JMR

BURSA ULUDAĞ UNIVERSITY JOURNAL OF MOSAIC RESEARCH

AIEMA - TÜRKİYE

VOLUME 12 2019

Bursa Uludağ University Press
Bursa Uludağ University Mosaic Research Center
Series - 3

Bursa Uludağ Üniversitesi Yayınları
Bursa Uludağ Üniversitesi Mozaik Araştırmaları Merkezi
Serisi - 3

JMR - 12

JMR

Volume 12

2019

AIEMA - Türkiye is a research center that aims to study, introduce and constitude a data bank of the mosaics from the prehistoric times till today. The best presentation of the mosaics of Turkey is the ultimate goal of this center functioning depending on AIEMA. A data bank of Turkey mosaics and a corpus including Turkey mosaics are some of the practices of the center. Additionally, this center also equips a periodical including the art of ancient mosaics and original studies namely JMR.

The JMR (Journal of Mosaic Research) is an international journal on mosaics, annually published by the Bursa Uludağ University Mosaic Research Centre. The aim of this journal is to serve as a forum for scientific studies with critical analysis, interpretation and synthesis of mosaics and related subjects. The main matter of the journal covers mosaics of Turkey and other mosaics related to Turkey mosaics. Besides, the journal also accommodates creative and original mosaic researches in general. Furthermore, together with articles about mosaics, the journal also includes book presentations and news about mosaics.

JMR is a refereed journal. The articles sent to our journal are scanned with the "Ithenticate" plagiarism program, and the referee evaluation process is initiated according to the report result received from the program.

The manuscripts can be written in English, German, French or Turkish. All authors are responsible for the content of their articles.

JMR is indexed as a full text by EBSCO since 2009; by TÜBİTAK - ULAKBİM Social Sciences Databases since 2014 and by Clarivate Analytics (Thomson Reuters) - Emerging Sources Citation Index (ESCI) since 2016. Articles are published with DOI number taken by Crossref.

JMR is published each year in November.

The abbreviations in this journal are based on German Archaeological Institute publication criterions, Bulletin de l'Association international pour l'Etude de la Mosaique antique, AIEMA - AOROC 24.2016, La Mosaique Gréco-Romaine IX and Der Kleine Pauly.

AIEMA - Türkiye, prehistorik dönemden günümüze kadar uzanan zaman süreci içerisindeki mozaikler hakkında bilimsel çalışmalar yapmayı, bu mozaikleri tanıtmayı ve söz konusu mozaikler hakkında bir mozaik veri bankası oluşturmayı amaçlayan bir araştırma merkezidir. AIEMA'ya bağlı olarak, Türkiye mozaiklerinin en iyi şekilde sunumu, bu merkezin işleyişinin nihai hedefidir. Türkiye mozaik veri bankası ve Türkiye mozaiklerini de içeren bir korpus hazırlanması çalışmaları, merkezin faaliyetlerinden bazılarıdır. Ayrıca, merkezin, antik mozaikler hakkında özgün çalışmaları içeren JMR (Journal of Mosaic Research) adında bir süreli yayını vardır.

JMR (Journal of Mosaic Research) Dergisi, her yıl Bursa Uludağ Üniversitesi Mozaik Araştırmaları Merkezi tarafından, mozaikler konusunda yayınlanan uluslararası bir dergidir. Bu derginin amacı, mozaikler hakkında eleştirel bir analiz, yorumlama, mozaik ve onunla ilgili konuların sentezi ile bilimsel çalışmalar için bir platform oluşturmaktır. Derginin temel konusu, Türkiye mozaikleri ve Türkiye mozaikleriyle ilişkili mozaiklerdir. Bunun yanında, dergi yaratıcı ve özgün mozaik araştırmaları içeren diğer mozaiklerle ilgili makaleleri de kabul etmektedir. Ayrıca dergide, mozaikler hakkındaki makalelerle birlikte, kitap tanıtımları ve haberler de bulunmaktadır.

JMR hakemli bir dergidir. Dergimize gönderilen makaleler, "Ithenticate" intihal programı ile taranmakta olup, programdan alınan rapor sonucuna göre hakem değerlendirme süreci başlatılmaktadır.

Makaleler İngilizce, Almanca, Fransızca ve Türkçe dillerinde yazılabilir. Dergide yayınlanan makalelerin sorumluluğu makale sahiplerine aittir.

JMR, 2009 yılından itibaren EBSCO tarafından tam metin olarak, 2014 yılından itibaren TÜBİTAK - ULAKBİM Sosyal Bilimler veri tabanları tarafından ve 2016 yılından itibaren ise Clarivate Analytics (Thomson Reuters) - Emerging Sources Citation Index (ESCI) tarafından taranmaktadır. Makaleler, Crossref'ten alınan DOI numarası ile yayınlanmaktadır.

JMR, her yıl Kasım ayında yayınlanmaktadır.

Bu dergideki makalelerde kullanılacak olan kısaltmalar Alman Arkeoloji Enstitüsü yayın kuralları, Bulletin de l'Association international pour l'Etude de la Mosaique antique, AIEMA - AOROC 24.2016, La Mosaique Greco Romaine IX ve Der Kleine Pauly dikkate alınarak yapılmalıdır.

Journal of Mosaic Research
ISSN 1309-047X
E-ISSN 2619-9165

Printed by / Baskı
12.matbaa
İbrahim Karaoğlanoğlu Cad. No: 35 Kat: 1
34418 Seyrantepe / Kağıthane-İstanbul
Tel: +90 212 281 25 80; www.onikincimatbaa.com
Certificate No: 33094

For detailed information please visit website / Detaylı bilgi için lütfen web sitesini ziyaret ediniz:

http://arkeoloji.uludag.edu.tr/JMRe/

Address / Adres:
Bursa Uludağ University / Bursa Uludağ Üniversitesi
Faculty of Art and Sciences / Fen Edebiyat Fakültesi
Department of Archaeology / Arkeoloji Bölümü
16059 - Nilüfer / BURSA – TÜRKİYE

Tel & Fax: + 90 224 2941892
E.mail: mosaicsjournal@gmail.com
aiematurkey@uludag.edu.tr
Facebook: @journalofmosaicresearch
Instagram: @journalofmosaicresearch
Twitter: @mosaicsresearch

CONTENTS

JOURNAL OF MOSAIC RESEARCH

DOI: 10.26658/jmr.599897 JMR 12, 2019 1-16

Bases de Données et représentation spatiale des mosaïques romaines du Maroc

Fas Mozaiklerinin Mekânsal Temsilleri ve Veritabanları

Nissma BOUZOUBAA* - Abdelilah DEKAYIR**

(Received 10 January 2018, accepted after revision 16 August 2019)

Abstract

Databases and Spatial Representation of Moroccan Roman Mosaics

Morocco boasts a rich and extensive heritage of Roman mosaics. Each of these mosaics is assigned a very detailed record documenting their discovery, dimensions, state of conservation, and so on. A good number of the mosaics have been removed from their original site and are currently in storerooms awaiting restoration. The objective of this project is to create a GIS database that will collate all the records for each of these mosaics. Geo-referencing software (ArcGIS) can be used to view the mosaics in situ. The creation of such a database will make it easier to access information about each mosaic and to facilitate management and decision making.

Keywords: *Databases, ArcGis, access, Roman Mosaic, Morocco.*

Öz

Fas, zengin ve geniş bir Roma mozaiği mirasına sahiptir. Bu mozaiklerin her birinin keşiflerini, boyutlarını, korunma durumlarını ve benzeri özelliklerini belgeleyen çok ayrıntılı bir kaydı yapılmaktadır. Mozaiklerin pek çoğu orijinal alanlarından kaldırılmıştır ve şu anda restorasyonlarının yapılması için depolarda bekletilmektedir. Bu projenin amacı, bu mozaiklerin her biri için tüm kayıtların düzenlenebileceği bir CBS veritabanı oluşturmaktır. Mozaikleri yerinde görüntülemek için coğrafi referans yazılımı (ArcGIS) kullanılabilir. Böyle bir veri tabanının oluşturulması, her mozaik hakkında bilgiye ulaşmayı, yönetimi ve karar vermeyi kolaylaştıracaktır.

Anahtar Kelimeler: *Veritabanları, ArcGis, erişim, Roma Mozaiği, Fas.*

* Nissma Bouzoubaa, Equipe Géoexplorationset Géotechniques, Université Moulay Ismail, Meknès- Maroc. ORCID ID: https://orcid.org/0000-0001-6166-3447. E-mail: nissma.bouzoubaa@gmail.com

** Abdelilah Dekayir, Equipe Géoexplorations et Géotechniques, Université Moulay Ismail, Meknès- Maroc. ORCID ID: https://orcid.org/0000-0001-6902-2855. E-mail: dekayir@yahoo.fr

Introduction

Volubilis, Lixus et Banasa comptent parmi les plus importants sites antiques du Maroc (Fig. 1). Différentes dynasties se sont succédé contribuant au développement du patrimoine de ces cités.

