is no longer extant and Becker's photo is the only visual testimony we have of its existence. Luckily, he also provides a detailed description of the slab and its measurements. It is for him inconceivable that a Christian would have done such a barbaric act to an altar slab, thus implying that the last tenant of this tomb was not a Christian, but possibly a Muslim.

Becker's familiarity with excavations in North Africa and the Near East and his fluency in French led to the discovery of hitherto unknown parallels to a peculiarity of many Maltese catacombs: the apse with basin. These are also found, among other places, in Tipasa, Alexandria and Petra, and he interprets them as rooms for the funeral feast. He makes extensive and detailed comparisons between Malta and these places and sees the origin of the funeral feast rooms as possibly having been a pagan rite adapted by the Early Christians. Interestingly, they are absent from the Jewish catacombs.

Although Becker quotes and tentatively agrees with Stephan Gsell that the small construction in the Basilica of Sainte-Salsa was an agape table (1913:115), this is in a purely Tunisian context. For Malta, Becker never mentions or considers the agape as a possible function, as he is convinced that they served for funeral feasts, where the mourners placed themselves on rugs or cushions around these basins in a semi-circle. "The well-known depictions of meals around sigma-shaped tables only fully come to life in Malta", he states (*ibid.*). Becker notes that the presence of the apse chambers with basins is no evidence for a post-Constantinian origin of Malta's Christian catacombs. The origin of the same construction in Alexandria's Kom el-Shoûkafa catacomb is clearly pagan, although the space was later used by Christians. The fourth century polemics against its abuses are in no way proof that this custom had only started then. Furthermore, Matthaei (1899: 42f) had concluded that "customs, adapted from antiquity without ado, were not mentioned at all or only on the side, as long as they were deemed harmless".

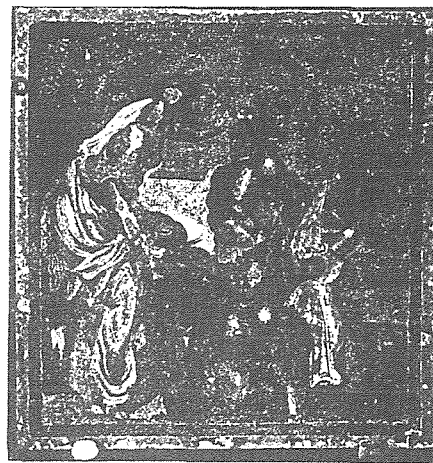


Fig. 4: Subject of many different interpretations – the emblema at the Museum for Roman Antiquities in Rabat. In Becker's opinion it is an Alexandrine-syncretistic representation of Samson and Delilah. (Becker, 1913: Pl. XXV.2.)

The chronology and dating of the catacombs was a challenging task and indeed a big headache for Becker, but he gets clearly enraged when scholars use the wrong methodology: "*The traditional view puts the beginnings of Malta's Christian catacombs in post-Constantinian times – but how can this be proved? For truth's sake it must be stated here that the answer cannot be based on the monumental evidence. There is no fool-proof evidence for the Constantinian period, neither is there any against it that Christian catacombs already existed here in pre-Constantinian times. It is absolutely necessary to categorically fight against the completely unmethodological procedure to conclude the age of catacombs from various finds, earthenware lamps, even from the isolated inscriptions or symbols. It is amazing how often results are obtained precisely in this way, which are supported by wholly unmethodological means. As if one could simply date the catacombs with some lamps! Lamps, monograms and inscriptions can only tell us in what period the cemetery in question was last used, by their nature they characterise always the last era of use*" (Becker: forthcoming).

#### *Becker and other authors*

The above is a good example of Becker's outspokenness, but sometimes he goes even further. In the first chapter of his book he gives a detailed resumé of the history of catacomb research in Malta. In it, he mentions a long list of nineteenth to early twentieth century German researchers who studied the Maltese catacombs either on their own or in conjunction with the Sicilian ones. Among these authors are many well known personalities and authorities in Christian Archaeology: Nikolaus Müller (his former tutor), Victor Schultze and Josef Führer, Georg Stuhlfauth and also Albert Mayr. He draws upon their studies and uses them as stepping

stones, but does not hesitate to add his own observations. Thus, he more often differs from their conclusions than agrees with them and, as a result, argues extensively to justify his differing opinion. Albert Mayr's studies are a major source of inspiration. He has great respect for Albert Mayr, whose results often lie at the basis of Becker's own research to the point that it sometimes seems as if he fervently tries to find an answer, where Mayr could not find one. And in fact, he often does. However, Becker's conclusions sometimes appear to be equally dubious. One good example is the interpretation of the *emblema* at the Museum for Roman Antiquities in Rabat (Figure 4). Mayr admits that he did not understand the scene, which sparked Becker's ambition to find the answer. Since Mayr was not aware of Jewish catacombs in Malta (Becker admits that it was by sheer luck that he discovered them) he could not put the *emblema* in a Jewish context, Becker argues. In this light, Becker interprets the *emblema* as a representation of Samson and Delilah. He concludes and emphasises: "the discussed mosaic of Notabile [Rabat] is only understandable as a product of Alexandrine syncretism – the Jewish narrative of Samson is here merged with components of Greek mythology, especially with the myth of Herakles and probably also with the myth of Nisos" (Becker, forthcoming). An intriguing conclusion, which certainly deserves a closer investigation.

Nothing enrages him more than a shoddy and ignorant approach to archaeology combined with bad methods. Becker sometimes just could not believe Caruana's uncritical approach and carelessness when it came to recording and interpreting the data. Already in his first chapter, he does not disguise Caruana's shortcomings. He thus finds a refreshing contrast in Caruana's eventual successor, Themis Zammit, whom he praises incessantly and compares to Paolo Orsi.

#### *Other authors and Becker*

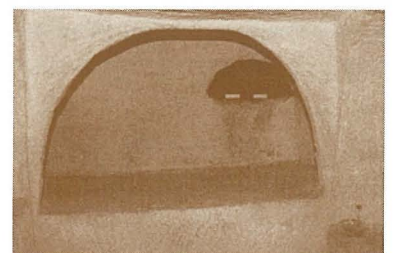
Becker's book was published in 1913 and many authors writing subsequently on the same subject quoted his work. It is not known when his book arrived in Malta, as it is neither listed as an acquisition nor as a donation to the Museums in the Museum Annual Reports. Yet, in 1915, Rushfort (79) dismisses the Samson and Delilah interpretation, but does not mention its source. The following is a selection of authors who quoted *Malta*

*Sotterranea*, but the list is by no means complete. Probably the first person to quote – and misquote – Becker is Bellanti in his *Studies in Maltese History* (1924: 151). Without citing the page from where Bellanti supposedly took the phrase, his 'translation' is an unhappy combination of his own wishful thinking and a footnote in Becker, where the latter quotes other authors' opinions. Becker never said what the 'translation' states.

The fact that *Malta Sotterranea* was only published in German was its biggest drawback. Someone had very early realised the need to have it translated, and in 1924 the last fifty-five pages of Becker's book were excellently translated into French by Constantin Voensky de Brézé. Although not complete, it still contains many of Becker's important discoveries. One would think that French is much easier to understand than German, but it seems that the existence of this French handwritten manuscript at the National Library in Valletta remains largely unknown to this date. None of the subsequent major authors on the Maltese catacombs ever used this translation (although they readily quoted other French authors), and if this was so because they preferred the original, then they failed miserably. Due to the difficulty of the German language, rumours abound and persist. The translators made both Vincent Borg (1986: 76) and Mario Buhagiar (1994: 88) lament that Becker does not give the measurements of the possible altar slab from St. Paul's Catacomb, when in fact Becker gives a detailed description with the measurements in another chapter (1913: 128-9).

Buhagiar's very important work on the Maltese catacombs (1986) makes ample use of Becker's book, but it seems that, sadly, the translations rarely stated what Becker really said. Probably also owing to a wrong translation, Buhagiar (1993:139) further states that Becker used "right angled arrangements of galleries as an argument for a Christian origin", but falls short of giving the page number where Becker is supposed to say so. No surprise, as Becker never said this at all.

Fig. 5: The present day entrance to Catacomb 5 at the SSPaul/Agatha complex.



Most curious are the misconceptions of Becker by Giuseppe Galea Scannura (1996: 110-120), who presumably picked up the wrong translations and interpretations here and there and then literally accuses Becker of “christening the Phoenician flour mills agape tables”. After wondering “Who is this Becker anyway?”, his polemics culminate on p.119 where he asks: “why, you agapephiles, Becker’s followers, are you calling them agape tables?” As stated above, Becker never called them agape tables.

#### *After Malta*

It took Becker two years to finish researching and writing *Malta Sotterranea*. By 1912 Becker had become inspector of studies at the reputable seminary for Lutheran ministers in Naumburg/Silesia. He lived in Naumburg for several years until he took over a small parish in Pommern, again following his late father’s footsteps. Apart from his work as a minister, Becker also lectured at the Martin-Luther-University in Halle-Wittenberg. In 1944, when the war was at its worst, Becker moved to Berlin where he headed the Paulus parish until he died on 22 October 1959. Being a Lutheran minister provided ideal circumstances for Becker: he had a regular income and the Lutheran Church supported and funded his many trips to the Near East, where he worked at the side of Albrecht Alt, his old friend from his days at Erlangen University.

Although Becker stopped publishing his studies in book format, he wrote numerous newspaper articles about his trips to the Holy Land and was regarded as an archaeologist of the highest reputation. He died single and without children. Thus, while his father had passed on his love for Christian archaeology to his son, Erich Becker could only pass it on through his writings. So far this legacy has only reached German readership. However, this will be remedied by an English translation of *Malta Sotterranea* that will be published later this year (Becker, forthcoming).

#### *Acknowledgements*

It was quite a challenge to research about an author of whom nothing more than the date of publication of his book was known. I am grateful to Andreas Engisch for finding Becker’s date and place of birth and for the short *curriculum vitae* until his PhD graduation in 1909, and to Juliane Simon for sponsoring the research to find his date of death. Serendipity and sheer luck led me to Superintendent

Reverend Roland Herpich of Berlin-Wilmersdorf, who most kindly filled in the big information gap between Becker’s Ph.D. graduation and his death by locating and viewing Becker’s file in the State Archive of the Lutheran Church. Also, most sincere thanks to Reverend Herpich for providing the only available photo of Erich Becker. Many thanks to Prof. Anthony J. Frendo, for his helpful advice and for kindly acting as a referee for this article. Bits and pieces of useful advice, ideas and comments were provided by Dr Nicholas C. Vella, Prof. Dr Patrick J. Schembri, Ivan Fenech, Hanna Stoeger (Mrs Albert Mayr), Patricia Camilleri, Reuben Grima, Klaus Haemmerlein, Dr Carla Steinorth, Prof. Helga Mach, Prof. Dr Reiner Soeris, Prof. Dr Gerlinde Strohmaier-Wiederanders and many more. And thanks to the persons, who invented the Internet, without which this research would have been a daunting task.

#### *Bibliography*

BECKER, ERICH

- 1909 *Das Quellwunder des Mose in altchristlicher Kunst*. Strassburg: Heitz & Mündel.
- 1909b Ananias und Saphira, in *Römische Quartalschrift*, Vol. 23-1, pp.183-194.
- 1910 Konstantin der Große, der „neue Moses“, in *Zeitschrift für Kirchengeschichte*, Vol.31, p.161ff.
- 1911 Ein Katakombenbesuch im Jahre 1767, in *Römische Quartalschrift*, Vol. 25, pp.105-111.
- 1911b Neues Material zur Darstellung des „sitzenden alten Mannes“, in *Römische Quartalschrift*, Vol. 25, pp.123-126.
- 1912 Petri Verleugnung, Quellwunder u.A., in *Römische Quartalschrift*, Vol. 26, pp.26-36.
- 1912b Die Fluchtszene des Jonassarkophages, in *Römische Quartalschrift*, Vol. 26, pp.165-180.
- 1913 *Malta Sotterranea, Studien zur altchristlichen und jüdischen Sepulchralkunst*. Strassburg: Heitz & Mündel.
- 1913b Protest gegen den Kaiserkult und Verherrlichung des Sieges am Pons Milvius in der altchristlichen Kunst der konstantinschen Zeit, in: Franz Joseph DÖLGER, Konstantin der Große und seine Zeit. Gesammelte Studien. Festgabe zum Konstantins-Jubiläum 1913 und zum goldenen Priesterjubiläum von Mgr. Dr. A. de Waal, *Römische Quartalschrift*, Supplement 19, p.155ff.
- Forthcoming *Malta Sotterranea, studies of early Christian and Jewish sepulchral art*. Translated, edited and updated by Katrin Fenech.
- BELLANTI, P.F.  
1924 *Studies in Maltese History*. Malta
- BORG, Vincent  
1986 Malta and its Palaeochristian Heritage: a new approach, in Mid-Med Bank Ltd, *Malta, Studies of its Heritage and History*, pp. 47-86. Malta.
- BUHAGIAR, Mario  
1986 *Late Roman and Byzantine Catacombs and Related Burial Places in the Maltese Islands*, BAR International Series 302, Oxford.

- 1993 The Maltese Palaeochristian Hypogea – a Reassessment of the Archaeological, Iconographic and Epigraphic Source Material, reprinted from *Collected Papers, published on the occasion of the Collegium Melitense Quatercentenary Celebration (1592-1992)*, pp.133-202. Malta: University of Malta.
- 1994 Early Christian and Byzantine Malta: Some Archaeological and Textual Considerations, in V. Mallia-Milanes (ed.) *Library of Mediterranean History*, Vol. 1, pp.77-125. Malta: Mireva
- CARUANA, A. A.  
1882 *Report on the Phoenician and Roman Antiquities in the Group of the Islands of Malta*. Malta.
- 1898 *Ancient Pagan Tombs and Christian Cemeteries in the Islands of Malta explored and surveyed from the year 1881 to the year 1897*. Malta.
- GALEA SCANNURA, Giuseppe  
1996 *Archaeological Discovery, Supplement to The Hidden City of Rabat*. Malta.
- HASSET, Maurice  
1908 Christian Archaeology, in *The Catholic Encyclopedia*, Vol. III,
- HÖHNDORF, Friedrich-Wilhelm  
1873 *Lebenserinnerungen, 1873*. Unpublished.
- MATTHAEI, H.  
1899 *Die Totenmahldarstellungen in der altchristlichen Kunst*. Dissertation. Erlangen.
- MAYR, Albert  
1901 Die altchristlichen Begräbnisstätten auf Malta, in *Römische Quartalschrift*, Vol. XV, pp. 216-384.
- 1909 *Die Insel Malta im Altertum*. Munich.
- RUSHFORTH, G. McN.  
1915 A note on the Mosaic from the Roman Villa at Rabato, Malta, in Th. Ashby, *Roman Malta*, reprinted from the *Journal of Roman Studies*, Vol. V, pp. 79-80.
- STROHMAIER-WIEDERANDERS, Gertrud  
1999 Geschichte des Faches und des Lehrstuhls “Christliche Archäologie und kirchliche Kunst“ an der Theologischen Fakultät der Humboldt-Universität, in *Theologie und Kultur*, Festschrift zum 150jährigen Bestehen des Lehrstuhls für Christliche Archäologie und kirchliche Kunst. Halle.
- VOENSKY DE BRÉZÉ, Constantin  
1924 *Malta Sotterranea, traduit de l'allemand par C. Voensky de Brézé*. Résumé. Manuscript. National Library of Malta.
- ZAMMIT, Themistocles  
1910-11 *Fieldnotes*. Notebook 3. Manuscript. Museum of Archaeology, Valletta.



# REPORT ON THE EXCAVATION OF A PUNIC TOMB, BAJDA RIDGE, XEMXIJA (MALTA)

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*The Excavation (NCV, AB, DB, NJC, EDG)*

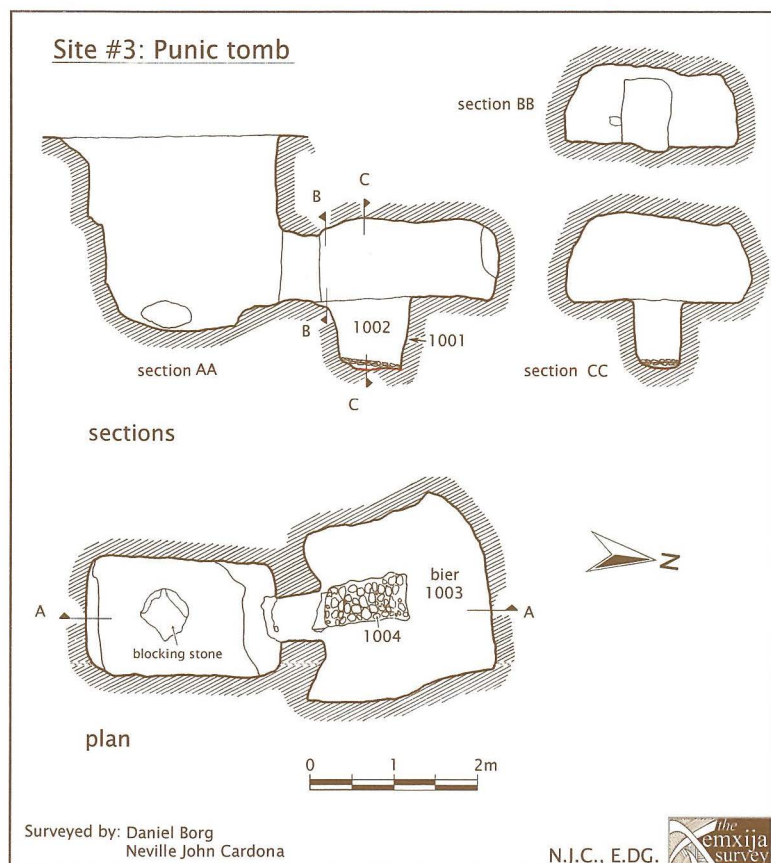
On 19<sup>th</sup> November 2001, while two of us (DB, NJC) were preparing a drawn record of the Punic tomb that is situated on Bajda Ridge, Xemxija, a small ceramic bowl (1002/1) was uncovered from below a few centimetres of soil that covered the inner part of the threshold to the rock-cut chamber (Fig. 1). An official from the Museums Department was informed of the discovery on the same day and a site inspection was carried out. It was realised that more artefacts could lie undisturbed within the chamber and a decision was taken to excavate the deposit. Authorisation for the Department of Classics and Archaeology, University of Malta, to undertake the excavation was received from the Director, Museums Department, and the excavation was completed on the 22<sup>nd</sup> November.

The tomb is located on the ridge, near a path that diverges eastwards from the track that links Pwales

valley to the Mistra valley. It is cut in the Upper Coralline limestone that outcrops in the area on a North-South axis and consists of a sub-rectangular chamber that is reached through a low entrance at the bottom of a rectangular shaft (Fig. 1).

The tomb appears in an inventory for the first time in 1996 when it was listed in the survey of archaeological sites prepared by Malta University Services for the Planning Authority by Anthony Bonanno in connection with the preparation of the North-West local plan for Malta. The tomb had been examined and photographed by one of us (NCV) in 1992. At the time, it was littered with debris and it was only with difficulty that a view of the chamber could be achieved through the entrance that was partly concealed by an irregular blocking stone. Late in 2000, members of the St Paul's Bay Heritage Group lifted the debris from the trench and cleared the area around the site.

Figure 1 Plan and sections of Punic tomb, Xemxija.



Excavation inside the chamber revealed a brown (Munsell 7.5YR 4/6), coarse sandy deposit SU 1002 filling a rectangular trench SU 1001 cut in the bedrock bier SU 1003. Several ceramic vessels of Punic date were found within deposit SU 1002 (Fig. 2). These included a trefoil-mouth jug found broken *in situ* (1002/2), a complete urn (1002/3), a bowl (1002/5), and a broken amphora (1002/4). Other finds from the same deposit included a metal earring (1002/6) and two fragments (1002/14, 1002/15) of what appear to be small bone rings or attachments (Fig. 4). A quantity of human and animal bones and molluscan remains were also recovered. Excavation of deposit SU 1002 revealed that the amphora had been placed vertically against the south side of the trench, resting above a layer of stone packing and fine limestone dust SU 1004 that lay at the bottom of the trench.