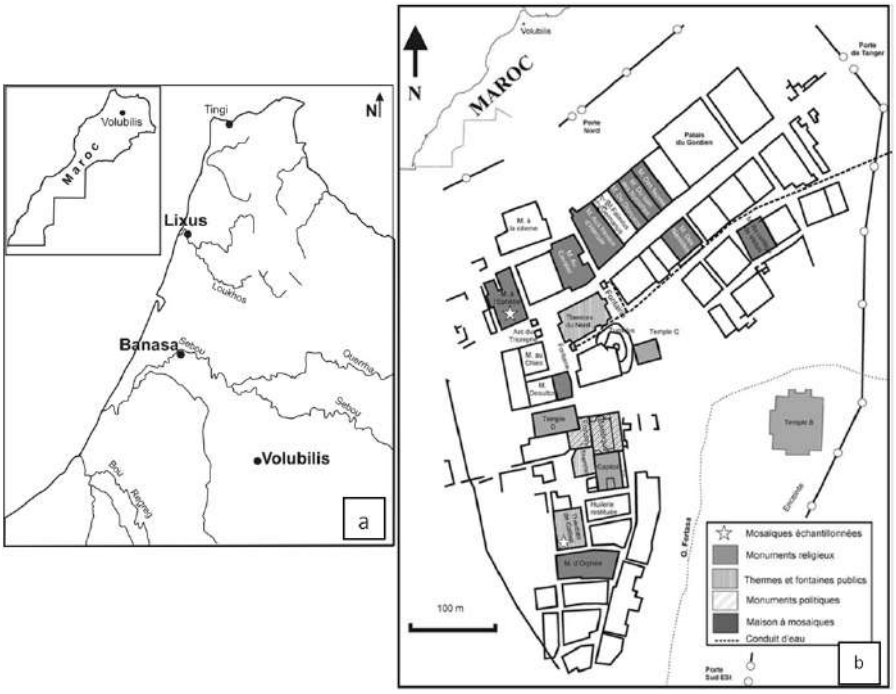


Figure 1
(a) : Localisation géographique des sites du Maroc antique. (b) : plan des différentes maisons de Volubilis.

L'époque romaine a marqué l'architecture de ces sites par l'édification d'édifices civiques: forum, théâtre, amphithéâtre, basilique, capitole, temples ; d'édifices culturels : arc de triomphe, de somptueuses maisons à péristyle, des thermes, des fontaines publiques, des huileries, des boulangeries ainsi qu'un système d'adduction d'eau potable et d'évacuation des eaux usées. Cette grandeur architecturale qui incarne la civilisation romaine, s'accompagne d'un développement de l'art décoratif, marqué par la mise en œuvre de pavements de mosaïques qui ornaient les maisons, les bains et thermes traduisant ainsi la finesse, le savoir-faire et le savoir vivre des romains.

La richesse de ces sites tient aux vestiges monumentaux et aux mosaïques qui séduisent par les motifs, les couleurs des tesselles, les thèmes traités inspirés de la mythologie ou de la vie réelle.

Les pavements de mosaïques présents sur ces trois sites comptent parmi les plus beaux du Maroc (Chatelain 1935; Zouhal 1991; Limane et al. 1998; Arharbi 2008), car malgré leur petit nombre – comparé aux autres sites méditerranéens – ils se caractérisent par l'influence de l'art romain mais également par l'apport des traditions locales, phénico-puniques et hellénistique.

Toutefois, les informations sur le patrimoine mosaïstique du Maroc sont éparpillées, et leur accessibilité est limitée par la dispersion des publications et par le manque d'homogénéité des descriptions (très détaillées ou au contraire hâtives parfois même inédites). Ces arguments ont conduit à développer une base de données qui englobera la totalité des mosaïques de ces trois sites afin de les faire connaitre au grand public et procéder ainsi à leur valorisation des points de vue historique, culturel et touristique mais aussi de rendre possible leur exploitation scientifique.

Dans cette optique, le présent travail consiste à présenter une base de données développée sur le logiciel Access qui aidera à centraliser, recenser et archiver les données relatives à chacune des mosaïques appartenant à ces trois sites.

Le Géoréférencement des pavements de mosaïques de Volubilis (*in situ*), mis en place grâce au logiciel de répartition spatiale (ArcGis) permettra leur visualisation dans l'espace à l'échelle du site archéologique (McCool 2014).

I) Les sites comprenant des Mosaïques au Maroc

Au Maroc, les mosaïques sont particulièrement présentes sur les sites antiques de Volubilis, Banasa et Lixus. Ces sites sont localisés dans la partie nord-ouest du pays sur des vastes plaines fertiles, drainées par des rivières (Fig. 1a). Le site de Volubilis est situé dans la partie ouest des piémonts des Rides sud-rifaines, sur une superficie d'une dizaine d'hectares. Il présente un nombre considérable de maisons, dont la majorité est orné de mosaïques de tesselles (Fig. 1b).

Le site antique de Banasa est situé au centre du bassin d'Algharb à 60 km environ au Nord de la ville de Kénitra. Il s'étale sur une vaste plaine fertile drainée par l'oued Sebou(Fig. 2a). Ce site renferme des édifices de valeur civile importante, car il se trouve entre Volubilis au Sud et Banasa au Nord (Fig. 2b).

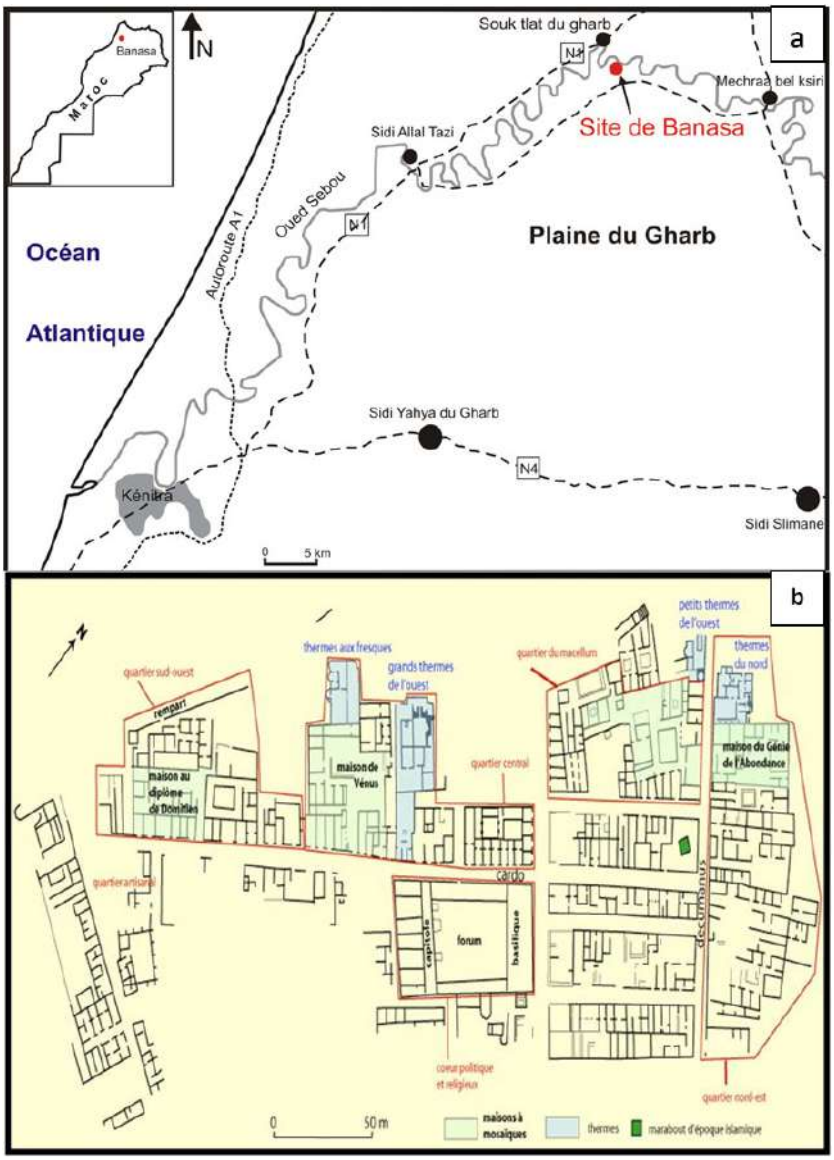


Figure 2
(a) : situation géographique du site antique de Banasa.
(b) : plan du site antique de Banasa.

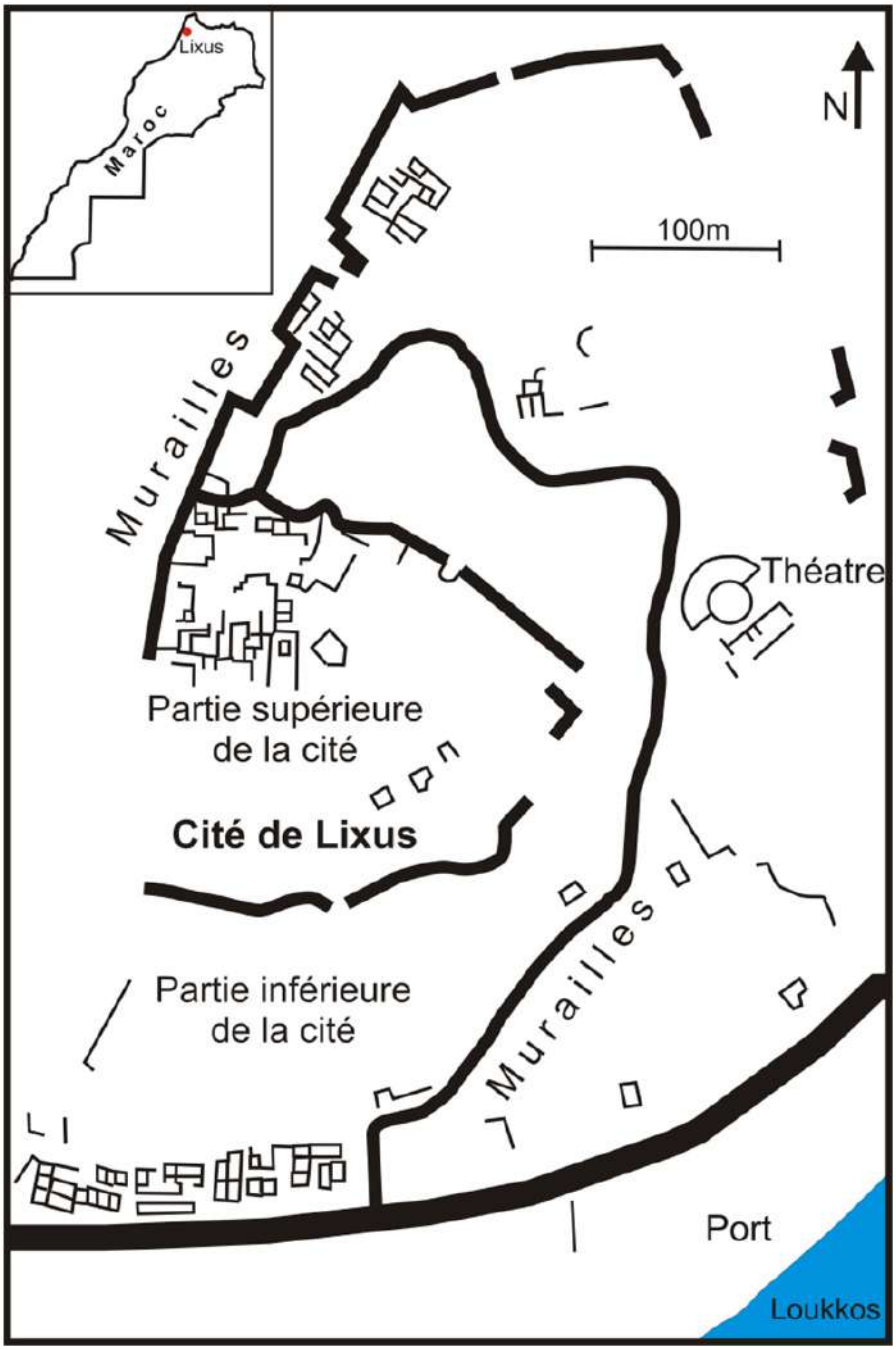


Figure 3
Carte du site antique de Lixus.