Figure 2 The trefoil jug, the urn and the amphora in situ inside the water trench of the Punic tomb, Xemxija.

Since the urn, the amphora and the jug were found to contain deposit inside them these were lifted and excavated in the laboratory. The molluscan remains and the bone assemblages were likewise studied in the laboratory. The ceramic material was cleaned using distilled water and awaits restoration by supervised undergraduates following the degree course in conservation at the Malta Centre for Restoration.

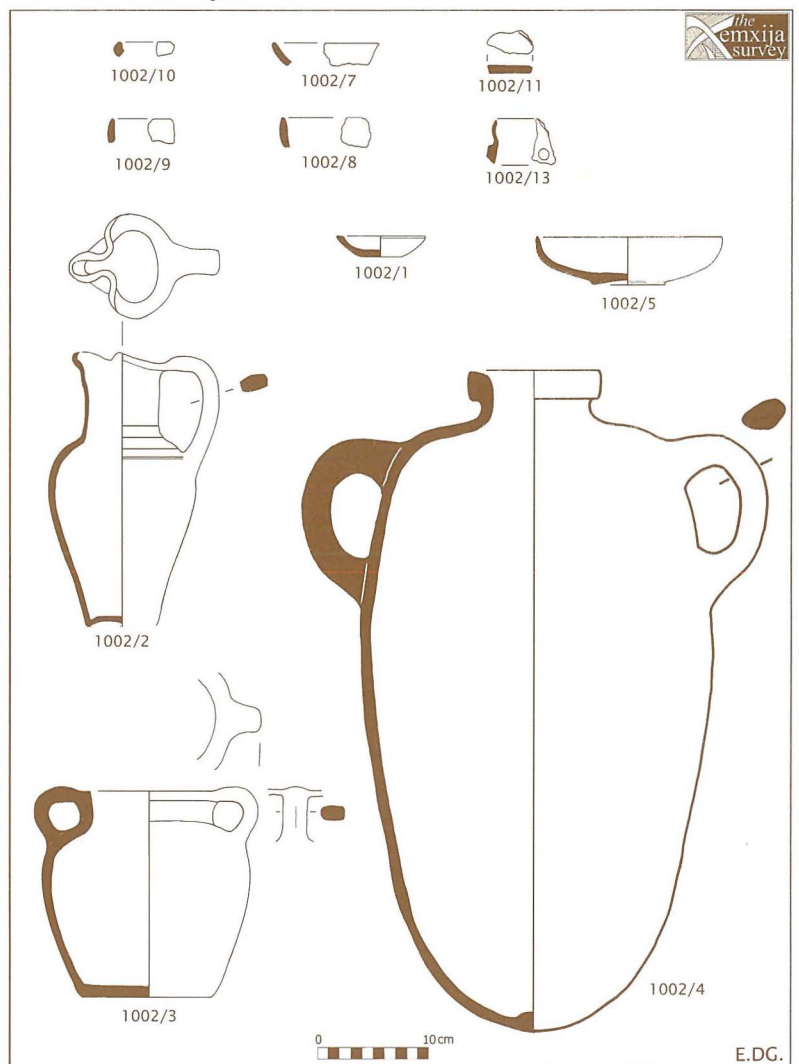
#### The Pottery (KCB, CS, IVG)

Among the sherds excavated, a number of fabrics and shapes were identified, which are characteristic of the Punic pottery found elsewhere on the Maltese islands. The crisp ware shapes, consisting of a trefoil-mouth jug and urn, together with the two soft brown bowls, are indicative of a 'classic' tomb repertoire, attributed to the Late Phase III-Early Phase IV Punic Period within the fourth century BC (after Sagona (2002)). The finds can be compared to tomb groups at Paola (M[useum] A[nnual] R[eports] 1964: 6, pl. 5; Sagona 2002, entry 335, fig. 95:9-12), and at Addolorata Cemetery, Tal-Horr (MAR

1960: 9, pl. 6; Sagona 2002, entry 670, fig. 239:1-9). The friable soft brown and soft orange sherds point towards an earlier date for the tomb, while the high-collared rim of the amphora becomes commonplace in the Late Phase IV Punic Period.

The pottery, through its analogies with tomb repertoires, can be separated and attributed to two clear chronological groups. It is possible that some pottery fragments are intrusive, which may be the case with regard to the earlier material (the well-eroded friable soft brown and soft orange sherds). The shape of the tomb – a variant of the large and wide, shaft and chamber tombs akin to Plan 7a-b devised by Sagona (2002) – is characteristic of an early Punic phase, possibly dating as early as the sixth century BC, and, judging by the extant repertoire of identifiable shapes, it experienced a late fourth century reuse.

Figure 3 The ceramic finds from the Punic tomb, Xemxija.



### *Catalogue of Pottery*

Four distinct fabric ware types were identified, and named in accordance with Sagona's ware types (Sagona *et al.* 2000).

#### *Friable Soft Brown*

This fabric is characterized by a soft-fired friable consistency that has a soapy to powdery feel. The fabric has a dull sound. The surface is matt brown (5YR 6/8 Reddish Yellow) with a darker brown core (7.5YR 6/8 Reddish Yellow). This thin-walled coarse fabric easily fractures into hackly breaks due to the moderate amount of medium-sized, matt light orange inclusions that may be grog. The fabric is self-slipped and the inclusions are evident at the surface. All sherds in this fabric are heavily eroded.

Friable Soft Brown may be an earlier hand-made version of the more ubiquitous Soft Brown. The regular Soft Brown has been found at Tas-Silġ, Malta and is attributed to the Late Phase III - Early Phase IV Punic Period. However, no parallels of this particular fabric have been documented elsewhere.

#### **Catalogue of Friable Soft Brown Shapes**

(Fig. 3):

##### XMx01/1002/7

Rim sherd of a small, shallow conical-shaped bowl, possibly hand-made.

Diameter: 13 cm Range of Wall Thickness: 0.3 to 0.7 cm

##### XMx01/1002/8

Rim sherd of a small, shallow conical-shaped bowl,

Figure 4 The metal earring (left) and the worked bone fragments (right) from the Punic tomb, Xemxija. The scale is in millimetres.



possibly hand-made. A scratched line on the internal surface may be due to usage.

Diameter: approx. 8 cm Range of Wall Thickness: 0.3 to 0.7 cm

##### XMx01/1002/9

Rim sherd of a small, shallow conical-shaped bowl, possibly hand-made. A scratched line on the internal surface may be due to usage.

Diameter: approx. 8 cm Range of Wall Thickness: 0.3 to 0.7 cm

Five other body sherds were also found in this fabric.

#### *Soft Orange*

This fabric is characterized by a soft-fired clay that has a smooth texture. The fabric has a dull sound. The central core of the fabric is orange (5YR 7/6 Reddish Yellow), while the margins and surface are a lighter orange (5YR 6/8 Reddish Yellow). This thin-walled well-levigated fabric fractures into rounded well-eroded breaks. Probably wheel-made. Parallels of the Soft Orange fabric are found at Tas-Silġ and are attributed to the Late Phase III - Early Phase IV Punic Period.

#### **Catalogue of Soft Orange Shapes** (Fig. 3):

##### XMx01/1002/10

Rim sherd with everted lip, possibly of a jug or flask. Diameter: 13 cm Wall Thickness: 0.5 cm

##### XMx01/1002/11

Fragment of small, flat base with a red band painted on the outermost edge of the internal surface. Probably part of an open shape like a bowl.

Six other body sherds were also found in this fabric.

#### *Soft Brown*

This fabric is characterized by a soft-fired clay that has a soapy texture. The core and external surface are matt brown (7.5YR 6/8 Reddish Yellow) with a darker brown internal surface (7.5YR 7/8 Reddish Yellow). This thin-walled fine-textured fabric has irregular breaks and a dull sound. The fabric is thinly slipped and in the case of the medium-sized bowl is streak-burnished.

Soft Brown is probably contemporary to the 'classic' crisp ware mentioned below. Parallels of this ware type are found at Tas-Silġ.

### Catalogue of Soft Brown Shapes (Fig. 3):

#### XXMX01/1002/1

Complete, small-sized shallow bowl with inverted round lip and flat base. Slightly under-fired, the surface has a thin pale slip, which is partially eroded. Wheel-made. A variant of this type of bowl has been found at Tas-Silġ.

Height: 2.1 cm Diameter of rim: 8.3 cm  
Diameter of Base: 3.4 cm Wall Thickness: 0.4 cm  
Depth of Bowl: 1.8 cm

#### XXMX01/1002/5

Medium-sized open bowl with simple tapered rim and slightly concave disc base. Self-slipped and streak-burnished throughout. Clean, sharp breaks. Wheel-made.

Height: 4.1 cm Diameter of Rim: 16.6 cm  
Diameter of Base: 6.4 cm Depth of Bowl: 3.5 cm  
Range of Wall Thickness: 0.3 to 0.7 cm

This bowl has parallels in the tomb repertoires and is attributed to the fourth century BC. They first appear in Phase III and continue well into Phase IV. In this respect, they are contemporary to the crisp ware trefoil-mouth jug and urn mentioned below.

#### Crisp Ware

This fabric is characterized by a hard-fired clay that has a distinctive clinker sound when tapped, hence its name. The fine-textured compact clay has a smooth feel on the surface. This fabric is not always evenly fired and has a grey core (10Y 6/1 Greenish Grey) and red to yellow margins and surfaces (5YR 6/8 to 7/8). The fabric tends to fracture in large, irregular sharp breaks. Although wheel-made, a moderate number of medium-sized, matt white inclusions, probably calcium grit, are found. The fabric is usually thin-slipped or self-slipped a reddish yellow colour (7.5YR 8/6). All the sherds are wheel-made. The trefoil-mouth jug has thin red (2.5YR 4/8 to 5/6) bands painted on its shoulders and neck.

	SU 1002 (water trench)	Amphora 1002/4	Urn 1002/3	Trefoil 1002/2
Cranium				1 fragment
Mandible	1 mentum			
Teeth	1 molar, 1 incisor, 2 premolars (one "juvenile")	1 premolar		1 incisor
Vertebrae	2 <sup>nd</sup> cervical fragment	✓		1 body
Sacrum	1 fragment			
Pelvis	✓			
Ribs	✓	✓		
Clavicle	✓			
Scapula	✓			
Humerus				
Radius	1 left tuberosity			
Ulna				
Carpals		1 left trapezoid		
Metacarpals				
Femur	1 right condyle			
Patella	1 right, 1 left			
Tibia				
Fibula				
Tarsals	1 right cuboid			
Metatarsals	1 right 5 <sup>th</sup> , 2 left 5 <sup>th</sup> , 1 left 2 <sup>nd</sup>	1		
Phalanges				
Proximal		6		
Intermediate		1		
Distal	2	3		
Unidentified fragments	✓	✓	✓	✓
Cremated fragments		✓	1	
Animal	✓	✓	✓	✓

Table 1.  
List of bones retrieved from the tomb.  
✓= more than 10 fragments present in the sample.

Extensive parallels of this fabric are found at Tas-Silġ, where this fabric is the dominant ware type. Tomb contexts suggest that it is the principal Punic ware from the late sixth century BC to the Romano-Punic period. Further chronological distinctions in crisp ware generally rely on changes in pottery shape or shifts in decorative features, such as the use of bands of red paint over the red or yellow slip.

### Catalogue of Crisp Ware Shapes (Fig. 3):

#### XMx01/1002/2

Trefoil-mouth jug with ovoid-sectioned handle set straight from rim to shoulder. Flanged rim with pinched spout. Thick neck with a distinctive small swelling under the spout. Thin-walled. A cluster of three, thin red bands round the shoulder, single bands round the neck. Matt yellow slip. The base is concave, rising in the middle. Parallels to this jug are found in Sagona 2002: figs 95:11, 239:1, 9. Height: 25 cm Base: 7 cm Rim to Spout: 8.6 cm Outer Width of Mouth: 9.3 cm

#### XMx01/1002/3

Complete urn with two ovoid-sectioned strap handles attached at the rim and shoulder. Flat everted rim, angled down to the outer edge. Squat shape with flat base. Thick-walled. Well-fired. Parallels to this urn are found in Sagona 2002: figs 95:12, 239:5. Height: 18.7 cm Diameter of Rim: 14.3 cm Diameter of Base: 12 cm

The trefoil-mouth jug and urn together with the soft brown bowls have affinities with tomb repertoires that are attributed to the Late Phase III-Early Phase IV Punic Period, datable to the late fourth century BC.

#### XMx01/1002/4

Ovoid-shaped amphora with two handles joined at the shoulder. Almost horizontal carinated shoulders, short neck and distinctively thick high-collared rim. Wheel-ribbed interior. Probably an early appearance of the high-collared rim.

Parallels to this amphora are found in Sagona 2002: figs 95:9, 239:3, 7 and T2212 in Ramon Torres 1995: 179, figs 27, 153.

Height: 60 cm Diameter of Rim: 12 cm

#### XMx01/1002/13

Stump of handle, slight carination of shoulder, possibly from a jug or flask. Diameter at shoulders: approx. 16 cm

Remaining fragments include: two body sherds of a round, closed vessel, probably from a jug or urn (double band of red paint is on one of the sherds); four body sherds of a round, closed vessel, probably from a jug or urn; four other body sherds.

#### *The Human Bones (JST)*

Four groups of human bones were studied, those found in deposit SU 1002, those retrieved from within the amphora, those from the urn, and those

Table 2 Species-abundance matrix for land snails retrieved from the tomb with an indication of the habitat preferences of the species recovered. j= juvenile, u= ubiquitous, x= xeric, m= mesic, s= subterranean, v= on vegetation. The total number of shells includes juveniles.

SU	SU 1002	1002bag	Trefoil	Amphora	Urn	habitat
volume of sample (litres)	300	1.5	?	10?	1.3	
<i>Pomatias sulcatus</i>	84+3j	8+12j	9	115+51j	21	u
<i>Granopupa granum</i>		29		1		x
<i>Chondrula pupa</i>	1			3		u
<i>Vitrea</i> spp.		2				m
<i>Ceciliodes acicula</i>		3				s
<i>Gerussacia folliculus</i>	24	40+17j	9	371	24	m
<i>Rumina decollata</i>	137+45j	2+10j	2+6j	49+108j	5+5j	x
<i>Muticaria macrostoma</i>	8	9	5+1j	35	4	x
<i>Papillifera papillaris</i>	76	33+4j	47	319	62	u
<i>Trochoidea spratti</i>		9+3j	3	23	2	x
<i>Cernuella caruanae</i>	140	7	8	131+3j	9	u
<i>Caracollina lenticula</i>	10+1j	9+56j	6+4j	153		u
<i>Cochlicella acuta</i>		14+4j	1	35	6	u
<i>Theba pisana</i>	16	13+10j	2	8+19j	5+3j	u
<i>Eobania vermiculata</i>	55	f	2	14+11j	6	u
<i>Cantareus apertus</i>	17	1	1	25	3	v
<i>Cantareus aspersus</i>	1					v
<b>TOTAL</b>	<b>620</b>	<b>296</b>	<b>106</b>	<b>1474</b>	<b>155</b>	
diversity	12	15	11	12	11	

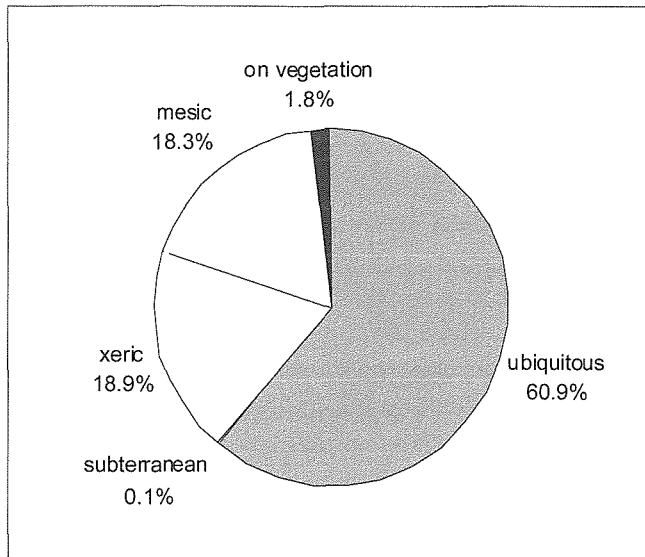


Figure 5 Percentage distribution of habitat-specific and ubiquitous land snails from the Punic tomb, Xemxija.

from the trefoil jug (Table 1). The bones were found to be in a very poor and fragmented state and together they constitute roughly less than one quarter of a skeleton. The total weight of the bones (including the animal bones) is 590 grams. No evidence of any anatomical articulation was noted. The bone group from the amphora revealed a few charred fragments and hand and foot bones, besides other bones. The presence of two left fifth metatarsals indicates the minimum number of adult individuals present in the tomb is two, one of which could be a male as suggested by large rough radial tuberosity. Moreover, the presence of a premolar tooth indicates the presence of a juvenile. This exception apart, the bones all belong to mature adults. Pathology was also noted. Attrition of the teeth with evidence of caries is present on a molar tooth, while an unusual concavity on the medial base of a left second metatarsal appears to be due to pressure erosion – probably from lateral dislocation of the 1<sup>st</sup> metatarsal – indicating arthritic changes at the first metatarsotarsal joint.

#### The Animal Bones (AC)

The assemblage of animal bones recovered from the tomb is small, containing 116 bones in total. Of these, 114 belong to microfauna (including amphibian and micromammals) and are probably of recent origin and, therefore, of no archaeological consequence. The remaining two bone fragments belong to macro mammals and consist of one ovicaprid phalange and the rib of an indeterminate species.

#### The Molluscan Remains (KF)

##### Introduction

A large number and variety of molluscs were collected from the Punic tomb. Most of these shells most probably found their way into the tomb with heavy rainfalls that washed them down from the surrounding slopes, together with small stones and soil. Therefore, they give some indication of the environmental conditions of the area above the shaft of the tomb.

##### Material and methods

SU 1002 was sieved through a 2.5 mm mesh on site by the excavators. Due to the large mesh size used, juveniles and smaller species are missing from this sample. Furthermore, the vast majority of snails collected after sieving were in fact large species that are easily picked out. The material found inside the trefoil jug, the amphora and inside the urn was dry-sieved in the laboratory using test sieves, the smallest of which had a 1 mm mesh. A 1.5 litre sub-sample of SU 1002 (“1002 bag”) was wet sieved and here the smallest sieve had a 0.5 mm mesh size. All material smaller than 2 mm from this sample was sorted under the microscope. Strangely, only fragments of the red-banded snail *Eobania vermiculata*, the goat snail *Cantareus apertus*, Caruana’s cernuella *Cernuella caruanae* and of the adult decollated shell *Rumina decollata*, were found. Compared to the overall amount of large shells retrieved, these appear to be underrepresented in the analysis of this sample. As this bag was originally intended to be a soil sample (as opposed to an environmental sample), any large components may, therefore, have been removed during sampling. It is thus uncertain, if any of the samples presents a complete qualitative or quantitative picture of the mollusc assemblage. However, some conclusions may nonetheless be drawn from the results of the various analyses taken together (Table 2).

##### General observations

Seventeen different species were found overall. The small 1.5 litre sample alone yielded 15 species, including small species that, predictably, were not recovered from the other samples processed using large mesh sizes. This wide variety of different species is indicative of a rather undisturbed generalised habitat (Evans 1972: 90-1). The low abundance of both the goat snail *Cantareus apertus* and the edible snail *Cantareus aspersus*, both of

which are normally abundant in agricultural areas, further indicates little, if any, cultivation in the vicinity. All species found are terrestrial snails. The presence of the subterranean species *Ceciliodes acicula* indicates that the deposit was in fact buried, while most of the other species recovered are indicative for an open country/garigue landscape (Giusti *et al.* 1995). Figure 5 shows the percentage distribution of the various snails. As expected, ubiquitous snails are the most abundant. In the Maltese Islands, these snails are found in most types of locally occurring habitats, both natural and anthropogenic (Schembri *et al.* 2000: 103). Since they also tolerate wide variations in environmental conditions, they are the least useful for reconstructing the environment (Gee and Giller 1991: 10). The habitat-specific species have nearly the same percentage occurrence; thus on the basis of these data, a xeric environment was as much present as one with leaf litter. Yet, despite the presence of mesic species that thrive in leaf litter, the absence of *Oxychilus draparnaudi* indicates a lack of humidity and dampness within the leaf litter. The location of the tomb being on a south-facing slope, this is no surprise. Also absent are any woodland species and, as may be expected, those associated with fresh water. Thus, if ever there was a woodland/maquis environment on this hill, it had certainly vanished by the time the tomb was opened and the first snails were washed in. In all, it seems that there was little change in the general environment from the time that runoff water started washing the snails into the tomb to the present.