Le site antique de Lixus est situé à quelques kilomètres au nord-ouest du site de Banasa, sur les rives de l'oued Loukkos. Ce site renferme des édifices civils, sa position stratégique entre la mer et l'oued Loukkos permettait un développement économique certain. (Fig.3).

II) Description de la base de données adoptée

La base de données sur les mosaïques et maisons des sites antiques a été créée sur Access qui est un programme de gestion de base de données relationnelle (SGBD), qui offre un ensemble d'outils permettant de saisir, de mettre à jour, de manipuler, d'interroger et d'imprimer les données.

Les finalités de cette base de données sont l'enregistrement, le stockage et la

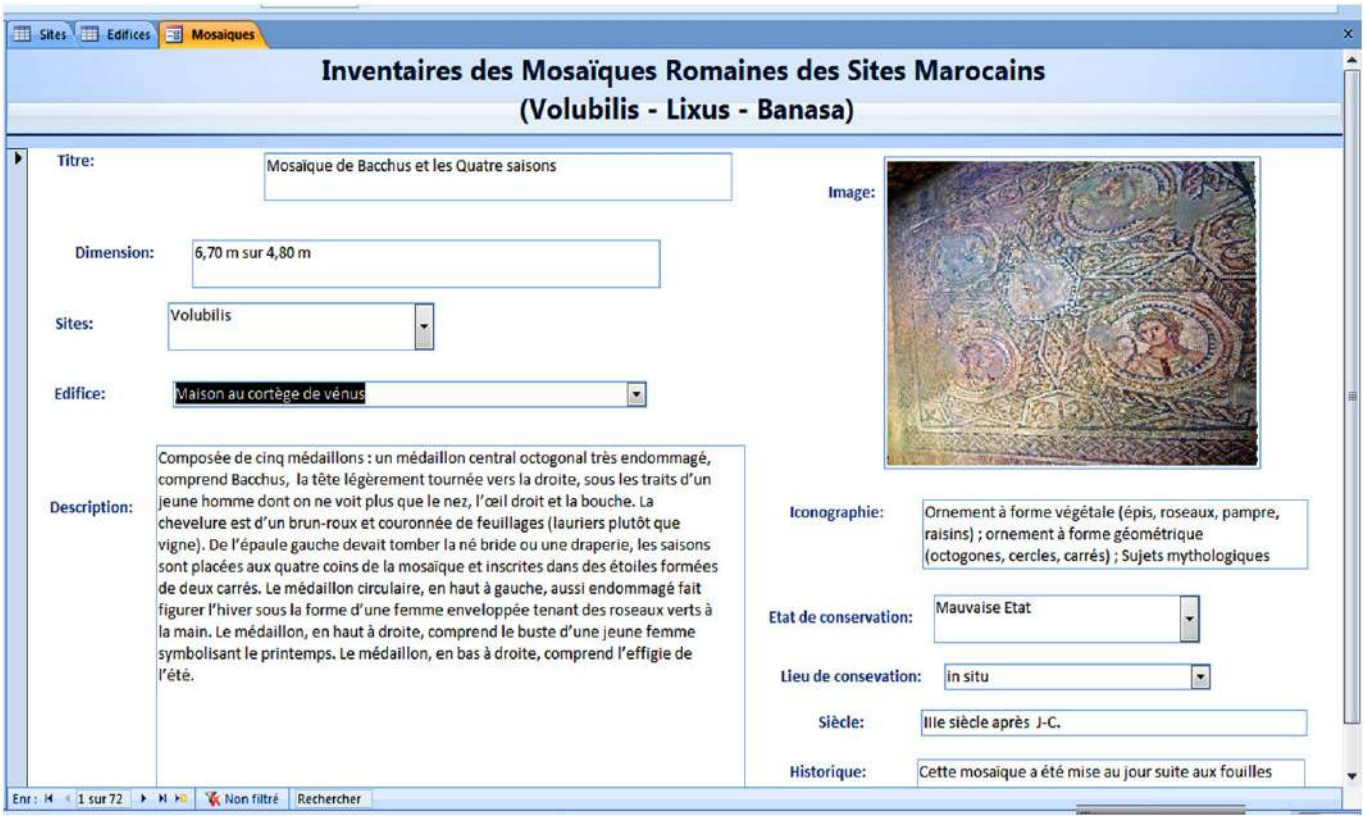
gestion de toutes les informations relatives aux mosaïques actuellement découvertes dans les plus importants sites archéologiques du Maroc (Volubilis, Lixus et Banasa), dans l'intention de retrouver instantanément les données recherchées, de mener des recherches et de procéder facilement à des mises à jour. Elle permettra également de procéder à des révisions et des ajouts de nouvelles données.

Les informations recueillies pour chaque mosaïque (Limane et al. 1998) sont structurées de la manière suivante (Tableau I - Fig. 4)

Tableau I
Représentation de l'architecture de la base de données adoptée sur le site de Volubilis.

Intitulé	Désignation
Titre	Le Nom affecté à la mosaïque
Dimension	Dimension en mètres (m) de la mosaïque (Longueur x Largeur)
Sites	Nom du Site archéologique où est située la mosaïque
Edifice	L'endroit où la mosaïque est localisée
Description	Description exhaustive de la mosaïque
Image	Photo actualisée de la mosaïque
L'iconographie	Description des différentes formes qui ornent le pavement de mosaïques (ornements à forme végétale, géométrique) en plus des sujets figurés : mythologiques
Etat de conservation	Etat de conservation actuel de la mosaïque
Lieu de conservation	L'emplacement actuel de la mosaïque (*in situ* – musées – réserves)
Siècle	Datation de la mosaïque
Historique	Historique de la mise à jour de la mosaïque

Figure 4
Fenêtre montrant la structuration de données sur Access.



1) Les éléments de la base de données

a) Les tables

La base de données est composée de quatre tables. Chacune de ces tables est créées de manière à contenir des informations spécifiques réparties en champs et enregistrements.

• Table site

Cette table (Fig. 5), représente les occurrences des sites, caractérisées par le nom de chaque site (entre 1 et 3).

Exemple :

“id_site” : 1, “nom_complet” « Volubilis »

“id_site” : 2, “nom_complet” « Lixus »

“id_site” : 3, “nom_complet” « Banasa »

Figure 5
Fenêtre montrant la création de la table site sur Access.

• Table édifice

Cette table (Fig. 6), représente les occurrences des édifices qui contiennent la mosaïque, caractérisées par le nom de chaque édifice (entre 1 et 48).

Exemple :

“id_édifice” : 3, “nom_complet” « Maison aux travaux d’Hercule »

“id_édifice” : 16, “nom_complet” « Thermes aux fresques, porche (salle 1)»

“id_site” : 12, “nom_complet” « Maison de Mars et Rhéa »

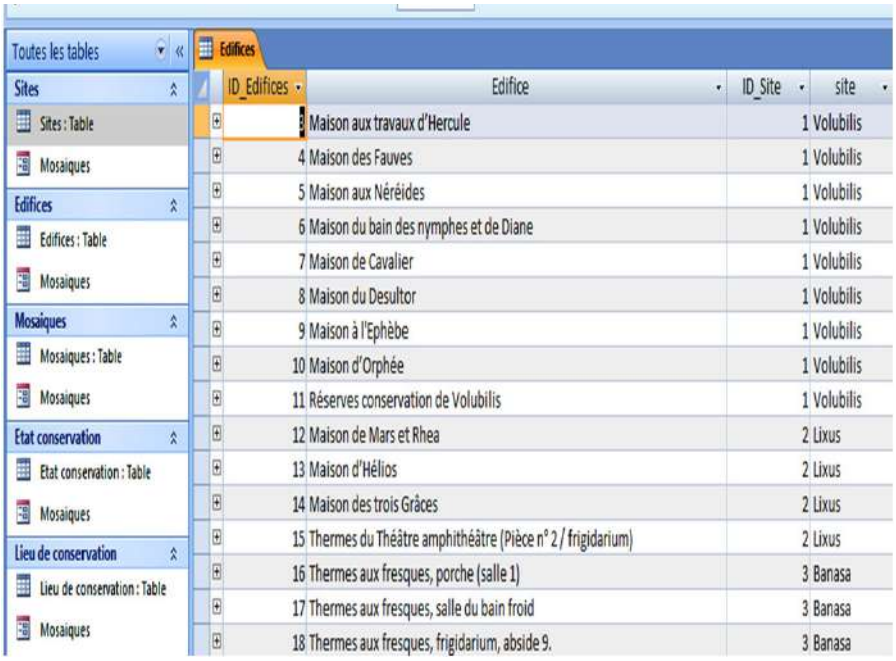


Figure 6
Fenêtre montrant la création de la table édifice sur Access.