### Conclusion (NCV)

The excavation of the Punic tomb has provided the team with the opportunity of adding new information to the archaeological landscape of Bajda Ridge, Xemxija, while an extensive field survey was in progress. The evidence suggests that the tomb was disturbed at more than one instance in the past, the first possibly in the late fourth century BC when the ceramic repertoire was deposited in the tomb, replacing an older ceramic group. It is unclear whether the urn and the trefoil jug were intentionally placed above the broken amphora in the trench or whether they rolled off the bier, possibly through water action. The molluscan remains recovered suggest that the deposit that filled and covered the ceramic paraphernalia and the trench, accumulated through natural processes, aided by the fact that the blocking stone is irregular.

In view of this, it is difficult to read more into the discovery of a number of human phalanges inside the amphora, a practice that would appear to form part of a local burial rite in later centuries (pers. comm. Nathaniel Cutajar). Excavation of the debris that was noted inside the shaft in 1992 would perhaps have allowed the team to come up with evidence to sustain or refute the construction of events presented here.

It is unfortunate to finish this report on a sad note. In May 2002 vandals dismantled a stretch of rubble wall that members of the St Paul's Bay Heritage Group had patiently reconstructed, throwing stones and debris inside the tomb shaft. Entrance to the chamber is now blocked. The bedrock surrounding the tomb shaft was daubed with unsightly bright orange paint and the words "out" and "privet" (*sic*) can be easily made out. The damage done was reported in a circular released to the press (*The Times*, 25 May 2002) by the Museums Department who expressed dismay at such pointless damage.

### Acknowledgements

We are grateful to the following for their help throughout the course of our work: Anthony Bonanno, Nathaniel Cutajar, Chris Gemmell, Mark-Antony Mifsud, and Patrick J. Schembri.

### Bibliography

- Bonanno, A., Frendo, A.J., with Vella, N.C. (eds). 2000. Excavations at Tas-Silġ, Malta: A preliminary report on the 1996-1998 campaigns conducted by the Department of Classics and Archaeology of the University of Malta. *Mediterranean Archaeology* 13: 67-114.
- Evans, J. G. 1972. *Land Snails in Archaeology*. Seminar Press, London.
- Gee, J. H. R. and Giller, P. S. 1991. Contemporary community ecology and environmental archaeology, in D. Harris and K. Thomas, K. (eds), *Modelling Ecological Change*, pp 1-13. Institute of Archaeology, University College London, London.
- Giusti, F., Manganelli, G., and Schembri, P. J. 1995. *The Non-Marine Molluscs of the Maltese Islands*. Museo Regionale di Scienze Naturali, Torino.
- Sagona, C. 2002. *The Archaeology of Punic Malta*. Ancient Near Eastern Studies Supplement Series 9. Peeters Press, Leuven.
- Sagona, C. with Farrugia, R., Borda, K., Zammit, M. E., Stöger, H., Galea, M. 2000. Pottery. In A. Bonanno, A. J. Frendo with N. C. Vella (eds), pp 84-97.
- Schembri, P. J., with Falzon, A., Fenech, K., Sant, M. J. 2000. The molluscan remains. In A. Bonanno, A. J. Frendo with N. C. Vella (eds), pp 102-109.
- Ramon Torres, J. 1995. *Las Anforas Fenicio-Punicas Del Mediterraneo Central y Occidental*. Universitat De Barcelona, Barcelona.

# AVIAN REPRESENTATIONS from prehistoric and medieval sites on the Maltese Islands.

George Zammit Maempel

The aim of this publication is to catalogue the avian representations discovered in local prehistoric and medieval sites, to illustrate as many of these as possible and to register a hitherto unrecorded find of a miniature clay bird from Mnajdra (Qrendi, Malta) and of a North African oil lantern with a bird emblema on its disc.

Stylized bird drawings on prehistoric pottery, miniature replicas of birds in baked clay or avian representations as pendants are not rare finds in archaeological sites on the Maltese Islands. There is, however, no record of any Maltese cave paintings with avian representations.

Avian figures and representations are to be found also in modern culture. It is enough to look at the flags or emblems of various nations to discover the power of symbolism. Many modern nations have incorporated in their flag or coat-of-arms a representation of that powerful bird - the eagle - as an emblem of their might. Langdon (1964:117) asserts that the eagle with deployed wings and rapacious talons, a symbol of mighty power, appeared first in the Hittite (ancient Syrian) iconography, subsequently spreading from Sumeria to Asia Minor and thence to Europe.

Thus, the Romans placed this avian symbol on their banners and the Hapsburg Empire adopted the double-headed eagle as its emblem. In more recent times, the eagle was incorporated also in the flags, crests as well as postage and revenue stamps of many other nations - including Nazi Germany, Egypt and Libya. Notwithstanding that in the 1930s Roosevelt chose the physically strong Brown Bear as the emblem of the United States of America, it is the Bald Eagle that is now portrayed on its postage stamps and embassies as a symbol of its might [Pl.1].

Archaeological sites on the Maltese Islands have yielded not only representations of what are thought to be ibis, herons, ducks, geese, pelicans and other water birds but also of doves, quails,

partridges, hawks / falcons, peacocks and, possibly, cranes. These are reproduced in various media, including molluscan shell, stone and pottery. Their local record extends from Neolithic (possibly also Palaeolithic) to Medieval, Roman and Early Christian times.

## *Descriptive Catalogue*

Most of the avian representations recovered from local archaeological sites are now in the Collections of the National Museum of Archaeology in Republic Street, Valletta (N.M.A.), whilst material recovered from the sister island of Gozo is at the Archaeology Museum of that Island in Victoria (Rabat). Some of the old material recovered from both Islands, could not be located in either Institution — as it was never catalogued. The avian representations are hereunder reviewed chronologically and, whenever known, the Museum registration number of each item is also recorded. This is preceded by one or two code letters representing the initials of the site-name e.g. **Gg** for Ġgantija, **Gd** for Ghar Dalam, **Mn** for Mnajdra, **T** for Tarxien Temples, **TC** for Tarxien Cemetery, and **S** for Hal Saflieni. These code letters are followed by a stroke and another code letter indicating the composition of the specimen — whether bone (**/B**), pottery (**/P**), or stone (**/S**).

• *Ġgantija (Xagħra) in Gozo (3600-3000 B.C.) Megalithic remains, 'Copper Age'. (see EVANS 1959:151-152, Pl.74; 1971 : 232, 172). [Pls.2, 3]* The two Prehistoric Temples at Xagħra, Gozo, namely *Ġgantija* ('Torre dei Giganti') and *Iċ-Ċirku tax-Xagħara* ('Brochtorff Circle'/'*Il Giro dei Giganti*') have yielded interesting discoveries both in the field of avian remains as well as in that of avian representations. The bird bones which BROCHTORFF (1849: 5) and EVANS (1971:182) record as having been recovered from 'the upper excavations' (i.e. '*Il Giro dei Giganti*' or 'Brochtorff Circle') remained unidentified.

Two avian representations, an *Ibis* [Pl.2] and a flight of crested birds [Pl.3], were recovered from

the Ġgantija Temples which are only a very short distance away from the 'Brochtorff Circle'. Both representations have been recorded and figured, but only the pottery bearing the birds in flight is preserved.

The *Ibis* representation could no longer be traced. When A.F. Didot visited Ġgantija Temples in May 1839, he drew a plan of the two temples and made detailed drawings of the finds — including the *Ibis*. These drawings are reproduced in LACROIX (1851) where Pl.27, fig. 2 shows the drawing of the 24 cm high soft Globigerina Limestone block on which, with a few strokes of a pointed instrument, an unknown artist produced the unmistakable figure of the Glossy Ibis (*Plegadis falcinellus* (L), *Velleran, Hasi tal-Bahar*). (See also Lacroix 1851: 57, footnote 1). This is a bird with a long curved beak and a long neck, standing high on its long legs [Pl.2]. The significance or the symbolism of the *Ibis* representation on the limestone block is not known. The bird was formerly listed as a locally 'very common species' but has since become 'a scarce passage migrant' which appears on the Maltese Islands in large numbers only occasionally (SULTANA, GAUCI and BEAMAN, 1975:24).

It is important to note here that Ġgantija Temples on the limits of Xaghra stand on an Upper Coralline Limestone plateau and are built of hardstone megaliths derived from that regional Formation. The much softer Globigerina Limestone block on which the Glossy *Ibis* is incised, however, is foreign to the Xaghra region and must have been transported there from some distance, as there are no Globigerina Limestone outcrops in the vicinity. This is a clear indication that early man in Malta was the earliest 'geologist' to visit this Island, for he was aware, not only of the different varieties of limestone on the Island, but also of their relative softness and durability and adopted each variety to his particular needs.

One other local representation of an *Ibis* was unearthed by Patri Manwel Magri S.J. from a Punic tomb at *Ta' l-Ibraġ*, but this will be dealt with later on, under the heading Punic Period.

More than a century after the find of the Globigerina Limestone block with the incised drawing of an *Ibis*, the Museum authorities

recovered (1954), also from Ġgantija Temples, a second interesting avian representation [Pl.3]. (see also EVANS, 1959:151, 152, 230, Pl.74; 1971, Pl.64, fig. 2) This was in the form of a 75mm fragment of a pottery bowl decorated with the incised figures of nine stylised, crested large birds gracefully flying from left to right in three rows, with outstretched long neck raised about 80-90° above the horizontal. For better contrast and a greater artistic effect, the outline of the birds is gracefully inlaid with gypsum (Hydrated calcium sulphate, Ca SO<sub>4</sub>.H<sub>2</sub>O) - a mica-like salt that is abundantly present on the Tertiary Clay slopes of the Maltese Islands.

Each of the birds has a long, backward-arched, single-plume crest, a short pointed beak, a moderately-long pointed tail and wings in different positions of flight. Six of the nine birds are complete or almost so. The incomplete bird in the right upper corner is represented in a totally different position of flight. Its wings are arched downwards and its legs are dangling, much like a heron that has just taken off and is beating its wings to gain height

• *Mnajdra (Qrendi), Megalithic remains, 'Copper Age'* (Evans 1971:231, 96).

A 48mm long pale orange-brown terracotta bird-model with a flat base (40mm x 25mm) and lacking a head, was found accidentally in one of the pathways leading to the Mnajdra Megalithic site [Pl. 4]. The discovery was made on the moonlit night of January 23rd, 1974, when Mr & Mrs Hill of the Australian High Commission in Malta (then investigating the possibility of the Temple having been used for astronomical purposes) collected and examined the nature of a small stone that kept rolling after being kicked. The find was subsequently shown to the author who identified the object and suggested donation to the Museum Department.

A few days later, before leaving the Island for a new posting in Sweden, Mr Hill obliged, but as the donation does not seem to have been registered or ever recorded in the *Annual Reports of the Museum Department*, it could not be located in the collections of the Museum of Archaeology in Valletta (1995). The specimen is consequently being herein listed and described for the record. As there is no photographic documentation of it,



the rough sketches prepared by the author when this model bird was shown to him in 1974, are likewise being reproduced [Pl. 4].

The flat base of this bird indicates that, like most of the other bird models recovered from Maltese archaeological sites, this too, is of an aquatic bird. Its markings, however, fit no known species and with the head completely missing, a great diagnostic feature is lacking. Its external decoration consisted in a single row of pittings along upper chest (semi-collar/half ring), very shallow downward-concave grooves on sides, with deep and wide 10mm-long longitudinally parallel grooves all along the wide, blunt posterior end (tail). When viewed laterally, only three grooves showed, but when viewed from above, five such like structures were seen.

Measurements of the headless bird model follow hereunder:

Neck - tail length (B) = 48mm; Perpendicular height from anterior (lower) edge of neck-fracture (E) = 20mm; Diameter of neck at site of fracture (grey surface) (C) = 8mm; Flat ovoid base: length (A) = 40mm; maximum width (D) = 25mm; width of blunt posterior end (H) = 12mm; Length of grooves on tail (G) = 10mm.

As this bird model was much larger than other avian representation finds and as it bore no perforations for threading or suspension, it was probably meant to be a household ornament or, perhaps, a cult object or a votive offering.

• *Tarxien Temples (3300-2500 B.C)*

Tarxien Temples date back from the Copper Age (Temple Building Period by Maltese standards) to the Bronze Age (EVANS, 1971:232). Evans (1971: 126 footnote 1) records that in 1921, Ashby (1924 : 95-96) unearthed from the thick *torba* floor of Room 11, the 'skull of the greater shearwater'. It was associated with a number of marine shells and some artefacts and lacks any paint markings. Its archaeological significance at this inland site is not known. Presumably, the skull, which is now no longer available for study as it cannot be traced, belonged to the Mediterranean Shearwater (*Procellaria diomedea diomedea* Scapoli, *Ciefa*), a bird that is still common on the Maltese Islands as it is both a breeding resident and a spring breeding visitor.

From the western part of the Megalithic remains of the Tarxien Temples, Dr (later, Professor Sir) Themistocles Zammit unearthed also a personal ornament (T/B. 20, here Pl.5) in the form of an ivory model of a tiny 'sitting bird' having an ovoid base (L. 13mm, B. 12mm, H. 6mm) with two converging V-perforations along its length. ZAMMIT (1916, Pl.17 fig.1; 1920:196) records that, when recovered, the bird had traces of red stain on head and back (see also EVANS 1971:145; Pl.51, fig.7). As the stylized model lacks legs, but has a flat base instead, it probably likewise represents a floating water-bird. Complete absence of surface decoration or of any other diagnostic feature does not permit any speculation as to its specific identification [Pl.5].

From this same site, Zammit recovered (1919) still another interesting avian representation in relief on a coarse grey sherd of pottery (T/P. 78) measuring 75mm x 60mm x 11mm. The decoration portrays a pair of inwardly-concave V-shaped horns (each with three red horizontal stripes close to its base) enclosing a short-beaked, short-bodied, chubby bird with erect neck (ZAMMIT, 1920:200, Pl.xvii, fig.1B; EVANS, 1959:152, Pl.73; 1971:142, Pl.47, fig.5). The representation very much resembles that of a partridge (*Alectoris*, *Hagel*) or a quail (*Coturnix coturnix*, *Summienna*). The pattern of ox-horn decoration is applied to the surface of the vase [Pl. 6].

The modern range of the genus *Alectoris* extends to Asia and Africa, but that of the sedentary Red-legged Partridge *Alectoris graeca* (Meisner 1804), *Hagel*, does not extend beyond south western Europe (COWARD, 1950:364). As partridges do not usually fly over long stretches of water, no member of the genus is now on the list of avian visitors to the Island. Remains of the Red-legged Partridge, however, were discovered by FISCHER & STEPHAN (1974:516) in the Pleistocene deposits of Ghar Dalam cave (S.E. Malta) associated with the over 130,000-year-old remains of the hippopotamus and elephant

• *Tarxien Cremation Cemetery. ( 2500-1500 B.C.).*

From cinerary urns in the Tarxien Cremation Cemetery, T. Zammit (1916:137, Pl.XVI fig.3 no. 5; Pl.XVII fig.1) recovered some carved leg-bones of birds and a large number of personal ornaments, all pierced for threading or suspension in necklaces.

Among the perforated ornaments he found also three miniature terracotta models of birds registered at the National Museum of Archaeology, Malta, as TC/P. 1015 [Pl.7], 1016 [Pl.8] and 1017 [Pl.9]. Two of these (TC/P.1015, TC/P.1017) have a flat base instead of legs. This is considered to be a sure indication that the models represent aquatic birds floating on water. EVANS (1971:63-64) calls them 'sitting birds (?ducks)'. Such representations seem to be consistent with the fact that Malta and Gozo (Ghawdex) are both islands and indicate that early man was more familiar with water birds.

TC/P. 1015 (see EVANS, 1971:161; Pl.57, fig.12). [here Pl.7]. This model is a buff, hard-fired clay ware with burnished surface (L. 64mm, W. 17mm, H. 35mm) representing a bird with a large thick beak (duck) decorated with two parallel, deeply incised rings round the neck (possibly a mallard) and two parallel zig-zag lines along the sides. The areas beyond the zig-zag lines are filled with horizontal shark's tooth decoration. As no bird with such zig-zag markings is known to visit the Island now, it is presumed that the artist took the liberty of decorating his stylized bird according to his liking. A narrow hole from top to bottom pierces the specimen for threading in a necklace. Shark's tooth decoration is both an ingenious and an aesthetic device and has been adopted by early man in Malta to decorate not only this bird model but also household pottery vessels like the two-handled jug TC/P.47, and the double-vase TC/P. 91 (see also EVANS, 1971, Pls. 54, 55, 56). Early man's collection of fossil sharks' teeth to decorate with their serrated edge some of his clay artifacts, makes him not only one of the earliest local artists, but also the earliest collector of Maltese fossils on the Island.

TC/P. 1016. [here Pl.8] (see ZAMMIT, 1916:137; Pl.XVI fig.3, no.5; EVANS, 1971:161, Pl.57, fig.13); This avian representation (L. 58mm, Breadth. 14mm, H. 25mm) is a polished small figurine of a legless bird in brown clay with four well marked white vertical lines on its neck. It was found by Zammit in 1915 amongst the numerous contents of a large cinerary urn from Tarxien Cemetery. It is pierced from top to bottom for threading in a necklace or for fixing on a rod. Unlike the previous miniature avian earthenware models, its base is not flat, thereby indicating that it is not an aquatic bird. The shape of the bird with its

typical crouched position (masking the legs) and its surface decoration - represented by painted rings on neck, cross hatching with deep grooves on back and convex-upward grooves on wings - suggest a European quail (*Coturnix coturnix*, *Summiensia*). Locally, the quail is still an abundant spring and autumn migrant that, on some occasions, reaches the Island in large numbers in April and September.

TC/P. 1017 [Pl.9] (see . ZAMMIT, 1916:137; Pl.17 fig.1; EVANS, 1971:161; Pl.57, fig.14). This specimen is a dark ware (L. 67mm, W.21 mm, H. 27mm) with a shiny surface, a flat base and without any decoration. It has one vertical hole through the body and a transverse one through the neck for suspension. It was likewise unearthed by Zammit from the ashes of a cinerary urn at Tarxien Cemetery. The body shape and the undeveloped beak of this stylized bird could possibly be features of a Grebe (*Podiceps*, *Blongos*), whilst the slate-black colour could possibly be an indication of a Coot (*Fulica atra*, *Tigiega tal-Baħar*). Both birds are regular autumn and winter settlers at the bird sanctuaries at Ghadira (Mellieħa) and at is-Simar, Pwales (St Paul's Bay), Malta.

• *Hal Saflieni (Pawla/Raħal Ġdid)*.  
(3300-2500 B.C.)

From the Hal Saflieni Hypogeum - that impressive labyrinth of underground passages and chambers cut at three different levels in the soft Globigerina Limestone over an area of about 500 sq.m. - Zammit recovered a number of interesting bird pendants. The age of these finds varies considerably as the associated pottery is referable to various phases of Maltese Prehistory. These range from the Malta-Temple-Building Period (Copper Age) to the Bronze Age (c. 3000 to 2000 years ago). The bird representations are now registered at the National Museum of Archaeology in Valletta respectively as S/B 4, S/S 7 and S/S 8.

S/B 4 (see EVANS, 1971 : 63; Pl. 37 fig. 9). Under this same registration number are confusingly included nine miniature models of birds [Pl.10] that have a flattened base with a V-perforation for suspension/threading, a hunched back and a long conical neck with a small head and beak. Others lack evidence of a head configuration [Pl. 11, Pl.12]. Only one has eyes marked [Pl.13]. Maximum length of the birds is 30mm (min. 11mm), whilst max. height without neck is 15mm (min. 9mm).



Plate 01

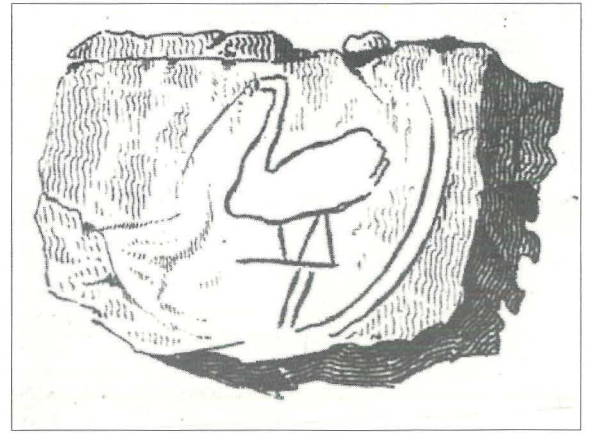


Plate 02



Plate 03

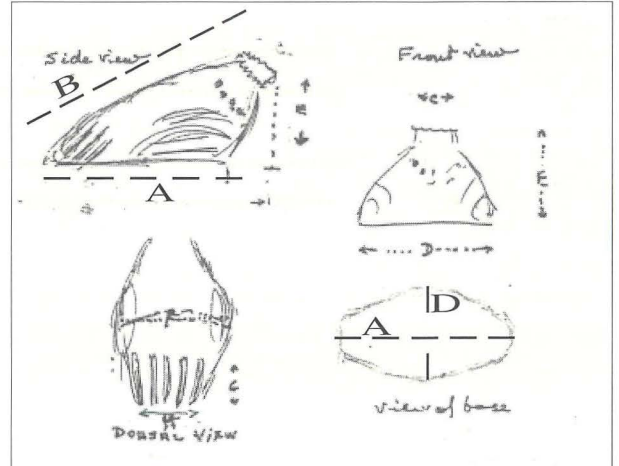


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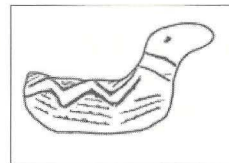


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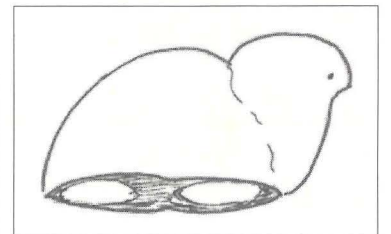


Plate 05



Plate 06

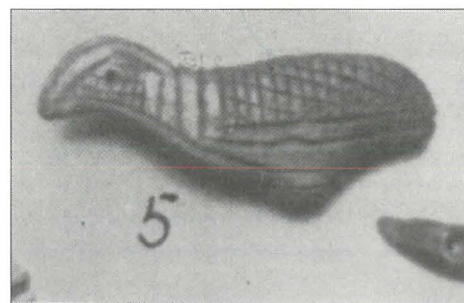


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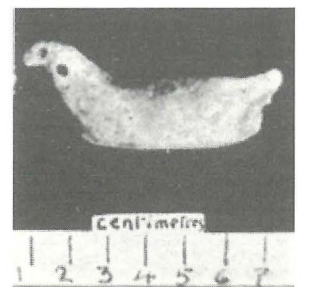


Plate 09



Plate 10



Plate 12



Plate 11



Plate 13



Plate 15



Plate 17



Plate 16



Plate 14



Plate 18



Plate 19



Plate 20



Plate 21



Plate 22



Plate 23

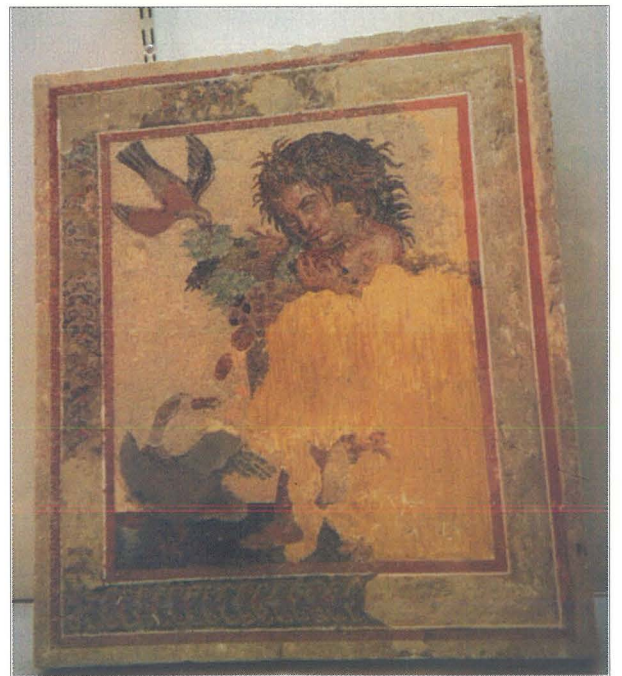


Plate 24

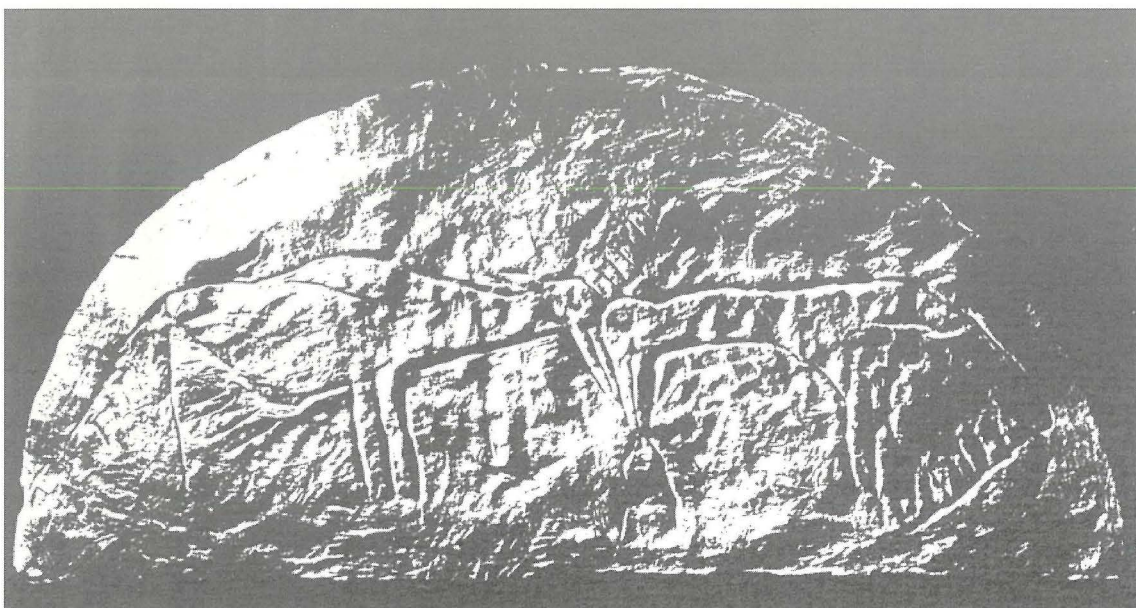


Plate 25



Plate 26

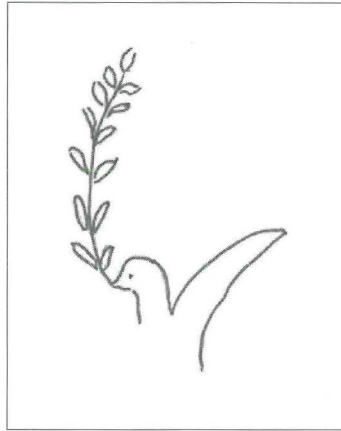


Plate 27



Plate 28

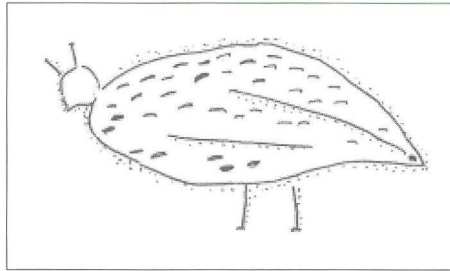


Plate 30



Plate 29



Plate 31



Plate 33



Plate 32

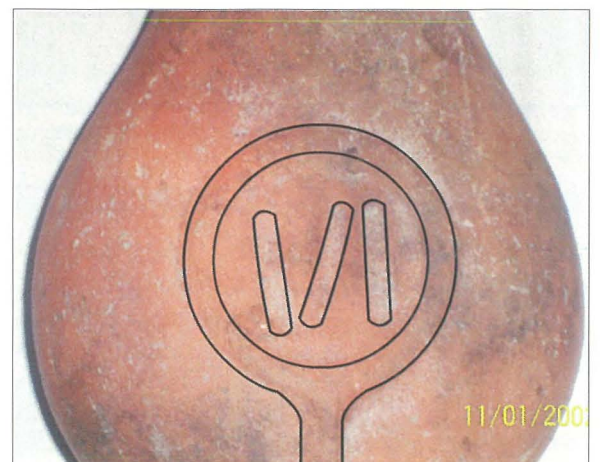


Plate 34

On the basis of their laminated structure, Zammit and Evans maintain that these miniature models were carved out of the layered shell of *Spondylus gaederopus* L. (Thorny oyster, *Gajdra*). This is an edible Mediterranean shallow-water bivalve that was formerly much more common on bottoms of Maltese harbours. Up to a couple of decades ago, this oyster could be collected close to shore (e.g. St Paul's Bay), but in recent years pollution of harbour waters has pushed the mollusc further out to sea or exterminated it completely from some areas.

The much softer bone of cuttle-fish (*Sepia*, *Sicča*) would, undoubtedly, have provided a much more easily acquired source material for prehistoric man, for the cuttle bone floats to shore and gets stranded on sandy beaches. As it is very easy to work, the cuttle bone was formerly used by jewellers to cast gold wedding rings featuring the 'clasped hands' (fidelity emblem or 'Zammit' emblem). Miniature 'birds' made from cuttle bone would likewise have had a layered structure, but they would have been much lighter and, probably, less durable.

S/S.7 [Pl.14]. This highly stylized bird pendant in well-polished hard green stone (L. 27mm, H. 24 mm) resembles some of the aforementioned models in the S/B. 4 group in having a long thick conical neck, small head, crouched body and the V-perforations in its flat base (see EVANS, 1971, Pl.37, fig.9). It bears nine enigmatic 1mm deep drill holes: four on back, four on neck and one on head.

S/S. 8 [Pl.15]. (see EVANS, 1971:64; Pl.37, figs.10) is a bird-pendant (L. 22mm, H. 17mm) with a large round head, short neck, a convex back and a flat base suggesting a floating aquatic-bird resembling a *duck*. It has no V-perforations but is pierced transversely by a hole through the lower part of its sides just above base. It is carved out of an almost flat pebble that is half hard green stone and half soft white stone. Such source material is not of local origin as no such green stone exists locally.

• *Punic Period (c. 7th - 4th centuries BC).*

Prehistoric temples have been the greatest source of local avian representations, mainly in the form of miniature models of birds perforated for suspension or threading in a necklace as a personal ornament. Punic (Phoenician) tombs,

too, have contributed some items of interest, but these are mainly in the form of amulets featuring the bird *Ibis* and the Falcon as a representation of the deities Thoth and Horus respectively. A small faience amulet, perforated at its upper end and said to represent Horus and Thoth, was recovered from a site at I-Iklin, Malta. [Pl.16]. Amulets of this type occur commonly on Phoenician-Punic sites (GOUDER, 1991: 8)

In 1887, Patri Manwel Magri S.J. recovered, from a tomb at *Tal-Ibraġ* (l/o St Andrews), a small amulet in stone bearing the image of an *Ibis*. As this talisman, an imitation of an Egyptian glazed pottery amulet, was not associated with datable material, it was not possible to have it dated precisely. On the basis of the tomb where it was found, however, it is attributable to the Punic (Phoenician) occupation of Malta (7th - 4th century B.C.)

From still another c. 7th-6th century B.C. Punic tomb located at *Għajn Klieb*, west of Rabat, the Museum authorities recovered also a rare and valuable composite amulet [Pl.17]. (see also GOUDER, 1971:311-312, fig.1; 1991:12-13). This consisted of two 25mm long gold amulets each in the form of a human figure, welded together back to back at some time in the past. One figure has the head of a falcon (a representation of the Falcon-headed deity Horus) whilst the other has a jackal's head (a representation of the Jackal-headed deity Anubis - the Lord of Cemeteries). The two deity representations were welded together presumably for better protection of the deceased person during his voyage to the Underworld.

In 1968, the National archaeological heritage was enriched further by a donation from the Hon. Dr Daniel Micallef of a very rare 6th century B.C. This 48 mm-high Phoenician Falcon-headed bronze amulet-sheath symbolizing the deity Horus contained a rolled up papyrus sheath fragment (c.7 sq.cm.) with a Phoenician inscription and the image of the Egyptian goddess Isis [Pl.18] (see also C.G. ZAMMIT, 1970: 9, A.R.M. for 1968; GOUDER, 1971:313-315, fig.2 and 1991:13). It is the cylinder's cap or cover that is shaped externally in the form of a falcon's head representing Horus. This is surmounted by the solar disc and wears the rearing '*uraeus*', or sacred hooded cobra of ancient Egypt, an emblem of royalty. It was discovered in

a Punic tomb at *Tal-Virtù*, Rabat, when construction works on Dr Daniel Micallef's villa accidentally penetrated, and destroyed, the grave.

The deity Horus, considered to be the chief physician of the gods and the symbol of the face of heaven by day, was represented by the Egyptians as a hawk or a human body with the head of a hawk. Thoth (Thout/Tahuti) was the Moon god and was represented by the Egyptians as having had a human body with the head of an *Ibis*. No such representations have been forthcoming from Maltese archaeological sites, where the deity is invariably represented by the bird *Ibis*.

Thoth was attributed with the possession of every kind of knowledge and hence considered to have been the inventor of letters, numbers, languages, arts and sciences - including medicine, botany, astronomy and architecture. His super-knowledge made him the greatest of magicians and healers and probably explains why his amulets are extremely common in Punic tombs throughout the Mediterranean (JAYNE, 1962:79-83).

Another interesting find was made in a tomb at Ghajn Qajjet, near Rabat, Malta. The treasure trove consisted of an imported Rhodian bowl bearing a neatly prepared image of a goose-like avian representation on its outside. [Pl.19]. The bowl is an imported Greek vessel of the 7th century B.C. and has acquired particular importance as it has helped to assign a more precise dating to the Phoenician material associated with it in the tomb (GOUDER, 1991:9, 12).

• *Roman (218 B.C -535 A.D.) and Early Christian Period.*

*The Annual Report of the Museum Department* for the financial year 1912-13 records the discovery, by a local farmer, of a series of well-tombs at a site known as *Taċ-Ċaġħki*, limits of Rabat. Over 48 of these rock-cut tombs and a small catacomb were investigated at this site by the Museum Dept. in 1912-13 (ZAMMIT, T., 1913), 1950-1951 (BALDACCHINO, 1954) and in 1968 (ZAMMIT, C.G., 1970). During early Roman times, this site must have been a vast necropolis. Among the fragmented human remains and the funerary objects contained within one of these tombs (1913) was an amulet (25mm x 15mm) in the shape of a dorso-ventrally flattened bird with semi-outstretched

wings [Pl. 20]. It was made of a light ruby-coloured resinous substance and had a hole at its middle for suspension. In 1995, the amulet could not be located in the local Museum of Archaeology and, as no mention of it is made by EVANS in his monumental *Prehistoric Antiquities of the Maltese Islands* (1971) - wherein he recorded all the archaeological material then available at the Malta National Museum of Archaeology - it is to be assumed that it was already not available for study at that time.

Dr T. Zammit, then Curator of Archaeology at the Valletta Museum describes the bird-amulet as being 'in the shape of a pigeon' (ZAMMIT, T., 1913:9). The illustration, which he himself prepared for his *Annual Report*, shows, however, the characteristic skull, beak and wing features of a Hawk or Falcon [Pl.20].

When in 1951, Dr Baldacchino investigated this same site, he recovered, from rock cut tomb number 23 in the grounds of the Government Elementary School, Rabat, a damaged terracotta representation of another bird (BALDACCHINO, 1954:vi-vi). As no illustration, description or Museum Registration number is given, this item, likewise, could not be identified with any certainty.

At the Museum of Roman Antiquities at Rabat, popularly referred to as 'The Roman Villa', there are, associated with other exhibits from *Taċ-Ċaġħki* tombs, two roughly made terracotta figurines each about 10cms high. They represent respectively, a cock [Pl.21] and a hen [Pl.22]. No specific reference to these two terracotta figurines could be found in the *Annual Reports of the Museum Department*.

In Roman times, the rearing of domestic animals was very common, and a more refined representation of a closely similar cock, in the form of an *oinochoe*, was recovered from Pompei (PAOLUCCI, 1999:41 fig.). From 4th Century onwards, terracotta statuettes were very popular. The chief function of these mostly hand-made naturalistic statuettes, especially those found in tombs of the earlier period, was Votive. Notwithstanding that the above-mentioned local terracotta representations, prevalent motifs in the period c.900 - 500 BC, now carry no trace of paint, it is generally held that such objects were originally *all* painted.



In the richly decorated town house which now houses the Museum of Roman Antiquities at Rabat, there is a pavement of mosaics consisting of a polychrome, three dimensional representation, with two 'doves' perched on the rim of a bowl, decorating the central panel or 'emblema' [Pl.23]. In fact, the composition, is almost identical to a mosaic now in the Capitoline Museum, Rome, major differences being in the position and number (four instead of two) of the birds. It is a well-known fact that some paintings and mosaics of Roman times are copies of famous Greek originals and this one reproduces a large composition by the celebrated Greek painter, Sosos of Pergamon (RICHTER, 1974:280 fig.394).

In the damaged emblema of an Early 1st Century B.C. mosaic in a nearby room, commonly held to represent an allegory of Autumn, a polychrome dove in flight decorates the left upper angle, whilst a perched duck fills the underlying corner [Pl.23]. Doves, like fish, were common decorative features in Roman floor mosaics and it is probable that the above-mentioned avian representations have no symbolic significance but are merely decorative motifs that contribute to fill and balance the picture (see GOUDER, 1983, figs. 3, 8).

The Early Christians likewise adopted avian representations in their long list of symbols. A very popular one is the pelican which, according to popular opinion, feeds its young with its own flesh. This is generally said to be a representation of the generosity of Christ in the Holy Eucharist. Hence the presence of the bird sculptured in marble on the front of the altar of the Chapel of the Blessed Sacrament at St Helen Basilica, Birkirkara.

The deeply incised avian representation of two big birds feeding their chick on the Globigerina Limestone columned portico at the Hal Resqun necropolis, located in Gudja in the vicinity of the Malta International Airport, have recently been the subject of a debate [Pl.24]. Presumably on the basis of the feeding scene, Zammit (1935) and Trump (1972) identified the birds as pelicans. Buhagiar (1992:170, 171, Fig.18a; 1998:227, 237 Fig.14) accepts Zammit's interpretation with some reservation as 'one of them wears a branched horn like a stag's antler, while the other one has an apparent tail and four legs'. The birds however have very little physical resemblance to pelicans, and Fenech (1997:145) is more critical, arguing that 'the

shape of the birds, their posture as well as their long neck and legs are more suggestive of cranes'. Cranes, tall wading birds superficially resembling herons, are now regular migrant visitors to Malta and have been visiting the Island since the Ice Age. Their presence in Maltese Pleistocene deposits was initially recorded by Lydekker (1890) and confirmed recently by Harrison (1979) and Northcote (1982, 1985).

As Mifsud & Mifsud (1997:159, footnote 166) attribute a Palaeolithic age to Hal Resqun, they speculate that the engraving in the arched space above the entrance was carried out by Palaeolithic man, and as Palaeolithic man generally always drew animals in his environment, they postulate that the avian representation is that of two extinct Maltese Pleistocene cranes, *Grus melitensis*. A plaster cast of this Hal Resqun engraving is preserved in the stores of the National Museum of Archaeology in Valletta [Pl. 25]. Further representations of the pelican in medieval times are dealt with under 'Medieval votive stone slabs'.