• Table état de conservation

Cette table (Fig. 7), représente l’état de conservation de la mosaïque, caractérisée par un chiffre allant de 1à 6.

Exemple :

“id_etatcons” :1, “ Etat_Conservation” « Très mauvais état »

“id_etatcons” :2, “ Etat_Conservation” « Mauvais état »

Figure 7
Fenêtre montrant la création de la table état de conservation sur Access.

“id_etatcons” :3, “ Etat_Conservation” « Moyen état »

“id_etatcons” :4, “ Etat_Conservation” « Bon état »

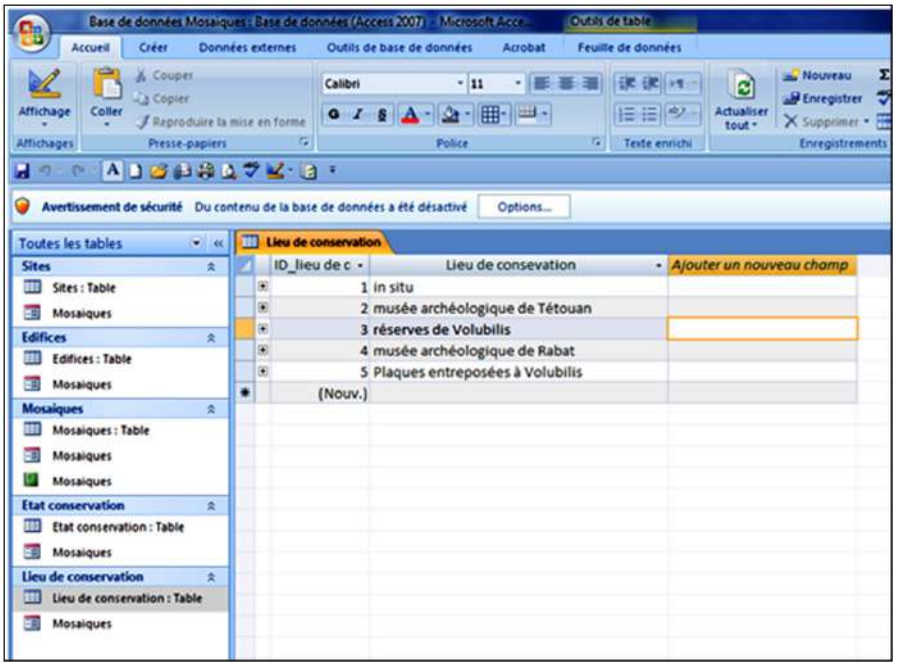
“id_etatcons” :5, “ Etat_Conservation” « Quelques plaques »

“id_etatcons” :6, “ Etat_Conservation” « Quelques fragments»

• Table lieu de conservation

Cette table (Fig. 8), représente les occurrences du lieu où est conservée la mosaïque, caractérisées par un chiffre allant de 1 à 5.

Figure 8
Fenêtre montrant la création de lieu de conservation sur Access.



Exemple :

“id_lieucons” :1, “ Lieu_Conservation” « in situ »

“ id_lieucons” :2, “ Lieu_Conservation” «musée archéologique de Tétouan»

“ id_lieucons” :3, “ Lieu_Conservation” « réserves de Volubilis »

“ id_lieucons “ :4, “ Lieu_Conservation” « musée archéologique de Rabat »

“ id_lieucons “ :5, “ Lieu_Conservation” « plaques entreposées à Volubilis »

• Table Mosaïque

La table mosaïque (Fig. 9), renferme la globalité des données sur les mosaïques.

b) Relations entre les tables

Les relations (Fig. 10), permettent de relier les tables entre elles sur des champs communs, afin d’éviter la redondance (Ex : la table « édifice » est liée à la table « mosaïques » ce qui permet de relier la mosaïque à l’édifice où elle se trouve).

Chacune des cinq tables, est définie par une clé primaire qui permet d’identifier chaque enregistrement de manière unique.

L’intégrité référentielle doit être appliquée, ce qui permet de vérifier que les champs liés dans les deux tables sont parfaitement identiques par leur forme (type de données) et leur contenu (1 - ∞).

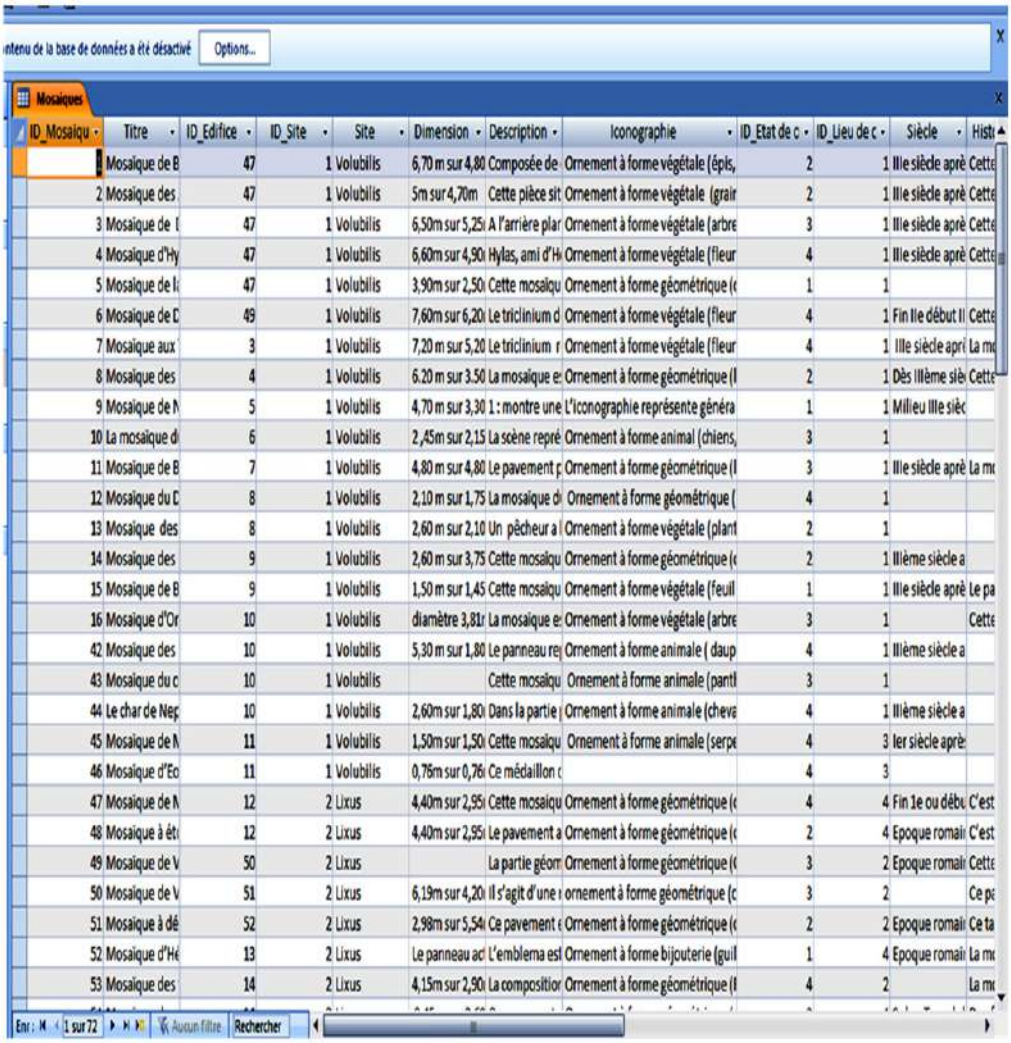


Figure 9
Fenêtre montrant la table mosaïques sur Access.

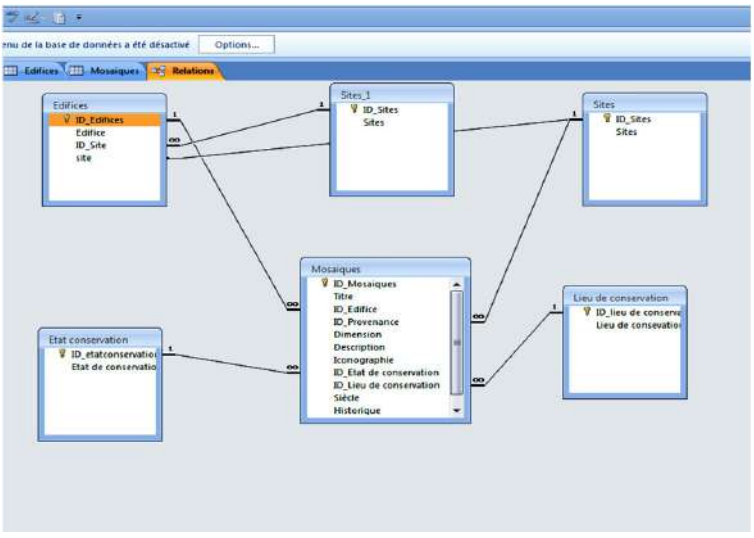


Figure 10
Fenêtre montrant les relations entre les tables établies sur Access.

c) Les Formulaires

Ils permettent de consulter, saisir et modifier rapidement les informations de la base de données, en les présentant sous un format attrayant et pratique. Ils affichent généralement, un ou plusieurs enregistrements à la fois et proposent des zones de saisie indiquant clairement où les données sont placées.

À travers les barres de défilements encadrées en rouge dans la figure (Fig. 11), on peut réaliser des filtres par « nom de site » ou bien par « édifices », « état de conservation » ou même « lieu de conservation ».

• Exemple de filtre

Avant l'exécution du filtre, on remarque que le formulaire indique en bas 72 enregistrements, c'est-à-dire 72 mosaïques qui sont renseignées sur la base de données(voir a – Fig. 11). On remarque également une mention à droite indiquant qu'il n'y a pas de filtre (voir b - Fig. 11).

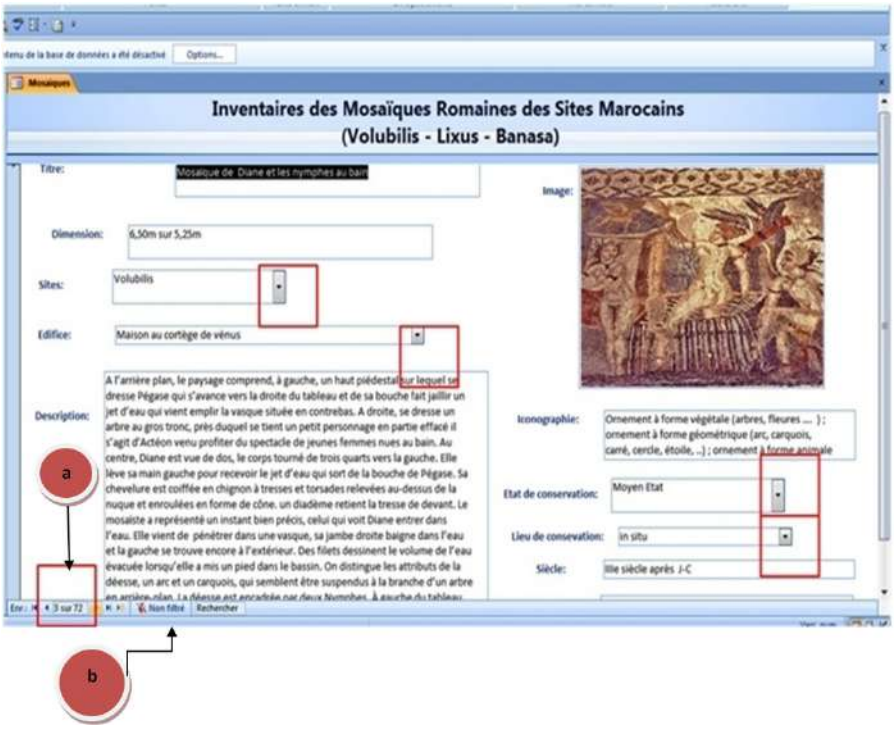


Figure 11
Fenêtre montrant le Formulaire avant l'exécution du Filtre.

Le filtre est appliqué de manière à avoir uniquement les mosaïques existantes dans le site de Volubilis. Le filtre fait ressortir uniquement les mosaïques qui sont enregistrées au niveau du site de volubilis (Voir c - Fig. 12). On remarque également que la mention qui indiquait non filtré dans la Fig. 11(b) a été remplacé par la mention filtré dans la Fig. 12 (d).

Figure 12
Fenêtres montrant l'application du filtre sur les mosaïques des sites sur Access.

2) Interrogation de la base de données

a) Les Requêtes

Les requêtes permettent d'extraire des informations de la base de données, dont l'utilisateur a besoin en définissant des critères destinés à spécifier le type d'informations recherchées (Figs.13-14).

- Exemple de création de requêtes

Le lancement d'une requête se réalise, afin de sélectionner toutes les mosaïques du site de Volubilis dont l'iconographie contient des "formes végétales".

- Résultat de la requête

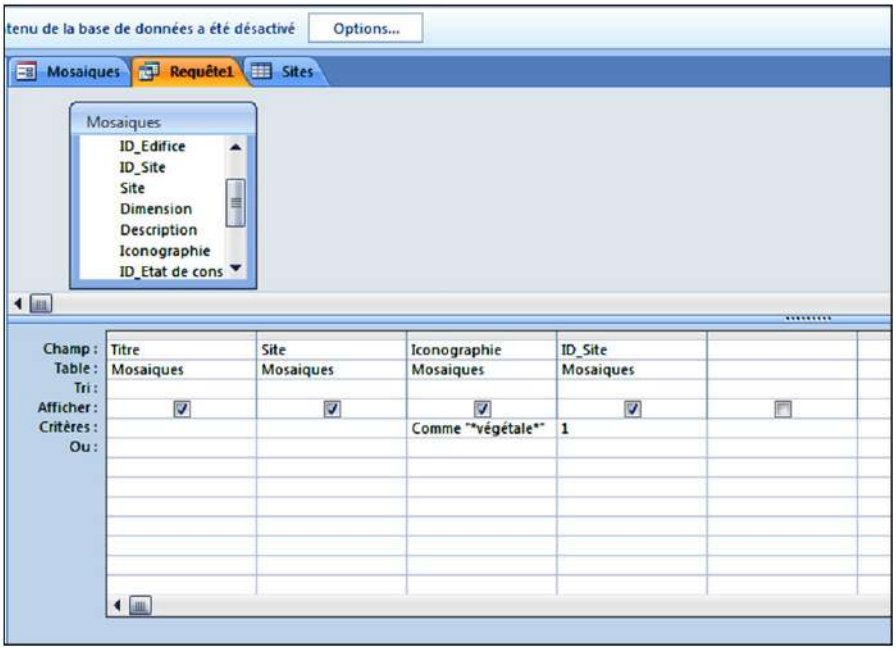


Figure 13
Fenêtre montrant le lancement d'une requête sur Access.

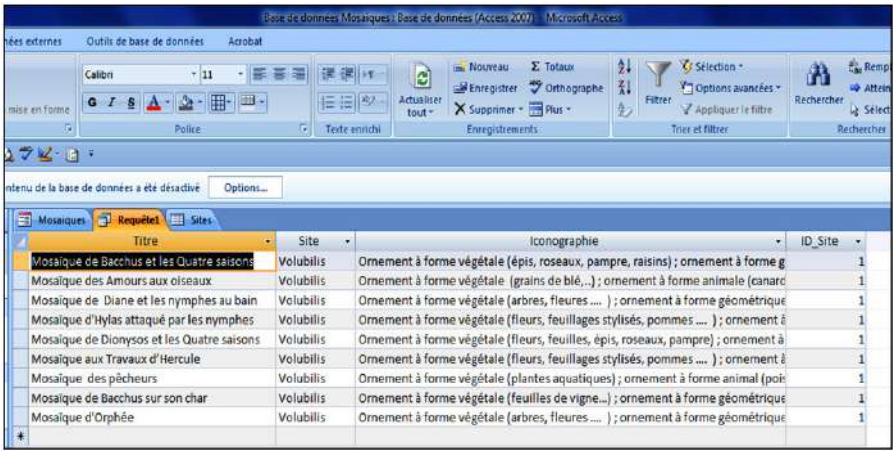


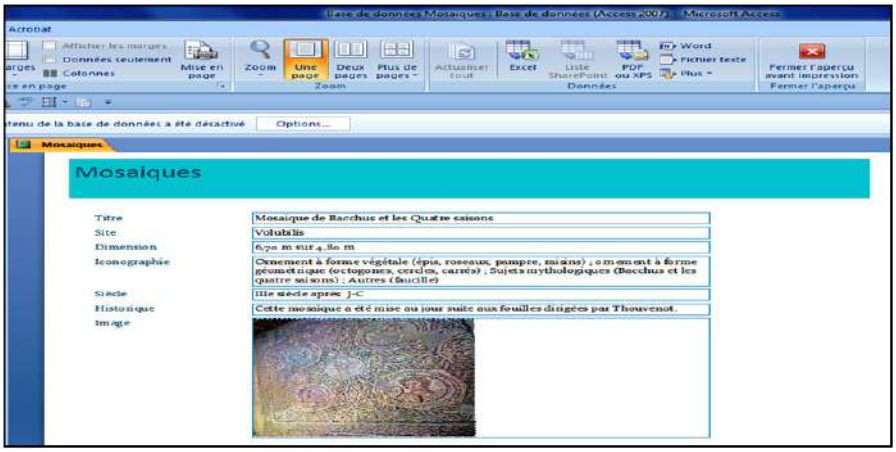
Figure 14
Fenêtre montrant le résultat d'une requête sur Access.

3) Les états

Les états permettent de synthétiser les informations de la base de données dans un document d'aspect professionnel, afin de pouvoir analyser, afficher et imprimer les données (Figs. 15-16).

Les états permettent également d'exporter les données dans d'autres formats de fichiers et convertir au format PDF ou XPS.

Figure 15
Fenêtre montrant un exemple de création d'état sur Access.



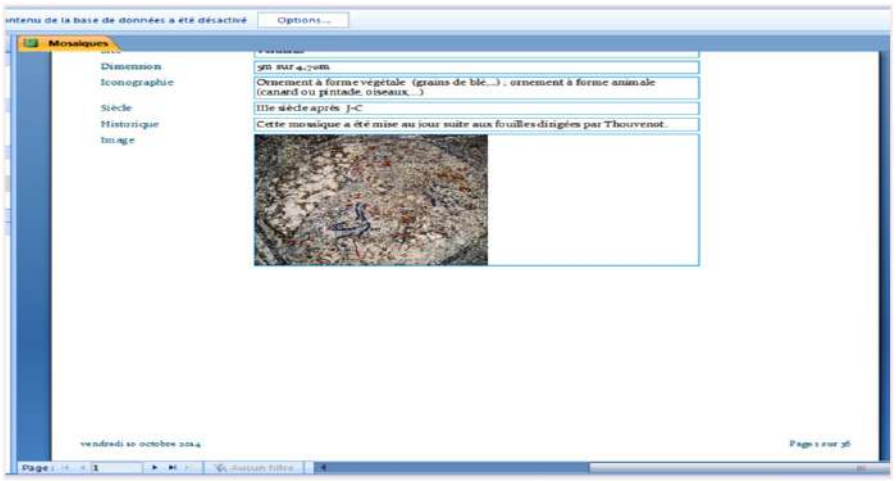


Figure 16
Fenêtre montrant prêt pour l'impression.

III) Spatialisation des données

La spatialisation des données se fait par l'utilisation des Systèmes d'Informations Géographiques (SIG) : L'outil informatique qui permet d'intégrer, de localiser, d'analyser et de représenter des données en faisant des cartes thématiques par la superposition de données sur un fond Google Earth.

L'objectif de ce travail est d'inventorier ces mosaïques à l'aide de fiches techniques sous forme de base de données qui résument l'ensemble des interventions réalisées jusqu'à nos jours.