The white dove has always been a universally-accepted symbol of the Holy Spirit and of peace if the bird is carrying an olive branch. A number of 3rd Century frescos found in the Catacombs of St Agatha, in Rabat, Malta, represent birds among which figures prominently a dark coloured chubby 'dove' with a raised leg holding an olive twig between its toes. A number of birds in flight are seen in the background [Pl. 26] (see also CAMILLERI, 1984:41, 42, 43, 46, 47; BUHAGIAR, 1992:157 Fig.14, 161; 1998: 235, Fig.11).

From the nearby Catacombs of St Paul, Buhagiar (1998: 236 fig.12) reproduces a fresco figuring a typical dove in flight carrying, in its beak, a small twig that is blooming at its tip [Pl.27].

Two other birds [Pl. 28, Pl. 29] are recorded from two frescos in St Agatha Catacombs. The paintings decorate the upper triangular space on the front of either side of the arched opening of a baldacchino type Early Christian tomb. The high legs of the birds exclude their being representations of a 'pelican' as recorded by Camilleri (1984:40) or of a 'dove or quail' as suspected by Buhagiar (1998: 225). The elegant shape of the left bird (Pl.28), its relatively short neck, high legs and moderately

long, pointed beak are more suggestive of a wader like the *pespisella* (Sandpiper), locally seasonally common. The artistry shown in this painting is by far superior to that shown in Pl.29 and suggests a different hand. The latter bird has a stout head with a strong, straight beak, a thick, long neck with a constriction at its base, a fairly stout body and long legs.

From Catacomb 3 of the so-called 'St Paul/St Agatha' Catacombs at Rabat, Buhagiar (1998:327) records two other avian representations. Both birds have their outline infilled with red ochre paint. One of the birds is apparently an 'unfinished symphony' of a stylized bird with long legs, large eyes and an incomplete beak. The other painting [Pl.30] represents a small-tailed large bird having two long projections over the head and several blotches of red ochre and charcoal blue paint on the body. The 'head gear' and the numerous body markings, possibly representing the characteristic 'eyes' seen on male peacocks, are suggestive of that bird. The lack of the typical long tail, however, make the avian representation, look more like that of a Guinea fowl (*Farawn*) than of a male peacock (*Pagun*).

#### *Medieval (Late Middle Ages) Votive Stone Slabs*

The Museum of St. Agatha possesses 89 medieval votive stone slabs, 19 of which are attached to the facade of the small Church overlying the St Agatha Catacombs at Rabat. They were inserted there in 1670, possibly for preservation, when the previous chapel, erected in 1504, was partially demolished. They probably formed a frieze in the old church. Two of the artifacts are dated '1504', the date when that old church was originally built (Camilleri, s.d. [1984], page 2). More than 20 of these votive slabs figure avian representations, some with the unmistakable symbolic pelican in the attitude of plucking its breast/body to feed its chicks [Pl. 31], figured by Camilleri, s.d. [1984], p.18, slab no.40; see also p.17, slabs nos. 38, 39).

#### *Oil lamps*

Amongst the large number of oil lamps housed in the Museum of Roman Antiquities, likewise at Rabat, there is one item that deserves special attention [Pl.32]. It is marked *M 57* and is said to be Byzantine, c.2nd Century A.D. It carries on its dorsal concavity (*discus*), the relief figure of a full-bearded old man holding a stick on his left and an eagle with outstretched wings and with head turned

to its right standing in front of his bust. The old man represents Zeus, the mythological god of the heavens, whilst the eagle is his characteristic emblem, which in Semitic mythology represents the sun god that was victorious over the powers of darkness and the underworld. The oil lamp, which is made of a light brown terracotta, lacks any inscription, bears two wick nozzles and has two air holes drilled in the discus — one in either wing.

Relief lamps having a discus decorated with mythological, religious, animal or floral themes were very popular in Italy in the middle years of the 1st century A.D. and continued being so until about the 6th century (BAILEY, D.M., 1972:22). The Department of Greek and Roman Antiquities of the British Museum, London, possesses a larger oil lamp (Lamp 1048, made in Italy during 1st Century A.D.) that bears an identical relief image of Zeus and his eagle. This however, is a single-nozzled and single-holed specimen (see BAILEY, 1972:30, Pl.10b).

As early as the 17th century, certain individuals, like Fra Gian Francesco Abela (1582 - 1655), author of the earliest history of the Maltese Islands, showed great interest in local archaeological finds and made extensive collections of such important material. Many of the objects which he had collected were acquired by the Order and placed for public viewing at the Public Library in Valletta. They later formed the nucleus of the Malta Museum of Archaeology which, in 1908, had its official origin in Xaghra Palace, Valletta — a building opposite St. John's Co-Cathedral. It is said (G.A. CIANTAR, 1772:173, quoting ABELA, 1647) that among the many items in Abela's collection there were oil lamps from an unstated locality bearing the stamped image of a Peacock (*Pagun*).

Peacocks do not figure on the list of local birds, but to the early Christians, irrespective of their nationality, the bird symbolized, not only the beauty, but also the immortality of the soul. Their conviction was based on the belief that once dried, peacock's meat - like the human soul - was incorruptible. The imagery of the peacock in Malta, like that of the pelican, is undoubtedly borrowed from other countries. The oil lamps bearing such an image, however, could possibly have been of local origin as this exotic bird is apparently

suspected to feature in the iconography of the Maltese rock-tombs and modern churches.

Abela's oil lamp is not figured, consequently, it is not possible to state whether the avian representation was actually that of a peacock or a layman's misidentification of some other bird. In fact, no such bird has ever been reported in literature of oil lamps in any museum of antiquities.

In the author's collection there is a single-nozzle oil lamp in red-slipped terra sigillata, max. length 129mm, max. width 76mm, which bears on its disc the right lateral view of a large dove or pigeon facing backwards towards the pinched handle of the oil lamp [Pl.33]. In its small beak, the large-eyed bird carries a stalked triangular object — apparently a bunch of grapes. In Christian lore, the bunch of grapes symbolises the wine of the Eucharist and therefore the blood of Christ. The tail of the bird is slightly fanned and the narrow wing tips arch over it. The bird is decorated all over with lines and rows of globules in relief — on wing, chest, tail and neck, where they form a collar. The lamp has marked evidence of having been used for the red colour of its 20 mm - wide round nozzle is altered by fire. It lacks inscriptions but has a peripheral canal decoration consisting of a row of three different motifs on either side — a horizontal modified S-spiral proximally, a median unit of concentric rings and a distal four-petalled flower. The disc is perforated by two circular 7mm air-holes whilst the lamp is stamped with a trade-mark on its underside [Pl.34]. This is in the form of three deep canals (width c.3-4mm, length 12-15mm) arranged vertically in a row so that the outer ones are parallel and the middle one leans obliquely to right (I / I), all within a 5mm-thick raised circle whose external diameter is 38mm. A raised rib extends posteriorly from the circle and is ultimately incorporated in the pinched 'handle'.

Its Maltese archaeological history is not known but Prof. Mgr Vincent Borg and Prof. Anthony Bonanno both agree that the ware is undoubtedly a palaeochristian North African oil lamp dateable to late 5th or early 6th century (Personal comm., 2002). Mgr V. Borg has kindly provided me with comparative illustrations from Abdelmajid (1976) and from Trost and Hellman (1996). None of the illustrations are identical to my specimen, but the 'Tunisian' lamp from the Musée du Bardo et de

Carthage illustrated by Abdelmajid Ennabli on Pl.XXXI, fig.590 likewise shows a bird with a bunch of grapes in its beak. The peripheral decoration, however, has four (not three) motifs on each side. Two of them (both similar to those on my lamp) are duplicate. The third decoration involving concentric circles is lacking in Abdelmajid's figure.

Some similarity was noted also to a Hayes Type II African Oil Lamp figured by Trost & Hellman (1996) as fig. 87 on Pl.XI. The similarity, however, is again limited to the bird, which likewise carries a bunch of grapes in its beak. The peripheral decoration is completely different.

In this connection it is interesting to record that Hayes believes that the similar collection of bilicin lamps at the Roman Villa in Rabat is not Tunisian, but Tripolitanian (Personal comm. Mgr V. Borg, 12/6/02).

#### *Conclusion and Comments*

Prehistoric cave paintings in other parts of the world show that Early Man attributed considerable *symbolic significance* to human and animal figures. In Malta, no prehistoric cave paintings of birds have, as yet, been discovered. In much later times, however, representations of certain birds and animals formed an important and interesting part of the religious symbolism of the Early Christians. It is consequently to be presumed that the considerable number of avian representations encountered in Maltese archaeological sites likewise had a symbolic significance. After all this length of time, however, we cannot now really appreciate or even interpret such representations.

The perforated tiny bird models found at the Tarxien Cremation Cemetery show that in the Maltese Islands, prehistoric Man adopted avian representations mainly for personal ornamentation. or for personal protection through the supernatural powers of the deity represented on the amulets. Some, like the larger bird model from Mnajdra, were prepared for decorative purposes. Others, like the *Ibis* on a stone slab at Ġgantija are just an expression of an artistic feeling rather than a representation of Thoth the god of Death. In addition, love of nature and appreciation of the aesthetic beauty of birds in the wild can be seen in

the dynamic representation of a number of crested birds in various flight positions incised on a five thousand year-old pottery-bowl fragment from Ġgantija. In this case, Prehistoric Man manifested evidence of great artistry to the extent of outlining each bird with gypsum.

The artist who drew the stylized figures of these crested birds can be considered to have been one of the earliest bird watchers on the Island, for he observed and represented them in various flight-positions. He noted such details as the posterior drag of the hanging feet soon after take-off, and the arching of their wings when in flight. The man must have seen the birds with his own eyes, either during his stay on the Island or before reaching it. Were it not for the discordant short beak and the very long head plume, the birds could possibly represent cranes (*Grus grus*, *Gruwwa*) or else a flock of Large Grey/Purple Herons (*Ardea cinerea / purpurea*, *Irsieset*, *Gherienaq*) or of the smaller Night Herons (*Nycticorax nycticorax*, *Kwakk*) — a representation of which has recently figured on a local postage stamp set. All three heron species are still common visitors to the Island and, as represented in the drawing, these birds fly in flocks, generally in an inverted V-formation, slowly beating and arching their wings as shown in the incision. (Pl.3). With their short beaks, very long head plume and longish tail, however, the stylised birds resemble no known species now visiting the Maltese Islands.

Bird representations have been recorded from practically all the periods of archaeological time in Malta — including the Neolithic, Temple-building Period ('Copper Age'), Bronze Age, the Phoenician (Punic) occupation of the Island, the Early Christian Period and Roman Times. Avian representations have been encountered mainly at Ġgantija and 'Brochtorff Circle' (both in Xaghra, Gozo), Mnajdra (Qrendi), Tarxien Temples, Tarxien Cemetery and Hal Saflieni Hypogeum (Pawla), in the Punic tombs at Taċ-Ċaġhki (Rabat), Tal-Virtù (Rabat), Ghajn Klieb (Rabat), l-Iklin, Ta' L-Ibrag (St Andrews), and Tal-Horob (Xewkija, Gozo); in the ?Early Christian Catacombs at Hal Resqun (Gudja) and at Rabat (St Agatha, St Paul) and at the Roman Villa (Rabat).

From Ġgantija, Gozo, are recorded the Gypsum-inlaid incision of birds in flight and the figure of an *Ibis* on a Globigerina Limestone block. The larger unperforated miniature water-bird model from the Mnajdra megalithic site probably served as a votive offering or as a household decoration. Avian representations sculptured on pottery or prepared as amulets in baked clay or in faence have been recorded mainly from Tarxien, whilst most of the early representations from Hal Saflieni are stylized miniature molluscan-shell, stone or terracotta models of ducks and other floating water-birds. They are perforated for suspension or threading in necklaces as personal ornaments or amulets.

The portrayal of stylized birds on pottery was probably merely an artistic or aesthetic contribution, whilst the perforated or unperforated miniature terracotta models, which are thought to have served as personal ornaments or household decorations, could also have been used as protective amulets or talismans. As the *perforated* miniature bird models are somewhat similar to the Russian earthenware whistles figured by Buchner (1980:286, Pl. 354), a special investigation was carried out to exclude their being prehistoric Maltese whistles. British Museum exhibits show that larger 'Bird call' whistles, were not rare in nearby Italy. The large number of protective amulets recovered from local archaeological sites, particularly Punic tombs, reveal that ancient races inhabiting the Island of Malta were very superstitious. For protection, they often resorted to safeguards or amulets. Some of these birds featured as deity representations - the glossy ibis representing the deity Thoth and the falcon's head representing the deity Horus. Both deities are Egyptian gods, for it should be remembered that Phoenician rulers carried with them throughout the Mediterranean, not only Egyptian wares, oriental customs and lore, but also their deities.

The birds represented in Maltese archaeological finds include:

Ibis — as an incised figure on a Globigerina Limestone block from Ġgantija and as an amulet in stone from a Punic tomb at Ta' l-Ibrag;  
crested birds in flight (?cranes, ?herons ?night herons) — as incised figures from Ġgantija, Gozo;  
aquatic birds — as miniature models from Mnajdra and Tarxien megalithic Temples, Tarxien

Cremation Cemetery and especially from Hal Saflieni Hypogeum;  
 partridge or quail — as a pottery decoration from Tarxien Megalithic Temples;  
 European quail — as a miniature model from Tarxien Cremation Cemetery;  
 hawk/falcon — as an amulet in ruby coloured resinous substance from Tač-Ċaghki well tombs, as a gold amulet, as a faence amulet from Phoenician- Punic site at I-Iklin, and as a bronze amulet-sheath from Punic tombs on the outskirts of Rabat (Malta); cranes  
 — as deeply incised paintings at Hal Resqun Catacomb;  
 goose — as a decoration on an important 7th century Greek bowl from Ghajn Qajjet, Rabat.

The record of avian representations as religious symbols comes mainly from Rabat (Malta). These include mainly frescos featuring ‘pelicans’, doves and other unidentified birds at St Agatha Catacombs as well as the Medieval votive stone slabs at St Agatha. The latter feature, in relief, eagles and other avian representations, including the symbolic pelican plucking its breast or body to feed its chicks. There is now much doubt about the nature of the birds incised on the stone wall over the arched entrance of the 3-4th century Early Christian Catacombs at Hal Resqun Catacombs (Gudja). If the engraving represents pelicans, then the ‘artist’ had absolutely no idea of the physical appearance of these birds.

Lamps formed a large proportion of the votive offerings at certain shrines, but in Malta oil lamps are generally associated with funeral furniture. In addition to the record of impressions of what has been described as a ‘peacock’ and of a highly decorated ‘pigeon’ on an oil lamp from an unstated locality and of a painting in the Sts Paul/ Agatha necropolis, there are also representations of other birds, mainly doves, as *decorative elements in floor mosaics* from the Roman town house in Rabat (Malta).

Whatever the reason for their preparation or the medium used in their manufacture, these avian representations — symbolic, stylised or otherwise — are a sure indication that birds had an important place in the culture of the earlier inhabitants of the Maltese Islands.

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### Bibliographic references

- ABDELMAJID ENNABLI (1976). *Lampes Chrétiennes de Tunisie (Musées du Bardo et de Carthage)*. Editions du Centre National de la Recherche Scientifique, Paris, 1976.
- ABELA, G.F. (1647). *Della Descrittione di Malta isola nel Mare Siciliano, con le sue antichità, ed altre notizie, Libri quattro*. Malta, Paolo Bonacota, 1647, 573 + 16 pp., illus., maps.
- ASHBY, T. (1924). Supplementary excavations at Hal Tarxien, Malta, in 1921. *Antiquaries Journal*, 4 : 95-96. London.
- BAILEY, David M. (1972). *Greek and Roman Pottery Lamps*. The British Museum, 32 pp,+ 20 pls (4 col.), London.
- BALDACCHINO, J.G. (1954). ‘Rock tombs at tač-Ċaghki, Rabat’ In: *Annual Report on the Working of the Musum Department, 1951-52* : v-vi, Malta, 1954.
- BROCHTORFF, C. de (1849). *Series of forty-nine coloured Drawings comprising Views of the Island of Malta, its Harbours, Fortifications, Arsenal, and Public Buildings with the interior of the richly ornamented Cathedral Church of St. John, Costume of the Inhabitants etc., also Twenty-one Drawings of the Druidical Remains discovered in the Island of Gozo. The whole drawn on the spot by C. de Brochtorff*. London, South Lambeth, June 1849. [National Library, Valletta, Ms. 1161].
- BUCHNER, Alexander (1980). *Colour Encyclopedia of Musical Instruments*. Translated by Simon Pellar. Artia, Prague 1980, 352 pp., 414 pls. Artia for Ilamlyn Publishing Group Ltd, London, New York, Sydney, Toronto.
- BUHAGIAR, M. (1992). The Maltese Palaeochristian Hypogea - A reassessment of the Archaeological, Iconographic and Epigraphic source material.

- In: R. Ellul Micallef and S. Fiorini (eds.) *Collegium Melitense Quatercentenary Celebrations (1592 - 1992) Collected Papers* contributed by Members of the Academic Staff of the University of Malta, pp.133 - 202, text figs. 1-24.(esp.)
- BUHAGIAR, M. (1998). The iconography of the Maltese Rock-Tombs Punico-Hellenistic, Paleo-Christian and Byzantine, *Melita Historica* 12 (3) : 223 - 238, 17 text figs. (esp. Pp. 225- 228; figs.10-14)
- CAMILLERI, V. J. (1984). *Saint Agatha. An Archaeological study of the Ancient Monuments of St. Agatha's Building Complex: Crypt, Catacombs, Church and Museum.* An M.S.S.P. Production, Rabat, Malta. x,133 pp.,[94] illus., [23] figs.
- CAMILLERI, V.J. (s.d.) [=1984]. *Ex Votos. Medieval 'Votive slabs' in St. Agatha's Museum, Rabat.* 40pp., 106 illus. s.d [1984], Malta.
- CIANTAR, G.A. (1772, 1778). *Malta Illustrata, ovvero Descrizione di Malta isola nel mare Siciliano e Adriatico ... corretta, accresciuta e continuata dal Conte Giov. Ant. Ciantar.* Malta, Palazzo di S.A.S. per F.G. Mallia, 2 vols. (1772, 1780).
- COWARD, T.A. (1953). *The Birds of the British Isles and their Eggs. Revised by A. W. BOYD.* Vol. II (Anatidae to Phasianidae). The Wayside and Woodland Series, Frederick Warne & Co. Ltd, London & New York. Reprint of 8th ed. (1950). 384 pp., 157 pls.
- EVANS, J. D. (1959). *Malta. Ancient Peoples and Places Series* (Gen. Ed. Dr Glyn Daniel). Thames & Hudson, London,255 pp., 97 pls (photographs), 33 line drawings, 2 maps, 1 tab.
- EVANS, J. D. (1971). *The Prehistoric antiquities of the Maltese Islands.* The Athlone Press, Oxford, ix, 260 pp., 45 plans, 67 figs., 70 pls.
- FENECH, N., (1997). *Bird shooting and trapping in the Maltese Islands - some socio economic, cultural, political, demographic and environmental aspects.* Unpublished Ph.D. thesis, Department of Geography, Durham University , 1997. 448 pp., text figs.
- FISCHER, K-H & STEPHAN, B. (1974). Eine Pleistozäne Avifauna aus der Ghar Dalam-Höhle. *Z. geol. wiss.*, 2 (4) : 515-523. Berlin.
- GOUDER, T.C. (1971). Some amulets from Phoenician Malta, *Civilization, ...* :311-315, 7 illus. Malta;
- GOUDER, T.C. (1983). *The mosaic pavements in the Museum of Roman Antiquities at Rabat, Naklta.* Department of Museums, Malta. 11 unmarked pp., 14 unmarked figs., Government Printing Press, Malta.
- GOUDER, T. C. (1991). Malta and the Phoenicians. *Lombard Bank (Malta) Ltd., Annual Report 1991*, 20 pp., [30] illus (w/n).
- HARRISON, C.J.O. (1979). The extinct Maltese Crane.*Il-Merill*, (20) : 14-15, Malta. Jan-Dec. 1979.
- JAYNE, W.A. (1962). *The healing gods of ancient civilizations.* University Books Inc., New York. xxi, 569 [3] pp., 6 illus..
- LANGDON, S.H. (1964). *Semitic Mythology The Mythology of all Races*, 13 volumes, Edited by John Arnott Mac Culloch. Vol.V. *Semitic*, xxi, 454 pp., 102 figs. New York, Cooper Square Publishers, Inc.
- LACROIX, F. (1851). *L'Universo o Storia e Descrizione di tutti I Popoli, ec. Loro Religioni, Costumi, Usanze, ec.: Malta ed il Gozzo di Federico Lacroix (dell' Isola di Francia).* Prima versione Italiana, Venezia, 1851. (Edizione originale, Paris, 1848). 191 pp., 41 [badly marked] engraved plates.
- LYDEKKER, R. (1890). On the remains of some large extinct birds from the cavern deposits of Malta. *Proceedings of the Zoological Society of London*, 1890 : 403-410.
- MIFSUD, Anton and MIFSUD Simon (1997). *Dossier Malta. Evidence for the Magdalenian.* xi, 212, 10 pls, Proprint Co. Ltd., Mosta, Malta.
- NORTHCOTE, E.M. (1982). The extinct Maltese Crane, *Grus melitensis.* *Ibis*, 124 : 76 - 80 3 figs, 1 tab, 1 pl. (Pl.6).
- NORTHCOTE, E.M. (1985). The giant Maltese Crane. *Il-Merill*, 1984-85, 23 : 1-4, The Ornithological Society, Malta
- PAOLUCCI, Fabrizio (1999). 'Homo Faber Natura, Scienza e Tecnica nell' Antica Pompei' *Archeologia Viva*, !8 (75 n.s.) : 38 - 45, Maggio - Giugno, 1999.
- RICHTER, G. (1974). *A Handbook of Greek Art: A survey of the visual Arts of Ancient Greece.* Phaidon, London & New York, 1974 (7th edition), 430 pp., 520 figs, 2 maps.
- SULTANA J, C. GAUCI and M. BEAMAN, (1975). *A Guide to the Birds of Malta: (A comprehensive Checklist).* Malta Ornithological Society, xvi, 191 pp., illus.
- TROST C. and M.C. HELLMAN (1996). *Lampes antiques du département des Monnaies, Medailles et Antiques. III. Fonds Generale. Lampes chretiennes.* Catalogue. Bibliotheque nationale de France, Paris, 1996.
- TRUMP, D. (1972). *Malta an Archaeological Guide.* Faber & Faber Ltd, London. 171 pp. 35 pls, 35 figs.
- ZAMMIT, C.G. [Director of Museum]. (1970). *Report on the working of the Museum Department for the year 1968*, Department of Information, Malta, 1970. 15 pp.
- ZAMMIT, T. [Curator of the Museum]. *Annual Report on the Working of the Museum Department [A.R.M.] for the year 1912-13.* Government Printing Office, Malta, 1913. 11 pp. Ghar Dalam: p. 5; Taç-Çaghki: p. 9, fig.
- ZAMMIT, T. (1915-16). Tarxien Cremation Cemetery [Passages on the character of the deposit]. *Notebooks II* (1915-16) : 92-93, 96; [see also: EVANS, J.D. 1971 *op. cit.*, 151].
- ZAMMIT, T. (1916). The Hal Tarxien Neolithic Temple, Malta. *Archaeologia*, 67 (1916): 127-144, 2 text figs., Pls. 15-26. Oxford.
- ZAMMIT, T. (1920). Third Report on the Hal Tarxien Excavations, Malta. *Archaeologia*, 70 (1918-20): 179-200, 21 text figs., 1 plan, Pls. 14-17, Oxford.
- ZAMMIT, T. (1935). 'An Early Christian Rock-tomb on the Hal-Resqun Bridle Road at Gudia'. *Bulletin of the Museum*, 1 (5) : 189 - 195, figs. 9-12. Malta. February 1935. Pp. 189, 195 fig. 12.

*Illustrations of Avian Representations from Maltese Prehistoric and Medieval sites:*

Registration numbers refer to National Museum of Archaeology, Malta [N.M.A.];

Other abbreviations: L = length, W = width, H = height  
A.R.M. = Annual Report of the Museums Department

- Pl. 1. Postage and/or revenue stamps of America, Czechoslovakia, German Republic, Nazi Germany, Egypt and Libya showing the Eagle emblem.
- Pl. 2. The 24 cms high 'Ibis block' from the Ġgantija megalithic building. Reproduced from LA CROIX, 1851, Pl.27, fig.2. Lost.
- Pl. 3. Pottery fragment, Ġgantija, Gozo, L. 75 mm. Plumed birds in flight. Exhibited at the Gozo Museum of Archaeology, Rabat. No Museum registration number. Courtesy: George Azzopardi, Curator, Gozo Museum of Archaeology.
- Pl. 4. Headless orange-brown bird model, L. 48 mm, Mnajdra, 1974 (hitherto unrecorded). Original sketches by the author.
- Pl. 5. N.M.A., T/B 20. Tarxien, 1919. Wide-bodied 'sitting' bird, not decorated, L. 13mm, two V-perforations in base. Bone/ivory. Drawing by Anna Borg Cardona.
- Pl.6. N.M.A., T/P.78. Sherd with applied decoration of horns enclosing a bird with deep pitted decoration. Courtesy: Patrimonju. Photo: Peter Bartolo Parnis.
- Pls.7-9. Clay bird models from Tarxien Cremation Cemetery, N.M.A.
- Pl.7. N.M.A. TC/P. 1015. Buff clay bird, burnished surface, eyes marked, decorated with incised parallel lines (two rings on neck, two zig-zagged lines on dorso-lateral side), shark's tooth-edge markings filling empty areas, a narrow, vertical, penetrating hole through body. L = 64 mm. Drawing by Anna Borg Cardona.
- Pl.8. N.M.A., TC/P. 1016. Bird in dark brown clay, polished surface. L. = 58mm Reproduced from Zammit 1916.
- Pl.9. N.M.A., TC/P.1017. Clay bird, dark, shiny, undecorated with horizontal base. L. = 67 mm. Non-penetrating holes for eyes. Penetrating hole in neck and through back. Reproduced from Zammit 1916.
- Pl.10. N.M.A., S/B 4. Nine Bird-pendants in molluscan shell. See also Pls. 8, 9, 10. Courtesy: Patrimonju. Photo by Peter Bartolo Parnis.
- Pl.11. N.M.A., S/B.4 (pars). A headless bird-pendant in molluscan shell. Note characteristic laminations. Courtesy: Patrimonju. Photo: Peter Bartolo Parnis.
- Pl.12. N.M.A., S/B. 4 (pars). Two Bird-pendants in molluscan shell. Courtesy: Patrimonju. Photo: Peter Bartolo Parnis.
- Pl.13. N.M.A., S/B. 4 (pars). The only molluscan shell bird-pendant in the S/B. 4 group to have eyes marked. Note characteristic laminations. Courtesy: Patrimonju. Photo: Peter Bartolo Parnis.
- Pl.14. N.M.A., S/S 7. 'Bird pendant', polished imported hard green stone, L. 27mm. V-perforations in flat base and nine enigmatic 1 mm deep drill holes in back (4), neck (4) and head (1). Courtesy: Patrimonju. Photo: Peter Bartolo Parnis.
- Pl.15. N.M.A., S/S. 8. Flat, legless bird-pendant, L. 22 mm., anterior part hard green stone and posterior part soft white stone. One transverse perforation just above base. No V-perforations.
- Pl.16. N.M.A. Small faence amulet representing Horus and Thot. L-Iklin. Courtesy: Dr T.C. Gouder.
- Pl.17. N.M.A. A combined golden amulet Horus + Anubis. Tomb, Ghajn Klieb, Rabat. Courtesy: Dr T.C. Gouder. Computer image cleaning by Michael Borg Cardona.
- Pl.18. N.M.A. A 4.85 cm high bronze falcon-headed amulet sheath. Tube containing Papyrus (c.7 sq. cm) with Phoenician inscription and image of Egyptian goddess Isis. 6th century B.C. Tal-Virtù, Rabat, Malta, 1968. Courtesy: Dr T.C. Gouder.
- Pl.19. N.M.A. Rhodian Pottery bowl with goose decoration, 7th century, Tomb, Ghajn Qajjet, Rabat, Malta. Courtesy: Dr T.C. Gouder.
- Pl.20. Flattened perforated amulet recorded in A.R.M. 1913:19. Not located.
- Pl.21. A cock, Pl. 22. A hen. Two terracotta figurines, H.10 cm *Tac-Ċaghki* tombs, Rabat. Now at the Museum of Roman Antiquities, Rabat, Malta. Photo: Anna Borg Cardona, 2001.
- Pl.23. Two 'doves' on the rim of a bowl decorate the central panel or 'emblema' of a mosaic pavement at the Museum of Roman Antiquities, Rabat. Photo: Anna Borg Cardona.
- Pl.24. A polychrome dove in flight at left upper angle and a perched duck at left lower angle of a damaged Early 1st Century mosaic emblema, Museum of Roman Antiquities, Rabat. Photo: Anna Borg Cardona.
- Pl.25. Avian representation incised over main entrance to the Hal Resqun Catacomb (Gudja). Plaster cast, N.M.A. (stores).
- Pl. 26. A 'dove' with a raised leg holding an olive branch between its toes. Detail of a 3rd Century fresco, St Agatha Catacombs, Rabat, Malta. More birds in background. Courtesy: Fr Victor Camilleri MSSP.
- Pl.27. Outline of a dove in flight carrying, in its beak, a small twig that is blooming at its tip. Catacombs of St Paul, Rabat, Malta. Drawing by Anna Borg Cardona.
- Pl.28. left and Pl.29. right. St Agatha Catacombs, Rabat, Malta. Avian representations (resembling shore waders) painted in upper triangular space on either side of the arched entrance to an Early Christian baldacchino tomb in St Agatha Catacombs, Rabat, Malta. Courtesy: Fr Victor J, Camilleri MSSP.
- Pl.30. 'St Paul/St Agatha' Catacomb 3, Rabat. An avian representation that has its outline infilled with red ochre. Numerous blotches of red ochre and charcoal-blue paint adorn bird's plumage. Drawing by Anna Borg Cardona based on Buhagiar's illustration.
- Pl.31. One of the 19 medieval votive stone slabs now adorning the facade of St. Agatha Church, Rabat, Malta. A pelican plucks its breast to feed its three chicks. Courtesy: Rev. Victor J. Camilleri MSSP, Curator, St Agatha.
- Pl.32. Museum of Roman Antiquities, Rabat. Oil lamp 'M. 57' with two wick nozzles, two air holes, disc decorated with relief figure of Zeus and his eagle. Photo: Anna Borg Cardona.
- Pls.33. (Surface view), Pl. 34. (Underside view) of a North African oil lamp in red-slipped terra sigillata in Author's Collection.
- Pl.33. Disc with highly decorated pigeon and two air holes. Photo: G. Zammit Maempel.
- Pl.34. Impressed trade mark on underside. Computer image editing by Michael Borg Cardona.

# PETROGRAPHICAL AND CHEMICAL RESEARCH ON THE STONE OF THE MEGALITHIC TEMPLES

JoAnn Cassar\* and Sergio Vannucci\*\*

The rocks of the Maltese archipelago are entirely sedimentary in nature, consisting of the following sequence of Oligo-Miocene (mid-Tertiary) sediments, from bottom to top:

- Lower Coralline Limestone
- Globigerina Limestone
- Blue Clay
- Greensand
- Upper Coralline Limestone

The Globigerina Limestone formation is made up of three members, the Lower, Middle and Upper Globigerina Limestone, separated from each other by a band of phosphatic nodules. It is the Lower Globigerina facies that is the main material employed in building construction. It can be described as a typical “soft limestone”, being very easy to carve and shape; it thus forms part of the large family of Oligo-Miocene “soft limestones” which are widely diffused in the Mediterranean basin, including Turkey, Israel, Tunisia, Spain and Italy. It is a pure limestone (calcite >92%), containing small amounts of quartz, feldspars, apatite, glauconite and clay minerals.

The porosity of this material is high, usually over 32% (Cassar and Vannucci, 1983; Vannucci et al, 1985), with a high percentage of the pores being micropores (<4mm in diameter) (Vannucci *et al.* 1994). The Coralline Limestone, on the other hand, is much harder and therefore more difficult to work. It is even more pure than the Globigerina Limestone (calcite >95%), containing also small amounts of quartz, even lesser quantities of K-feldspars and some clay minerals (Vannucci M.L., 1996). This facies has a low porosity of around 15% – 18% (Vannucci *et al.* 1985).

## *The megalithic temples*

Both of the two locally available types of limestone, the Globigerina Limestone and the Coralline Limestone, have been used in the construction of the megalithic temples. Thus we find that the temple complexes of Hagar Qim and Tarxien are built entirely of Globigerina Limestone (Cassar, 1988, 1997). At Ġgantija, on the other hand, very little use was made of Globigerina Limestone, practically

the entire complex being built of Coralline Limestone outcropping nearby (Pieri Nerli and Zetti, 1993). In the case of Mnajdra, Coralline Limestone was used for the construction of the external walls; Globigerina Limestone was used for the internal walls. Decorative elements, including altars, animal reliefs and spiral motifs, were also carved out of the soft Globigerina Limestone.

## *Conservation research*

Within the framework of a multi-disciplinary joint project between the Museums Department, Malta, and the University of Florence, Italy, the megalithic monuments of Ġgantija, Hagar Qim and Tarxien were studied over a period of 7 years (1985 to 1991) (Cassar *et al.* 1989). Planimetric and structural surveys both direct and by photogrammetry, were carried out at the temples of Ġgantija, Hagar Qim and Tarxien (Tampone *et al.* 1990, 1994). Studies of the building materials were also carried out - these were carried out on approximately 100 samples, obtained both from the stone surfaces and by dry core drilling. The majority of the samples were Globigerina Limestone, but some Coralline Limestone samples were also included. These samples were then studied from the mineralogical, petrographical, chemical and physical aspects as follows :

- mineralogical tests (by X-Ray Diffraction) to identify the composition, namely:
  - main minerals
  - insoluble residues
  - clay fractions
- petrographical studies in thin sections
- chemical analyses to determine soluble salts
- determination of principal physical parameters, including:
  - specific gravity
  - total open porosity
  - porosimetric distribution
- definition of water absorption parameters:
  - absorption (imbibition) capacity
  - degree of saturation
- micro-structural observations by Scanning Electron Microscope
  - including microanalysis.



## Results

### Mineralogy and petrography of Globigerina Limestone

The main mineralogical composition of Globigerina Limestone includes calcite (calcium carbonate) in concentrations between 92% and 96%. It also includes very much lesser concentrations of quartz (up to 2%) as well as clay and accessory minerals, which range from 4% - 7% (Vannucci *et al.* 1985, 1994).

<i>Whole powders</i>						
Sample No.	Q%	K-F%	P%	C%	Ph%	Ap%
Quarry 1	tr.	tr.	-	96	4	-
Quarry 2	2	-	-	92	7	-
<i>Insoluble residues</i>						
Sample No.	Q%	K-F%	P%		K-F/P%	Ap%
Quarry 1	+++++	++	-		n.d.	tr.
Quarry 2	++++	+++	+		4.1	++
<i>Clay minerals</i>						
Sample No.	Sm%	I-Sm%	Cl%	Cl-V%	I%	K%
Quarry 1	25	17	-	-	17	41
Quarry 2	18	14	-	16	25	27

Where : Q = quartz; K-F = potassium feldspars; P = plagioclases; C = calcite; Ph = phyllosilicates+accessory minerals; Ap = apatite; Sm = smectite; I-Sm = illite-smectite; Cl = chlorite; Cl-V = chlorite-vermiculite; I = illite; K = kaolinite; tr. = trace (<1%); +/++ = presence in amounts as indicated by the number of plus signs; n.d.= not detected.

Table 1. The mineralogical composition of fresh samples of Globigerina Limestone from two quarries in Mqabba, including the main mineralogical composition (whole powders), insoluble residues and clay mineral content.

The clay minerals detected in the insoluble residues consisted for the most part of smectite (18% to 25% of the total clay fraction) and illite-smectite (14% to 17% of the total clay fraction). These are highly expandable clay minerals that are capable of absorbing much water into their clay lattice, thus contributing significantly towards the deterioration of the Globigerina Limestone.

(see section on deterioration processes below.)

Petrographically, Globigerina Limestone can be described as a bioclastic packstone, with subordinate bioclastic wackestones also occurring. These range in grain size from a coarse silt to a fine sand. The bioclasts primarily consist of globigerinae, minute fossils (foraminifera) (Figure 1) which also contribute greatly towards the high porosity of the material (see section below on physical properties).

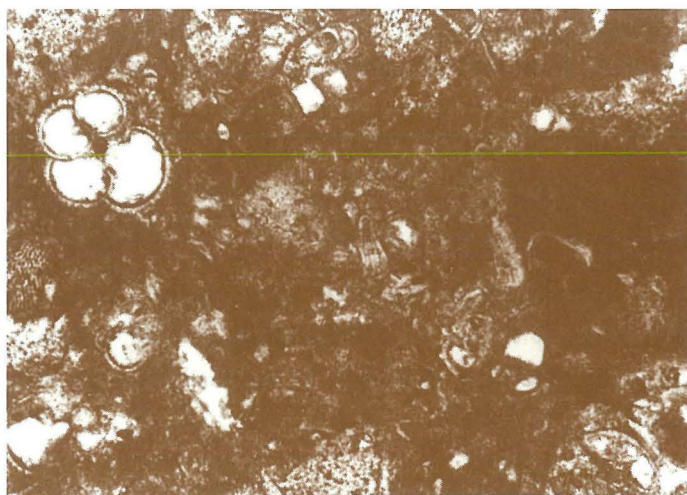


Figure 1. Thin section of Globigerina Limestone, showing the typical structure containing numerous bioclasts, among which are a Globigerina (top left corner) (magnification x 125).

### Physical properties

Unweathered Globigerina Limestone has a total porosity as high as 38% to 41%. This porosity was seen in thin section to be partially intergranular (i.e. within the microfossils) and partially intragranular.

Sample No.	$\gamma_r$	$\gamma_a$	$P_{tot} \%$	I.C.(%) <sub>wt</sub>	I.C.(%) <sub>vol.</sub>	S.I.%
Quarry 1 x	2.70	1.66	38.3	20.5	34.0	88.9
n = 5 $\sigma$	0.012	0.038	1.41	0.46	1.20	5.58
Quarry 2 x	2.71	1.59	41.4	23.7	36.8	88.9
n = 5 $\sigma$	0.014	0.012	0.59	0.38	1.63	4.69

Where :  $\gamma_r$  = real specific gravity (g/cm<sup>3</sup>);  $\gamma_a$  = apparent specific gravity (g/cm<sup>3</sup>);  $P_{tot} \%$  = total porosity; I.C.%<sub>wt</sub> = imbibition capacity by weight; I.C.(%)<sub>vol.</sub> = imbibition capacity by volume; S.I. % = Saturation Index; x = mean value;  $\sigma$  = standard deviation.

Table 2. The main physical properties of fresh samples of Globigerina Limestone from two quarries in Mqabba.

It has a high water absorption capacity of 20.5% - 23.7% by weight and of 34% to 36.8% by volume (see section on water absorption below). The saturation index is also high at 89%; this means that a very high percentage of the existing pore space is available to take up water (and hence also salts, pollutants, etc.) (see section on deterioration processes below).

It is interesting to note that Globigerina Limestone samples, on total immersion, absorb 15% by weight of water within the first 10 minutes; this is 62% of the total amount of water absorbed by the end of the water absorption experiment, which lasted over 5 months.

### Analyses of samples from the temples

#### Soluble salts

High concentrations of soluble salts were detected in practically all samples of Globigerina Limestone obtained from the temples of Hagar Qim, Tarxien and Ġgantija. These included large amounts of chlorides, present both superficially and also in the substrate. Concentrations of up to 1.2% were found in surface samples and up to 1.06% in the substrate (Vannucci, 1996). In addition, sodium chloride (halite) was also detected by X-Ray Diffraction (XRD).