Ce projet permettra aussi de caler ces mosaïques dans l'espace, en les important dans un SIG et prennent par la suite leurs places déterminées selon les coordonnées GPS, ce qui rend facile leur localisation à l'échelle du site. Il permettra un accès simple à l'information et une aide à la décision des intervenants (conservateurs, restaurateurs etc.).

Les mosaïques sont localisées dans tous les quartiers résidentiels, offrant ainsi une idée sur les la présence de riches demeures (architecture domestique) et sur le statut social de leurs habitants (Fig. 17).

Différentes étapes de l'élaboration de la base de données

La base de données a été établie sous ArcGIS 9.3, par la création des tables attributaires apportant les informations d'identification et de caractérisation des maisons et de leurs mosaïques.

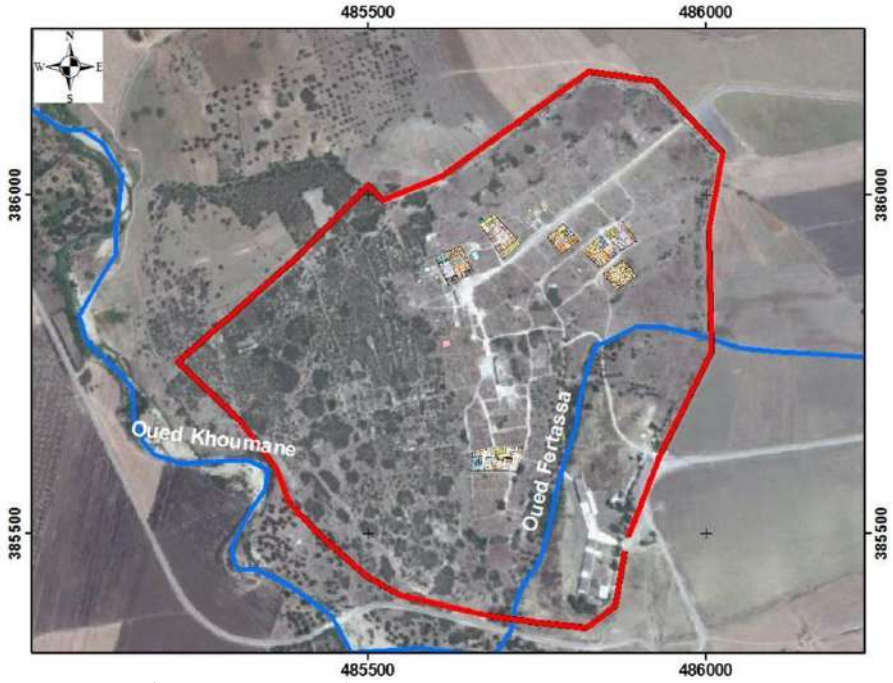


Figure 17
Limite du site antique de Volubilis tracée sur un fond Google Earth.

• Première étape : Le calage

Le calage est la première étape qui doit être effectué, pour faire monter un projet sur ArcGIS. Dans notre cas d'étude, une image du site de Volubilis a été prise depuis Google Earth puis, géoréférencée par la méthode classique de quatre points dont les coordonnées sont extraites de la carte topographique (Fig. 18). Cette opération permet d'établir une relation entre l'emplacement de l'entité affichée (image) et sa position exacte dans un système de référence spatiale approprié à la zone d'étude et par conséquent la relation de calage entre les coordonnées représentées et l'entité (image) sur la carte sera correcte.

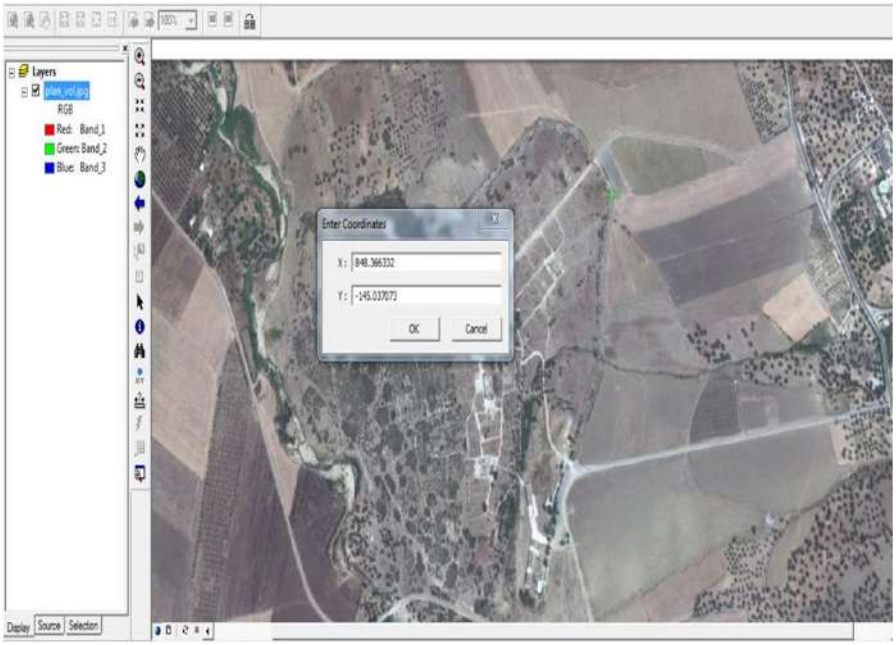


Figure 18
Fenêtres montrant la procédure de géoréférencement sous ArcGIS.

Cette étape s'applique aussi sur tous les fonds d'archives (images, cartes, etc.) introduits dans ArcGIS, afin de réaliser le projet de digitalisation et de création de bases de données qui concernent les différents édifices romains du site de Volubilis.

• Deuxième étape : La digitalisation

La digitalisation consiste à créer des shapefiles sur ArcCatalog de type (point, polygone, polyline, etc). C'est une opération de transformation du mode vectoriel au mode Raster, pour avoir la possibilité d'intégrer les différentes informations de chaque shapefile crée via la table attributaire afin d'exécuter une analyse spatiale.

Les maisons du site de Volubilis ont été digitalisées (Fig. 19). Pour chaque maison, une base de données est établie sous forme de table attributaire renfermant toutes les données sur la maison (Fig. 20).

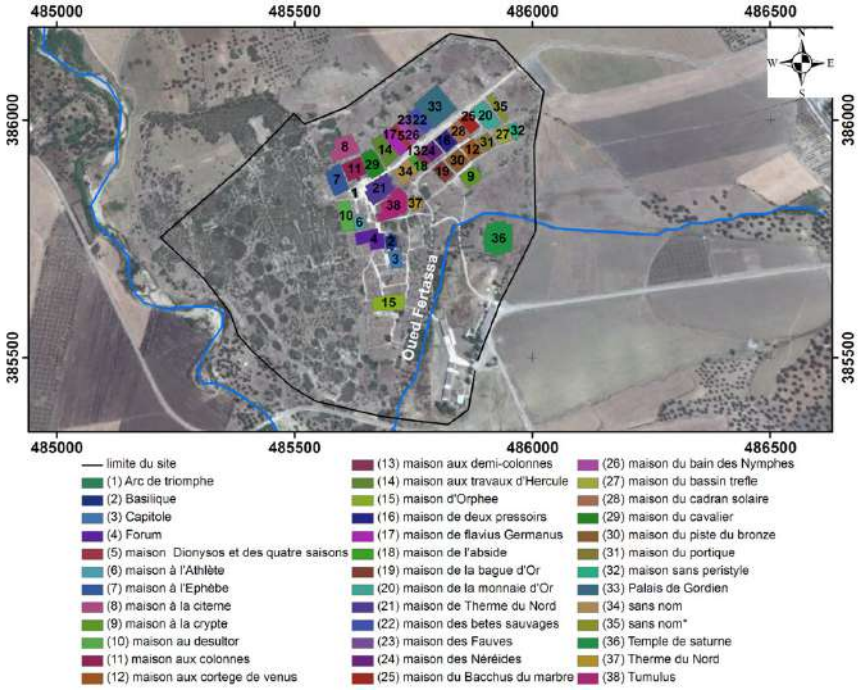


Figure 19
Représentation des maisons à mosaïques inventoriées et digitalisées du site de Volubilis.

FID	Shape *	Id	nom	surface
0	Polygon	0	maison de discipline	3049,54
1	Polygon	0	Palais de Gordien	4420,2798
2	Polygon	0	maison des betes sauvages	1372,03
3	Polygon	0	maison des Fauves	878,52301
4	Polygon	0	maison du bain des Nymphes	1138,4399
5	Polygon	0	maison Dionysos et des quatre saisons	816,84302
6	Polygon	0	maison de flavius Germanus	1281,79
7	Polygon	0	maison aux travaux d'Hercule	1938,5601
8	Polygon	0	maison de la monnaie d'Or	1923,6
9	Polygon	0	maison du Bacchus du marbre	1056,85
10	Polygon	0	maison du cadran solaire	1235,62
11	Polygon	0	maison de deux pressoirs	1219,33
12	Polygon	0	maison des Néréides	1142
13	Polygon	0	maison aux demi-colonnes	531,534
14	Polygon	0	maison de l'abside	536,67999
15	Polygon	0	maison sans peristyle	627,71698
16	Polygon	0	maison du bassin trefle	1032,85
17	Polygon	0	maison du portique	973,93201
18	Polygon	0	maison aux cortege de venus	1164,0699
19	Polygon	0	maison du piste du bronze	1380,26
20	Polygon	0	de la bague d'Or	1040,42
21	Polygon	0	maison à la crypte	1227,89
22	Polygon	0	la maison aux colonnes	1850,0601
23	Polygon	0	maison d'Orphee	2070,1499
24	Polygon	0	maison à l'Ephèbe	2042,64
25	Polygon	0	maison du cavalier	1882,71
26	Polygon	0	sans nom	1517,84
27	Polygon	0	sans nom	786,67603
28	Polygon	0	maison de Therme du Nord	2447,3501
29	Polygon	0	Therme du Nord	624,11102
30	Polygon	0	Temple de saturne	3746,5701
31	Polygon	0	maison au desultor	1722,98
32	Polygon	0	maison à l'Athlète	666,48199
33	Polygon	0	Basilique	722,021
34	Polygon	0	Capitole	995,43597
35	Polygon	0	Forum	1991,54
36	Polygon	0	Arc de triomphe	146,565
37	Polygon	0	maison à la citerne	2225,6799
38	Polygon	0	Tumulus	2979,5701

Figure 20
Table attributaire des maisons à mosaïques de Volubilis.