Besides chlorides, also detected were sulphates and nitrates. The concentrations of sulphates were also found to be high, reaching a maximum of 0.8% in samples from Tarxien. Here in fact sulphates were

found to be present in higher concentrations and more often than in samples from the other two temple sites. This confirmed the origin of these soluble salts in the huge quantities of cement utilised in the restoration works of the 1950s. In fact, sodium sulphate was also detected by microanalysis.

High nitrate values were also found, often reaching values of over 200 ppm and in one case reaching over 700 ppm. It is to be noted that values of more than 100 ppm are considered to be harmful to stone.

#### Petrography of weathered Globigerina Limestone

Petrographical examination in thin section of Globigerina Limestone samples from the temples permitted the observation of the presence, and stages of formation, of a superficial crust, even when this was not yet visible to the naked eye. This was seen as a compact

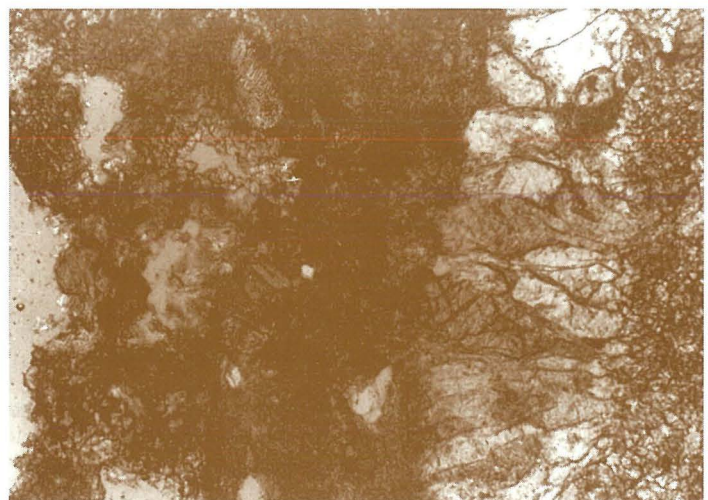


Figure 2. A sample of Globigerina Limestone showing, on the right side, a compact external "crust" which is approximately 2-3mm thick.

layer, due to the secondary precipitation of calcite that had been mobilised from the underlying parts of the stone (Figure 2).

This calcium carbonate slowly occludes the porosity of the stone, forming a more compact and less pervious crust above a weaker and more porous substrate. In a more advanced stage, the crust appears to be even more compact, about 1 cm thick, intersected by a series of micro-cracks parallel to the external surface (Figure 3). These cracks tend to promote the detachment of the crust from a substrate that has become powdery due to the dissolution of the calcitic binder, leading to phenomena of intergranular loss of cohesion. Dissolution affects primarily the calcitic cement between the microfossils, resulting in loss of cohesion between bioclasts and matrix. Petrographical observations in fact showed that

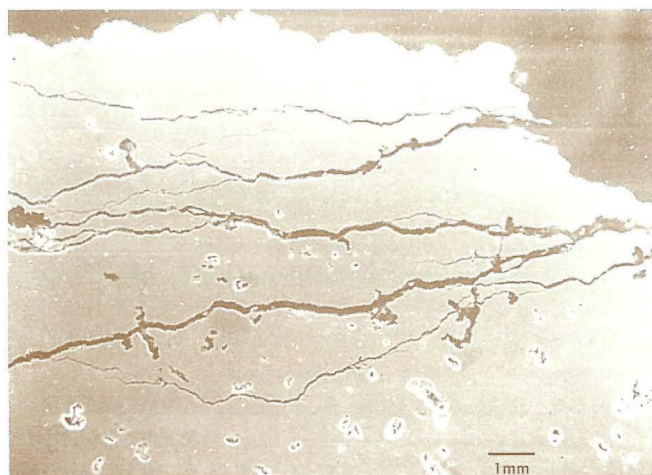


Figure 3. An external area of *Globigerina* Limestone showing a compact crust which is about 1 cm thick. This is intersected by a series of micro-cracks parallel to the external surface.

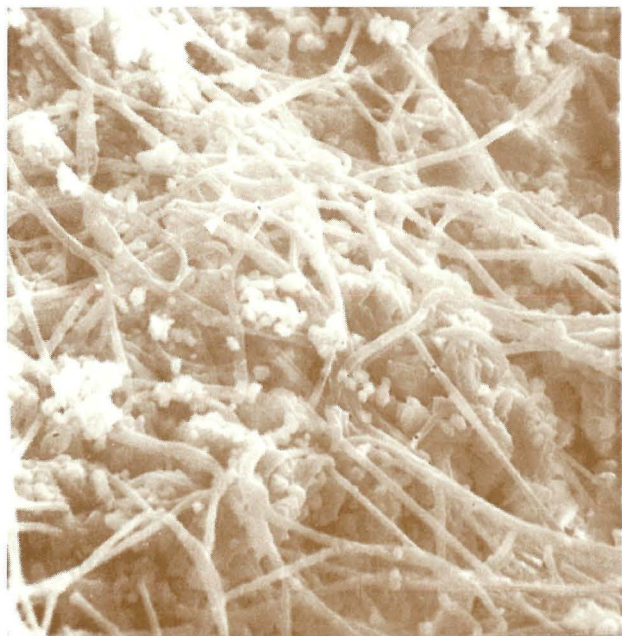


Figure 4. One of the weathered surfaces of *Globigerina* Limestone showing intense biological growth (probably fungal). The diameter of the filaments is approximately 2  $\mu\text{m}$  (SEM, magnification  $\times 1000$ ).

porosity increased in the substrate, leading to the formation of irregular voids which often intercommunicate, isolating areas of stone of greater or lesser dimensions.

Crusts were also examined by Scanning Electron Microscopy (SEM). These were often seen to have compact external as well as internal surfaces i.e. at the point of break-off from the substrate. The external part of the crust was occasionally seen to be encrusted with halite (sodium chloride). Intense biological growth was often seen to occur on compact crusts (Figure 4). In other cases, the SEM showed surfaces to be virtually powdering away, due to deterioration occurring at the crust-substrate interface.

#### *Physical characteristics of weathered samples*

In weathered samples of *Globigerina* Limestone, the total open porosity varied between 19% and 52% (except one sample = 7.6%). This can be compared to the values of 38% to 41% obtained fresh quarry samples. This is due in part to differences in the stones themselves. A low porosity in weathered samples was generally found in the superficial crusts. This is primarily because of calcite mobilisation which results in a surface which is more compact (lower porosity) and a less compact substrate (high porosity). This also confirms the petrographical observations on crusts, described above.

Some samples, on the other hand, showed the opposite effect i.e. the outer surface was *more* porous than the substrate. This is due to the fact that the crust had here already fallen off and therefore the surface exposed was that of the substrate which was at that stage already powdering away.

#### *Water absorption tests*

The differences in porosities between crust and substrate were also clearly seen during water absorption trials by total immersion. These results showed that the Absorption Capacity (or Imbibition Capacity) by weight ( $\text{I.C.}(\%)_{\text{wt}}$ ) was as low as 9% for crusts and as high as 25% for substrates. For quarry samples the values obtained were 20.5% - 23.7%. The Imbibition Capacity by volume ( $\text{I.C.}(\%)_{\text{vol}}$ ) was as low as 19% for crusts and as high as 38% for substrates. For quarry samples this was in the range of 34% to 36.8%.

Even the Saturation Index (S.I.%) registered for the crusts was less than that for the substrates, again confirming the greater compactness of the outer surface. Values as low as 52% for crusts and as high as 97% for substrates were obtained (this was 89% for quarry samples).

### *Deterioration processes: causes and mechanisms*

The combination of mineralogical, petrographical and chemical analyses, together with morphological observations and microanalysis, resulted in a definition of the deterioration process affecting the Globigerina Limestone of the megaliths of the prehistoric temples. The process was found to be divided into a number of distinct sequential steps: 1. formation of a thick and compact superficial crust due to reprecipitation of calcite (calcium carbonate) which was originally dissolved from within the stone by absorbed water (rising damp, condensation or rain water). This water also contains varying amounts of soluble salts. This incipient crust can be called a "protocrust" and is usually 1 - 2 cm thick.

2. recurring cycles of dissolution and precipitation result in the formation of "layers" of crust parallel to the surface of the stone. This consists of a relatively compact "core", a weak intermediate zone which has a very high porosity due to the dissolution of calcite, and a hard, compact outer crust due to the deposition of reprecipitated calcite in the surface pores. Lifting of the crust generally occurs, and the underlying substrate is exposed, showing it to be affected by intense deterioration phenomena, including loss of cohesion, corrosion and powdering. It also has a high porosity compared to the detached crust.

3. loss of the crust results in the exposure of a surface which is already greatly deteriorated; this phase is often followed by initiation of the process of alveolisation - this latter process depends upon the number, orientation and size of the sedimentary structures (bioturbation) present. Due to this type of deterioration, a new crust is not able to form.

There are, however, also other factors that affect this deterioration process. These include the intrinsic clay fraction which, although small, contains minerals such as smectite and illite-smectite which are highly expandable. The aggression of the marine environment also plays an important role; this results in chemical corrosion of the surface of the stone, attacking the calcite and also forming calcium chloride. Other environmental conditions include wind, which not only transports sea spray but can also exert an abrasive action; insolation, which together with daily and seasonal temperature fluctuations accelerates the deterioration of the already weakened stone; and the presence of

sulphates and nitrates which can cause deterioration by salt crystallisation.

This mode of deterioration is analogous to that occurring in many other "soft limestones" of the Mediterranean Basin, including the "Pietra di Lecce" and the "Calcare di Noto". It is directly related to the carbonate composition and clastic structure of the Globigerina Limestone, as well as certain distinctive characteristics such as very high porosity and water absorption.

### *Bibliography*

- Cassar, J., and Vannucci, S. (1983) *The stones employed in Maltese architecture. A study of the weathering of Globigerina and Coralline limestone and the problems of their conservation*. Unpublished report presented to UNESCO.
- Cassar, J. (1988) *Previous stone restoration methods in the Maltese islands*. Early Advances in Conservation, British Museum Occasional Paper No 65, pp. 103-116.
- Cassar, J., Tampone, G., and Vannucci, S. (1989) *Conservazione e restauro dei templi megalitici preistorici maltesi: progetto bilaterale di ricerca e risultanze delle prime missioni di studio*. Conservation of Monuments in the Mediterranean Basin, Proceedings of the 1<sup>st</sup> International Symposium, Bari, Italy, pp. 139-146.
- Cassar, J. (1997) *The state of conservation of the prehistoric monuments of the islands of Malta and Gozo: an overview*. Contribution of Science and Technology to the Protection and Valorization of Cultural Heritage in the Mediterranean Basin, Proceedings of the contributions to the Euro-Med Workshop, Universitat Autònoma de Barcelona and Tunisian Ministry of Culture, Tunis, Tunisia. Forthcoming.
- Pieri Nerli, P. and Zetti, I. (1993) *I templi preistorici megalitici maltesi. Studi e proposte di intervento conservativo per i complessi di Ġgantija e Hagar Qim*. Tesi di Laurea in Architettura (unpublished). Facoltà di Architettura, Dipartimento di Storia dell'Architettura e Restauro delle Strutture Architettoniche, Università degli Studi di Firenze, Italy.
- Tampone, G., Cassar, J., and Vannucci, S. (1990) The prehistoric megalithic temples of the Maltese islands: an architectural interpretation of structures, building techniques, materials. International seminar - towards the Second Century of Archaeology in Sri Lanka, Ancient Ceylon, *Journal of the Archaeological Survey Department of Sri Lanka*, Vol. 2, N. 7, pp. 330-336.
- Tampone, G., Cassar, J., Vannucci, S. (1990) The prehistoric megalithic temples of the Maltese islands: the deterioration and criteria for conservation. International Seminar - Towards the Second Century of Archaeology in Sri Lanka, Ancient Ceylon, *Journal of the Archaeological Survey Department of Sri Lanka*, Vol. 2, N. 7, pp. 391-400.
- Tampone, G., Vannucci, S., Cassar, J., Giordano, S., Fiorito, S., Pieri-Nerli, P., Sausa, P., and Zetti, I. (1994) *I templi megalitici preistorici delle isole maltesi: determinazione*

- delle proprietà meccaniche dei materiali ed interpretazione dei dissesti*. Conservation of Monuments in the Mediterranean Basin, Proceedings of the 3<sup>rd</sup> International Symposium, Venice, Italy, pp. 567-575.
- Tampone, G., Vannucci, S., Cassar, J., Fiorito, S., Pieri-Nerli, P., Sausa, P., and Zetti, I. (1994) *I templi megalitici preistorici delle isole maltesi: criteri di intervento*. Conservation of Monuments in the Mediterranean Basin, Proceedings of the 3<sup>rd</sup> International Symposium, Venice, Italy, pp. 455-459.
- Vannucci M.L. (1996) *Studio mineralogico-petrografico delle "pietre" dei templi preistorici dell'arcipelago maltese e relativi problemi conservativi*. Tesi di Laurea (unpublished), Facoltà di Scienze Matematiche, Fisiche e Naturali, Università degli Studi di Firenze, Italy. Corso di Laurea in Scienze Geologiche.
- Vannucci, S., Cassar, J., and Tampone, G. (1985) The treatment of a typical soft limestone with different consolidants: a comparative study. *Bollettino Ingegneri della Toscana*, Italy, 11, pp. 3-11.
- Vannucci, S., Alessandrini, G., Cassar, J., Tampone, G., and Vannucci, M. L. (1994) *I templi megalitici preistorici delle isole maltesi: cause e processi di degradazione del Globigerina Limestone*. Conservation of Monuments in the Mediterranean Basin, Proceedings of the 3<sup>rd</sup> International Symposium, Venice, Italy, pp. 555-565.
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# Object, Space and the Museum: a semiotic approach

Patricia Camilleri

This paper discusses the object in a museum context and the different ways in which space is used within the museum paradigm. The aim of the paper is to enable a wide vision of the different ways in which a museum signifies.

Museums form a significant reality within the global culture, they are certainly part of an identity construct. It is, therefore, important that all those who have a stake in activities involving cultural organisation should be examining and re-examining meaning production in what is a dynamic process.

A key element in a semiotic approach, that should be clarified before continuing, is that of competence:

“[to] bring someone to understand a text or to see an interpretation requires shared points of departure and common mental operations.”<sup>1</sup>

This does not mean that understanding is going to be uniform, far from it, but that, in the case of museums for example, ignorance of the museum paradigm would be an impediment to understanding.

“... social and cultural phenomena” explains Culler, “are not simply material objects or events but objects and events with meaning, and hence sign ... they do not have essences but are defined by a network of relations, both internal and external.”<sup>2</sup>

It follows that there must be an underlying system of distinctions and conventions which makes meaning possible. Within this structure, there are codes which we use to create the meaning we want. The structure is there but the meaning, at the end of the day, occurs through a subject.

To move on to the museum object then, it can be said that it forms part of a paradigm of function: a museum, and that it signifies through the way in which it is used by a subject. That subject includes, of course, the person who had exhibited it and the person who views it. The object’s ‘value’ is, to borrow a phrase from Terence Hawkes,

“... finally and wholly determined by its total environment.”

One cannot really talk about the museum object without first making mention of the collected item. This is because there are historical links and cognitive connections between the two. In characteristically brusque manner, Baudrillard states, “... what you collect is always yourself.”<sup>3</sup> And certainly the early collections such as those of the Medici family seem to support this hypothesis. Is there validity, however, in extrapolating that idea to include national collections? I think there is serious evidence to support such an extension of the collector. To return to Baudrillard, he defines collected objects in general as

“... objects of a passion - the passion for private property, emotional investment in which is every bit as intense as investment in ‘human’ passion.”<sup>4</sup>

A national museum may not aspire to the collection of private property but it certainly does have an acquisitive side which can involve deep emotional investment not only on the part of the curators but also on the part of the general public. One only has to think of the banner stating: ‘Tuna x-xabla lura!’ (Give us the sword back!) seen recently during a Malta-France football match to know that. Many of the people who painstakingly painted the banner would probably never actually go to see Grand Master La Valette’s sword even if the Louvre were to return it to Malta but they felt very strongly about the issue all the same.

The narrative of collecting deserves much more time than I can give to it in this paper. However, it cannot go unmentioned as the dynamic narrative of the ‘collection’ is key to the status of the object. Every new insertion, for example, can change the dynamic and the status of the object within a narrative that rarely reaches a conclusion. As Peter Brooks says, a collector’s greatest fear is of conclusion. His or her desire to go on adding and changing is so as to avoid the death of a collection.<sup>5</sup>

The collection could also be described as a 'supernormal' sign. Sebeok, without particular reference to collections, suggests that such a 'supernormal' sign overtakes a 'normal' sign in its effect as a stimulus to meaning. The collection (private or public) could thus be described as an excess or amplification of meaning.

The modern museum, and by modern I refer to the major developments of the Nineteenth century up to the present day, have taken place in, as the song goes, 'a material world', a world of "things, of objects and material goods" as Susan Pearce tells us.<sup>6</sup> The growth of capitalism based on production gave enormous importance to acquisition:

"Our complex relationship with objects - as producers, owners and collectors - is itself a characteristic modern meta-narrative, and so, in its way, is our effort to understand material culture and our interest in it."<sup>7</sup>

Certainly, the museum paradigm carries with it "like a snail [...], its stratified accumulation of collections and buildings, and the traditions, or mind-sets, which accompany them."<sup>8</sup>

So what would be a good definition of museum? How can we describe this place in which the object is positioned? The Museum Association of Great Britain has a seemingly straight forward definition which mentions the collecting, preserving, exhibiting and interpreting functions of a museum. Jeanne Cannizzo defines it thus:

"Museums are symbolic structures which make visible our public myths: the stories we tell ourselves about ourselves are institutionalised and materialised in our museums."<sup>9</sup>

So what is the status of an object in that context? An object has at least a double existence. It is what it is but it signifies more than what it is. To use an example, a rock is a rock but it represents also a period of geological time, it could be a weapon. It can also hold metaphoric meaning such as 'strength', 'protection', 'integrity'.<sup>10</sup> It could have a metonymic meaning as a representation of St. Peter. This might be stretching things a bit but just to give expression to the breadth of meaning of this item.

The object is always part of a paradigm which is the exhibition, which itself is found in the world of

museums which itself refers to the general world of western culture and so on. However, the user must also be aware of the syntactical experience provoked by the exhibition of the object. A linear development can seem very logical and, consequently, very truthful, but, as cinema directors well know, the sequence of events can be created as the creator wishes. He or she who creates the linearity, the syntax, can limit that development while, at the same time, giving the impression of a progression forward.

This sensation of manipulation of history is the basis of an accusation by Kavanagh:

"Curators literally make history by deciding what to collect and what to ignore, and by so doing dictating what should be remembered and what forgotten."<sup>11</sup>

The statement serves to emphasise the complexity of the rapport between the user and the museum object. As Jean Umiker Sebeok says, the meaning of a display is expressed through the 'triadic interplay' between the user, the display and what she refers to as the 'situation of the encounter.' Within the context of that interplay, the object carries with it an inviolable existence which is coupled with the inevitable present day construction and reconstruction. For example, as McHoul suggests:

"The ethical needs of the present determine (if anything) how the past is to be read - not vice versa."<sup>12</sup>

How, then, do the goals of the present day museum affect the status of the object? Today the emphasis seems to be on the museological experience, a trend which may diminish the importance of the genuine object in exchange for an informationally replete simulation. This issue has been under discussion, of course, since Benjamin in the Fifties. There may be a danger here that the information takes precedence over the object. 'The Medium is the Message' said Marshal McLuhan in the Sixties. Perhaps the medium can obscure the message. Hilde Hein, for example, is worried about differentiating the object from the experience because she fears that if the objects in a museum context are not understood in their original ontological context then they will take on meaning assigned to them by others. Traditionally, she sustains, museums were linked to an idea of genuineness as a value per se. The museum

experience without the mediation of the genuine objects must leave a different effect.

Interesting, also, is the idea that an object, because of its visual impact, can offer a vista different to that prescribed by the curator. "Objects", affirms Hooper Greenhill, "enable reflection, and speculation." These reflections of the observer can provoke abstract ideas precisely because they are not limited by the written word.

The museum object, although not a personal object, can become a quasi-personal possession either through art books or archaeology publications or because somebody visits a particular object in a gallery or a museum. The user knows or expects that he/she will find an object every time they visit. Who has not been disappointed to find a favourite painting has been lent for an exhibition abroad?

The juxtaposition of the objects and the visual importance given to each one impact meaning for the viewer. The political meta-narrative seems always present. Much has been written about the meta-narratives of culture created in their turn by the politics of power. Douglas Crimp, for example, severely criticises the development of a cultural history that removes an object from its original historical context not so as to commemorate a particular political moment but to create what he calls an illusion of universal knowledge. With reference to the Museum of Modern Art (MoMA) in New York, he laments the historical manipulation exercised by the curators and denounces the separation into categories - Picture & Sculpture; Drawings; Prints & Illustrated Books, Architecture & Design, Photography and Cinema. He feels that in this way, MoMA automatically constructs a formalist storiography.<sup>13</sup>

The MoMA comes in for further criticism by Carol Duncan who is convinced that the itinerary can serve to consolidate in the user a certain cognition of the past. Referring to 'Woman I' by De Kooning and Picasso's 'Les Demoiselles d'Avignon', Duncan writes:

"The museum (MoMA) has always hung these works with precise attention to their strategic roles in the story of modern art."<sup>14</sup>

and again:

"Like those of all great museums, the MoMA's rituals transmit a complex ideological signal."<sup>15</sup>

In some ways, the museum or art gallery context is similar to that of a theatre. Both areas of activity involve the creation of an ambience which is outside the sphere of normal everyday activity. There is an element of show, of ritual and a certain competence is needed to be able to recognise what Elam calls the intertextuality of 'reality' and 'theatre'. From the time of the Prague School in the Thirties, there have been many exponents of the semiotics of theatre. Bogatyrov, for example, speaks of the way in which the stage radically transforms all objects and, consequently, the elements of meaning associated with them.<sup>16</sup> Elam calls this the 'semiotization of the object' in which an object that might have had a purely practical or ritual function becomes a referent for the whole of its object class. Exhibited museum objects may suffer the same type of transformation. Once an object is exhibited it cannot return to being what it was before and yet it can evolve in a kind of constant dialectic between denotation and connotation. The choice of objects then is clearly key to the weaving of a discourse about the past.

One of the main reasons for using semiotic analysis with regard to museum objects and the meaning they produce is that it recognises the fact that material culture constitutes a communication system that enriches our understanding of ourselves. It is not enough to consider museum objects as things that function independently of us. They are not 'simply' anything. On the contrary, objects can be described as complex phenomena which, as Pearce says,

"... both generate and are illuminated by overarching interpretative philosophies."<sup>17</sup>

Before passing on to what is, I believe an integrated discussion about space, I would like to bring in a practical example from our own National Museum of Archaeology in Valletta. Let us take as an example of meaning production the so-called Sleeping Lady.

The Sleeping Lady was found at Hal Saflicni Hypogeum and is perhaps Malta's most enigmatic archaeological object. We cannot be sure what meaning the Sleeping Lady had for her contemporaries although we can speculate that,



given the care with which it has been modelled, the statue played an important role in some funerary ritual. Today, however, the statue plays a symbolic role and is a sign within a system of meaning. This object, found in the early 20th century, remains integrally connected with its origin and its past and will remain always representative of that period of prehistory. The fact that this object will remain 'alive' much longer than we do gives it added significance.

Certainly, the way in which the statue is displayed shows that the curators consider it to be a key item in the collection. The room which holds the statue is deep inside the exhibition area and represents the culmination of the itinerary. Whereas the other rooms are lit both by artificial and by some natural light, this room is kept dark. The statue is placed in a glass showcase and is surrounded by a rope to indicate that the visitor should not get too close. The atmosphere is similar to that of the cave where it was found.

There is, of course, a discourse which surrounds the statue. Grima, in an article about the Sleeping Lady, states that probably most visitors to the National Museum of Archaeology would say that the statue represents the fertility cult of perhaps a Mother God or perhaps a local Venus, all of which are familiar themes concerning the temple period. In fact, in the Nineties there was an attempt to re-evaluate the statue as a single object rather than an object that was part of a general category. Grima quotes some authors who felt that the feminists had hijacked somewhat attempts at evaluating the Sleeping Lady. Grima laments the fact that we tend to make aesthetic judgments through our own episteme (to use a Foucaultian term), that of linear perspective and suggests that the exaggeratedly prominent hips of the statuette might reflect a particular interest that the temple builders had for curvilinearity. This interest is certainly reflected at Hal Saflieni where the replication of a normal temple is subject to a curvature not seen in the original.

Grima suggests that the representational codes and architectural expedients could be transposed to the sculpture and that it is

[...] another expression of another way of knowing, another way of experiencing [...]<sup>18</sup>

This kind of analysis is useful to our discussion for two diverse reasons. One, it clearly illustrates that the user enters the museum with his or her own baggage of knowledge and ideas gleaned through reading, education, the family and myriad other influences. And, secondly, it demonstrates that the relationship between museum - object - user remains a continual challenge as Umiker-Sebeok suggests.

But these objects are not simply positioned in the air but form part of the museum paradigm which includes the space they occupy and influence. Extensiveness, or area, is Greimas' starting point for a discussion about space. This indefinite area is structured as a series of places, such as sea, land, city, village, road, buildings and so on. This space/place could also be a map, a painting or a sculpture but whatever it is it can be referred to as a constructed object envisaged "as a full, filled up, seamless entity."<sup>19</sup>

Once seen as a construction, this space becomes "a semiotic object with space as its signifier."<sup>20</sup> Each constructed area can be examined from various points of view: the strictly geometrical; as "a progressive emergence of spatial qualities"; or as the cultural organisation of nature. If, as Lukken and Searle suggest, we look at space as a matter of socio-cultural organisation then buildings can be seen as socio-cultural entities through which people express their social-relations. It follows also that identities can be constructed in spatial terms and this is important with regard to the museum as space or rather place. Greimas looks at space in socio-cultural terms, seeing it as an 'utterance' (énoncé) constructed by a human subject to be read and utilized accordingly by a human subject. The 'places' that we experience will all be the result of the diachronic input of various human subjects where 'input' refers to the total human 'sensorium': smell, touch, sight, hearing and sound. And any analysis of place must take these elements into account.

If one is to attempt a semiotic analysis of museum space then it is pertinent to include another analytical tool i.e. the semiotics of architecture. One possible model is that used by Lukken and Searle which evolved from the work of the Paris School. Architecture is seen as being the result of two processes: the initial creation and the later use made of the building. Although the building is seen, in

the first instance, as a single autonomous object concerned with how meaning takes form in the data immediately available to the viewer, the subject is seen as an integral part of the system. Also, it is important to realise that the semiotic system of architecture functions within a paradigm containing other semiotic systems in an interdependent way. Clearly, when we are talking 'architecture' we refer not only to the external but to the internal place.

To return to the analogy with the theatre, in the use of space there exists that which Carlson refers to as the dialectic 'space/observer':

"It is not these separate spaces for player and observer which makes theatre, but their simultaneous presence and confrontations [...]."<sup>21</sup>

Hillier and Hanson, while explaining their theory of the syntax of space, emphasise that "... buildings are not just objects, but transformations of space through objects." They believe that it is space that creates that special rapport between function and social meaning in buildings. When we try to systematise space, what we are in fact doing is creating relationships between people.

As explained and discussed by Lukken and Searle, the generative trajectory of the discourse concerning the semiotics of both space and of architecture develops around the form of the expression and the form of the content.<sup>22</sup> The form of the expression is concerned with the actual structures of the signifier. This would correspond to phonology in speech but in architecture and space (in the sense in which it is used by the Paris School including Greimas) it refers to the actual building. Not, however, only to the manifest form but also to the network of relationships present in that plastic form. Within this discussion concerning the plastic dimensions of the expression, there exist topological categories of position and orientation and the plastic categories of chromatism and eidetics (the study of shapes). Concerning the chromatic category, colour is accepted as a key conveyor of meaning in many types of discourse and the museum context is surely concerned with such a category. Eidetics as well is recognised as a relevant category. Greimas discusses shape and hypothesises on the development of the architectural discourse which might include the opposition of curved/straight; triangle/square/circle.<sup>23</sup>

To analyse the form of the content one must include other categories within a discursive syntax: actors ('signatures' placed on buildings, for example); time references; spatial programming of the oppositions 'within/without'; the human sensorium (concerning smell Greimas refers to 'the odour of sanctity' and the sulphurous fumes of the devil<sup>24</sup>; the syntactic component (divisions of space according to roles known as topoi). Acceptance of these topoi, for example, indicates or rather necessitates an acceptance of 'conventional communication' and here we can refer back to Culler's insistence on competence. Boundaries between topoi can be both physical and/or conventional - can divide the public from the private.

As Hammad states, space is much more than "just a necessary backdrop to the realisation of actions."<sup>25</sup> Space is something physical but it is also invisible, an intangible phenomenon. It is not difficult to analyse museum space from the physical point of view: one can measure distances and dimensions; one can calculate the ease or difficulty of access for individuals, groups, the disabled. But space goes beyond these elements. It is even possible to go beyond museum space through technology (videos/computer imaging etc.) The original dioramas were designed to do something like that with lights and large pictures. Through space, the museum creates its meanings on various levels and uses diverse codes in an interaction between space and architecture, between observer and the observed. One can study these dialectics through the morphology of the internal space that is influenced by the positioning of the architectural elements and through a study of the system or code which operates in such a positioning.

Let us take, for example, the circulation of visitors. One supposes that the basic aim is to position the objects in such a way that viewers can see them well and that they should be in a certain order. However, there are other elements to consider. To quote Choi, who has done pioneering work in this regard,

"The creation of a field of reciprocal social visibility confers to museum visits their character as social occasion and public events."<sup>26</sup>

With reference to the design or layout of a museum, there are two principal models which can be of

influence: the deterministic model which encourages a certain rigidity in the viewing of objects and the probabilistic, based on statistical data, which moderates exploration on the part of the observer according to syntactical properties in the design of the museum.<sup>27</sup>

Pearce quotes research done by the Royal Ontario Museum (ROM).<sup>28</sup> From the ROM study it resulted that most of the users passed in the shortest line between two points of reference and this has consequences for the mapping of an exhibition. According to two researchers in the field, Peponis and Hesdin, back in 1993, there exist three relational properties within the museum space. The first is the relative distances between one museum unit and another, which they call Depth; the second concerns the various alternatives to movements within the museum spaces and finally, there is the facility with which the user understands the physical structure of the gallery or museum. This last property is referred to as 'entropy' (a term which in science refers to a measure of efficiency of a system). Peponis and Hesdin conclude that if a museum has strong axial structure, little 'Depth' and few choices of movement between one object and another, it will usually present knowledge as though it were something already known and settled. If, on the other hand, the user finds various ways of going around an exhibition and when the physical connections between one set up unit and another are not so marked, when there is more entropy, cognition is seen as a suggestion or proposition with various possible outlets.

In 1999, Choi was able to examine similar elements with the aid of a computer. His research seeks to explain, without direct reference to exhibited objects or to a particular museum, the system which underlies the behaviour of visitors. Using the syntactical space method of Hillier and Hanson, Choi identifies the spatial constituents and their relational rapport which he then inputs while introducing some variables. His results show that a probabilistic model moderates exploration and contact statistically according to the syntactical properties of the general layout.<sup>29</sup> Choi comments that movement and contact are central to the museum experience when one cannot see the whole all at the same time. To see is complemented by 'being seen' and this is an important factor regardless of the exhibited object.

"In museums this is more important precisely because the spatialisation and socialisation of displays is their institutional aim."<sup>30</sup>

Linked to this use of space is the system of proxemics. Greimas defines it as a semiotic discipline

"which seeks to analyse the arrangements of subjects and of objects in space, and, more particularly, the use that the subjects make of space in order to produce signification."<sup>31</sup>

He also comments that when one is considering artificial behaviours such as theatre, religious ritual etc., the positioning of the objects becomes the carrier of signification as much as that of the subjects. This is a comment valid for a museum context in which there is a tension between object and subject. In the Nineteenth century museum one can imagine that, for the viewer, the exhibited object must have seemed strange and out of reach both metaphorically and physically. Paintings, at that time, were usually placed high up on the walls while objects were kept in study cases or even in drawers in the 'cabinet' tradition. Even today, in some museums and galleries one finds examples of proxemic meaning such as a rope attached to two brass stands in front of an object or painting. Clearly, it does not prevent the observer approaching but is a warning not to do so. About theatre, Elam states

"We are still conditioned by the Nineteenth century ideal of spatial organisation in the playhouse, that is to say, a maximum of grandiosity and fixity, resulting in a maximum of formality."<sup>32</sup>

Things have changed in the postwar years but probably not as much as one might imagine.

Much work has been done on proxemics by researchers such as Edward T. Hall, who worked out a proxemic continuum in four sectors: intimate, personal, social and public. Although designed to fit the U.S. culture, this system can be adapted and represents a very Saussurian structure of signification through the many binary oppositions (within/without; high/low; close/far etc.) In a museum context, proxemic structures will differ greatly according to the type of entity it is. Science and Technology museums, for example, would have a different proxemic approach than art museums,

as might a museum that contains copies and not original works.

The museum itinerary calls into play many of the categories that we have discussed both within the form of the expression and within the form of the content. The fact that one walks around an exhibition is really a ritualistic action in which the visitor participates in the so-called museum experience. Sometimes, as in the case of the Guggenheim Museum, the sloping floor gives the user the idea of a real journey (up or down). Often there is a sense of moving upwards towards the natural light which might give the impression of having arrived in a kind of museum heaven. As we have seen, the more deterministic the itinerary, the tighter the narrative.

“Space in the museum, then, is a finite resource. It is also a territory, more or less jealously guarded and colonised.”<sup>33</sup>

The following passage from Umberto Eco describes the moment of choice, the moment of the decision to use a certain code in a certain way. He writes:

“... si limitano le possibilità di combinazione tra gli elementi in gioco e il numero degli elementi che costituiscono il repertorio. Si introduce nella situazione di equiprobabilità della fonte un sistema di probabilità: certe combinazioni sono possibili e altre meno. L'informazione della fonte diminuisce, la possibilità di trasmettere messaggi aumenta.”<sup>34</sup>

From the situation of infinite possibility we move to that moment of creativity that is part of our essence of being human. It is both a limiting and a liberating moment. The great pay off is our unique ability to communicate.

We work within paradigm structures that give us the opportunity to use many different codes. Recognising the power of signification of each of those codes is the key to the enabling of a dynamic process. If codes are not analysed, then the paradigm will remain stagnant. The most creative amongst us will be those who push that paradigm to its limits and perhaps even beyond.

\* This paper evolved from a talk given by the author to the Archaeological Society of Malta (22.11.01). The material was taken mainly from the author's Master's degree thesis (University of Malta) entitled: *L'Analisi Strutturale: verso una semiologia museale*, (2001).

## References

- <sup>1</sup> Jonathan Culler, *Structuralist Poetics*, London, Routledge, 1975, p. 258.
- <sup>2</sup> Ibid. p. 4.
- <sup>3</sup> J. Baudrillard, *System of Objects*, trans. James Benedict, London & N.Y., Verso, 1996, (1st ed., *Le système des objets*, 1968) p. 91.
- <sup>4</sup> Ibid. p. 85.
- <sup>5</sup> P. Brooks, *Reading for the Plot: Design and Intention in Narrative*, New York, 1984 cited in M. Bal, *Telling Objects: A Narrative Perspective on Collecting in The Cultures of Collecting*, J. Elsner and R. Cardinale, ed., London, Reaktion Books, 1994, p. 113.
- <sup>6</sup> S.M. Pearce, *Museums, Objects and Collections*, Washington DC, Smithsonian Institution Press, 1993 (1st ed., Leicester, Leicester University Press, 1992), p. 3.
- <sup>7</sup> Ibid. p. 3.
- <sup>8</sup> Ibid. p. 3.
- <sup>9</sup> J. Cannizzo, *How sweet it is: cultural politics in Barbados*, in *Museum Provision and Professionalism*, G. Kavanagh, ed., London, Routledge, 1994, pp. 26 - 32, p. 26.
- <sup>10</sup> University of Northern Iowa Web-based Distance Education - Module 3 Communication Theory: <http://edtech1.coe.uni.edu/classes/230/documents/module-3.html>
- <sup>11</sup> G. Kavanagh, *Dream Spaces -Memory and the museum*, London & New York, Leicester University Press, 2000, p. 98.
- <sup>12</sup> A. McHoul, *Semiotic Investigations*, Lincoln and London, University of Nebraska Press, 1996, p. 12.
- <sup>13</sup> D. Crimp, *On the Museum's Ruins*, Cambridge Mass., MIT Press, 1997, p. 204.
- <sup>14</sup> C. Duncan, *The MoMA's Hot Mamas* in *Aesthetics: The Big Questions*, C. Korsmeyer, ed. Oxford, Blackwell, 1998, p. 119.
- <sup>15</sup> Ibid., p. 117.
- <sup>16</sup> P. Bogatyrov, *Semiotics in the Folk Theatre in Semiotics Art: Prague School Contributions*, L. Matejka & I.R. Titunick, ed., Cambridge, Mass., MIT Press, 1976, cited in K. Elam, *The Semiotics of Theatre and Drama*, London, Routledge, 1994 (1st ed., Methuen 1980), p. 7.
- <sup>17</sup> S. Pearce, *Museums, Objects and Collections*, Washington DC, Smithsonian Institution Press, 1993, p. 144.
- <sup>18</sup> R. Grima, *Waking up to the Sleeping Lady* in *Malta Archaeological Review*, Issue No. 3, 1999, pp. 3 - 8.
- <sup>19</sup> A. Greimas & J. Courtés, *Semiotics and Language: an analytical dictionary*, Bloomington, Indiana University Press, 1982.
- <sup>20</sup> G. Lukken & M. Searle, *Semiotics and Church Architecture*, Kampen The Netherlands, Kok Pharos Publishing House, 1993.
- <sup>21</sup> M. Carlson, *Places of Performance: the semiotics of theatre architecture*, Ithaca & London, Cornell University Press, 1989, p. 129.
- <sup>22</sup> Hammad, in Greimas/Courtés 1986: s.v. Espace (semiotique de l' -) cited in Lukken & Searle, op.cit.

- <sup>23</sup> A. Greimas 1976 (a): 147-151 cited in Lukken and Searle, op. cit., p. 58.
- <sup>24</sup> A. Greimas 1987: 71-78 cited in Lukken and Searle, op.cit., p. 36.
- <sup>25</sup> Hammad 1989: 77 cited in Lukken and Searle, op. cit.
- <sup>26</sup> Y.K. Choi, The morphology of exploration and encounter in museum layouts in *Environment and Planning B: Planning and Design* 1999, vol. 26, pp. 241 - 250, p. 242.
- <sup>27</sup> Ibid., p. 241.
- <sup>28</sup> ROM 1976, *Communicating with the Museum Visitor: Guidelines for planning*, Royal Ontario Museum, Toronto Canada cited in S. Pearce, 1993, op. cit., p. 138.
- <sup>29</sup> Y.K. Choi, op. cit., p. 249.
- <sup>30</sup> Y.K. Choi, op. cit., p. 249.
- <sup>31</sup> A.J. Greimas & J. Courtés, 1982, op. cit., p. 249.
- <sup>32</sup> K. Elam, *The Semiotics of Theatre and Drama*, London, Routledge, 1994 (1st ed., Methuen 1980), p. 63.
- <sup>33</sup> R. Silverstone, The Medium is the museum: on objects and logics in times and spaces in *Towards the Musuem of the future*, R. Miles and L. Zavala, ed., London & New York, Routledge, 1994, p. 174.
- <sup>34</sup> U. Eco, *La Struttura Assente*, Milano, Bompiani, 1994 (1st ed., 1968).

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