L'inventaire et le catalogage numérique des mosaïques d`un certain nombre de maisons représentent le but capital de ce travail. Cette caractérisation est basée sur la création d`une base de données, qui rassemble et organise les différentes informations comme ; le nom, l'édifice, la dimension, l`iconographie, l`état de conservation, la photo et la description détaillée de ces mosaïques (Fig. 21).

Afin de repérer et de localiser les mosaïques dans leurs demeures respectives, une visite du site de Volubilis a été réalisée. Durant cette visite, nous avons pu localiser les différentes maisons ainsi que leurs mosaïques (Fig. 22).

• Troisième étape : L'hyperlink

Cette opération vise à construire un lien de commande entre le *shapefile* des mosaïques créées au niveau de l'ArcMap et les photos de mosaïques correspondantes. Cette procédure peut être résumée comme suit :

- Sélectionner d'abord la fonction *lien hypertexte* à partir de l'outil Identifier,

- Faire un clic droit sur le nom d'une fonction, dans le volet gauche de la boîte de dialogue Identifier les résultats, puis cliquer sur ajouter un lien hypertexte (Fig. 23)

- Cliquer sur le lien, vers un document ou un lien vers un chemin URL.

- Cliquer sur le bouton parcourir, pour sélectionner un document ou tapez le chemin URL.

Afin de voir les caractéristiques des liens hypertextes, on doit avoir l'outil *lien hypertexte* sélectionné.

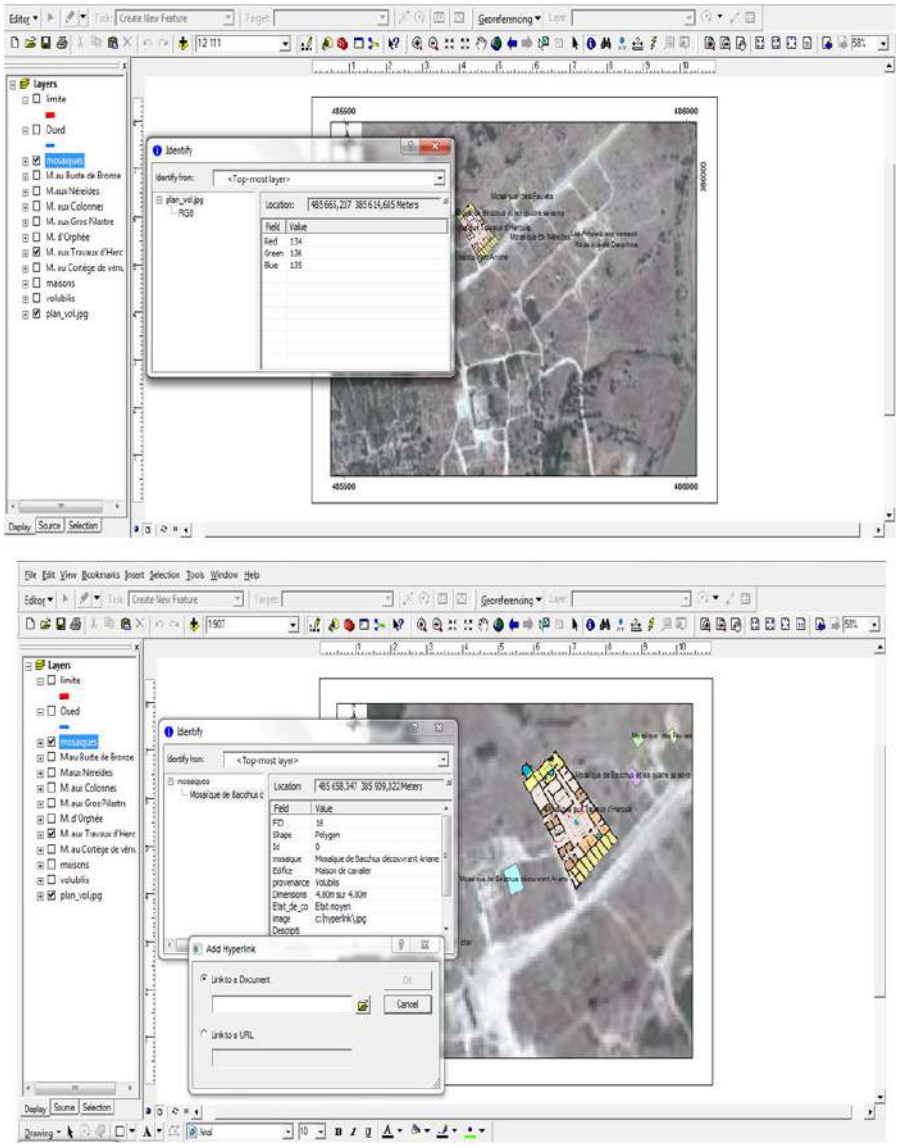
Figure 21
Représentation des mosaïques digitalisées du site antique de Volubilis.

Figure 22
Table attributaire des caractéristiques des mosaïques de Volubilis.

Attributes of mosaques

mosaique	Edifice	provenance	Dimensions	Etat_de_co	image	Historique
Mosaïque de Bacchus et les Quatre saisons 2	Maison au cortège de Vénus	Volubilis	6.70 m sur 4.80 m	Mauvais état	c:\hyperlink\A.jpg	Cette mosaïque a été mise au jour suite aux fouilles dirigées par Thouvenot
Les Amours aux oiseaux	Maison au cortège de Vénus	Volubilis	5m sur 4.70m	Mauvais état	c:\hyperlink\B.jpg	Cette mosaïque a été mise au jour suite aux fouilles dirigées par Thouvenot
Mosaïque de Diane et les nymphes au bain	Maison au cortège de Vénus	Volubilis	6.50m sur 5.25m	Moyen état	c:\hyperlink\C.jpg	Cette mosaïque a été mise au jour suite aux fouilles dirigées par Thouvenot
Mosaïque de Hylas attaqué par les nymphes	Maison au cortège de Vénus	Volubilis	6.60m sur 4.90m	Bon état	c:\hyperlink\D.jpg	Cette mosaïque a été mise au jour suite aux fouilles dirigées par Thouvenot
Mosaïque aux Travaux d'Hercule	Maison aux Travaux d'Hercule	Volubilis	7.20m sur 5.20m	Bien conservés	c:\hyperlink\E.jpg	Cette mosaïque a été mise à jour en 1947
Mosaïque de Néréides	Maison aux Néréides	Volubilis	4.70m sur 3.90	------	c:\hyperlink\F.jpg	----------
Mosaïque d'Orphée	Maison d'Orphée	Volubilis	Diamètre égale à 3.60m	------	c:\hyperlink\F.jpg	Cette mosaïque a été découverte entre 1926 et 1928
Mosaïque de char de Neptune	Maison d'Orphée	Volubilis	2.60m sur 1.60m	Bon état	c:\hyperlink\G.jpg	----------
Mosaïque de la représentation du cirque	Maison au cortège de Vénus	Volubilis	3.90 sur 2.50	Très mauvais état	c:\hyperlink\.jpg	----------
Mosaïque de Dauphins	Maison au cortège de Vénus	Volubilis	----	------	c:\hyperlink\.jpg	----------
Mosaïque de Dauphins 1	Maison d'Orphée	Volubilis	5.30m sur 1.80m	------	c:\hyperlink\.jpg	----------
Mosaïque des pêcheurs	Maison au Dessutor	Volubilis	2.60m sur 2.10m	Mauvais état	c:\hyperlink\.jpg	----------
Mosaïque du dessutor	Maison au Dessutor	Volubilis	2.10m sur 1.75m	Bien conservées	c:\hyperlink\.jpg	----------
Mosaïque de corthare	Maison à l'ephèbe	Volubilis	----	Bien conservées	c:\hyperlink\.jpg	----------
Mosaïque des Néréides	Maison à l'ephèbe	Volubilis	2.80m sur 3.75m	Mauvais état	c:\hyperlink\.jpg	----------
Mosaïque de Bacchus sur son char	Maison à l'ephèbe	Volubilis	1.50m sur 1.45m	Très mauvais état	c:\hyperlink\.jpg	Cette mosaïque a été découvert en 1933 lors du déblaiement de la maison a l'ép
Mosaïque de Bacchus découvrant Ariane	Maison de cavalier	Volubilis	4.80m sur 4.80m	Etat moyen	c:\hyperlink\.jpg	la mosaïque au theme de Bacchus découvrant Ariane a été mise a jour en 1915
Mosaïque de Bacchus et les quatre saisons	Maison dionysos et des quatre saisons	Volubilis	7.95m sur 6.23	Bon état	c:\hyperlink\.jpg	Cette mosaïque a été mise a jour en 1948
Mosaïque du Bain des Nymphes et de Diane surpris par Acéton	Maison du bain des nymphes	Volubilis	2.45m sur 2.15m	---	c:\hyperlink\.jpg	----------
Mosaïque des Fauves	Maison des Fauves	Volubilis	6.20m sur 3.50m	Mauvais état	c:\hyperlink\.jpg	Cette mosaïque a été mise à jour en 1949 lors dela compagne de fouilles dirigée

Figure 23
Technique d'hyperlink appliquée sur les mosaïques et maisons de Volubilis.



Conclusion

Les sites archéologiques du Maroc, comptent un nombre important de mosaïques romaines. Parmi ces mosaïques, un grand nombre a été déposé et placé dans des réserves dans l'attente de leur restauration. D'autres ont été laissées *in situ* et ont subi une dégradation importante comme la mosaïque du Dieu Océan sur le site archéologique de Lixus.

Afin de cataloguer l'ensemble de ce patrimoine, l'outil informatique s'est montré d'une importance capitale. En effet, cette base de données permettra de faire un inventaire détaillé des mosaïques de ce site pour généraliser sur les autres sites du pays.

Cette base de données, permettra un accès instantané à toute la documentation relative de chaque mosaïque (historique des interventions, géométrie, minéralogie, etc.) et sera d'une grande utilité dans la labellisation et l'inventaire des documents des sites archéologiques.

L'utilisation du SIG, permettra la visualisation de ces mosaïques dans l'espace (c'est à dire à l'échelle du site) et l'interrogation couplée de la documentation. Les outils informatiques utilisés (Base de Données sous Access et spatialisation sous ArcGIS) sont d'une utilité primordiale dans la gestion de ce patrimoine et dans l'aide à la décision.

Bibliography – Kaynaklar

Arharbi 2008	R. Arharbi, "Mission archéologique maroco-française de Banasa", Architecture du Maroc 37, 104–107.
Chatelain 1935	L. Chatelain, "Inventaire des mosaïques du Maroc (première partie)", Publications du Service des antiquités du Maroc 1, 67–89.
Limane et al. 1998	H. Limane - R. Rebuffat - D. Drocourt, Volubilis de mosaïque à mosaïque, Casablanca.
McCool 2014	J. P. McCool, "PRAGIS: A Test Case for a Web-BasedArchaeological GIS", JASc 41, 133–139.
Zouhal1991	H. Zouhal, Les Mosaïques de Lixus, mémoire de fin d'études, Institut national des sciences de l'archéologie et du patrimoine, Insap.

DOI: 10.26658/jmr.614841 JMR 12, 2019 17-35

Mosaics from the Bronze Age Necropolis in Gonur Depe, Turkmenistan

Türkmenistan, Gonur Depe, Tunç Çağı Nekropol Mozaikleri

Nadezhda A. DUBOVA[*] - Natalia A. KOVALEVA[**] - Galina E. VERESOTSKAYA[***] - Anatolij M. YUMINOV [****]

(Received 27 March 2019, accepted after revision 30 September 2019)

Abstract

Unique mosaic composition of the end of the third millenium BC from the "Royal Necropolis" of Gonur Depe is describing. Some walls of the underground "hypogea" and so-called "ostensories" as well small originally wooden boxes found in them were decorated by figurative mosaics. These mosaics combine two techniques – painting and inlays (tesserae), which were made from the specially prepared minerals. They also presented the earliest example of using the technique of cutting the edges of the tesserae. Analogies of the images between Gonur Depe and Mari palace in Syria are underlined.

Keywords: *Figurative mosaics, mosaic technology, cutting the edges of tesserae, funeral rights, elite graves.*

Öz

Gonur Depe'deki "Kraliyet Nekropolisi"nde bulunan ve MÖ 3. binyıla tarihlenen özgün mozaikler tanıtılacaktır. Yer altındaki "hipoje" veya "ostensory" olarak adlandırılan mekânların bazı duvarları ve bunların içinde bulunan küçük ahşap kutular figüratif mozaiklerle süslenmişlerdir. Bu mozaiklerin yapımında boyama ve özel hazırlanmış minerallerden oluşan kakma (tessera) tekniği olmak üzere iki teknik kullanılmıştır. Aynı zamanda tesserae kenarlarının kesilmesi tekniğinin en erken örnekleri de bu mozaiklerde görülmektedir. Gonur Depe mozaikleri ile Suriye'deki Mari saray mozaikleri arasındaki figür benzerlikleri vurgulanacaktır.

Anahtar Kelimeler: *Figüratif mozaikler, mozaik teknolojisi, tesseranın kenarlarının kesilmesi, cenaze hakları, elit mezarları.*

[*] Nadezhda A. Dubova, Institute of Ethnology and Anthropology RAS, Moscow, Russia. ORCID ID: https://orcid.org/0000-0002-4340-1037. E-mail: dubova_n@mail.ru

[**] Natalia A. Kovaleva, State Scientific-Research Institute of Restoration, Moscow, Russia. ORCID ID: https://orcid.org/0000-0002-5585-7349. E-mail: kovaliova_na@mail.ru

[***] Galina E. Veresotskaya, State Scientific-Research Institute of Restoration, Moscow, Russia. ORCID ID: https://orcid.org/0000-0001-7919-380X. E-mail: gala-veres@yandex.ru

[****]Anatolij M. Yuminov, Institute of Mineralogy, Ural branch of RAS, Miass, Russia. ORCID ID: https://orcid.org/0000-0001-7643-3505. E-mail: umin@mineralogy.ru

The site

Twentieth century has brought to light many fine archaeological discoveries all over the world as well in Turkmenistan. In this country a new brilliant center of Ancient Oriental civilization was open and excavated in the Kara-Kum desert by the efforts of Soviet, later Russian and Turkmen archaeologists (Sarianidi 1973; 1990; 2002; 2008 and many others; Masimov 1979 and many others). To the beginning of 1990s more than 200 Bronze Age sites were found in the ancient delta of Murghab River (Sarianidi 1990). Some facts enabled V. Sarianidi (1981), following V. Struve (1949: 15) to relate these settlements to the country of Margush, which was mentioned in famous Behistun inscription by Darius I of Persia.

The largest and fully investigated site there is Gonur Depe (Fig. 1). It was founded in the late third mill. BC and by the end of its existence in the middle of second mill. BC its dimensions reached 40 hectares. This site is a model one for Bactria-Margiana archaeological culture/complex (BMAC) (Sarianidi 1974; Kuzmina 2008: 47; Antonova in print) also named as Oxus civilization (Francfort 1984: 2016).

Figure 1
Location of Gonur Depe site on Turkmenistan map.

One of the brightest pages of the investigations of Gonur Depe treasures was the discovering there a complex of elite graves finding many parallels with Royal tombs of Mesopotamian Ur (Sarianidi 2006: 2007) (Fig. 2). This graveyard included: nine underground constructions (hypogea) that looked like houses with many rooms (3220, 3230, 3235) and with a special courtyard in several cases (graves 3200, 3210, 3880, 3905, 3915); three very large pits of a ca. 6 m in diameter also called “ditches” (3225, 3240, 3900); some chamber tombs (3205, 3245, 3250), one shaft tomb (3870) and several tombs with bull and donkey remains situated between them (Figs. 3-4). Three groups of dog burials were

Figure 2
Gonur Depe, Turkmenistan. General view of the "royal necropolis", 2004.
© Margiana archaeological expedition.

Figure 3
Gonur Depe. General view. P1–P23 – excavation areas; RN – location of the "Royal necropolis".
© Margiana archaeological expedition.

excavated in 2011 to the east, south-east and south of the hypogea complex (Dubova 2012; Sataev - Dubova 2016). The complex construction of these tombs, the presence there of four-wheeled wagons, of various human and animal sacrifices, of many symbols of high social status and of numerous gold and silver funeral gifts though the graves had been grabbed several times showed that representatives of the aristocracy or priests were buried there. It was therefore named the "Royal Necropolis" (Dubova 2004; Sarianidi 2006; 2007a; Sarianidi - Dubova 2010).

Some radiocarbon dates could be obtained for this cemetery: from the graves 3210 (2121-1512 BC), 3915 (2195-1786 BC), 3245 (2200-1957 BC) and 3900 (3091-1768 BC). The earliest date, made on animal bones, is of little use because of its large spectrum. The latest date has also a large spectrum (tomb 3210), and the charcoal sample used for the datation comes from the "courtyard" and could be related not to the burial itself but to its later looting. Unfortunately, in general, in these elite tombs there are only very few charcoal remains. Taking into account the archaeological context of the site, we consider the dates between 2200-2000 BC for the whole Royal necropolis to be adequate.

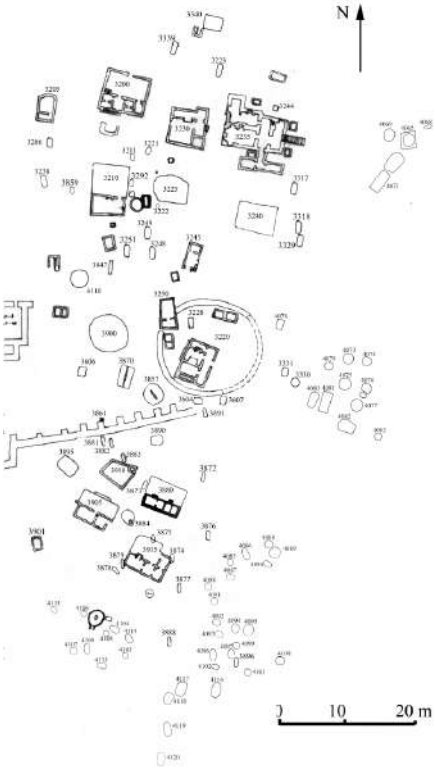


Figure 4
Gonur Depe. Scheme of the "royal necropolis". © Margiana archaeological expedition.

The Discovery of Mosaics

Subject mosaic compositions are among the most remarkable discoveries in the hypogea. They used to decorate the walls of the graves 3210, 3220, 3230, 3235, 3915 and so-called "ostensories" - large wooden boxes, probably for the disposal of valuable offerings as suggested by V. Sarianidi (Fig. 5). "Ostensories" have been discovered in tombs 3230, 3220, 3880 (Sarianidi 2008: figs. 100, 163, 165, 166; Sarianidi - Dubova 2013). Small boxes of different shapes and sizes, probably made of wood, were also found in tomb 3235, shaft tomb 3870, and

Figure 5
"Royal necropolis" of Gonur Depe. "Ostensory" in the "hypogeum" 3220 during cleaning. © Margiana archaeological expedition.

possibly 3220 (Sarianidi 2008: fig. 140; Sarianidi 2009: fig. 114) (Figs. 6-7). No similar artwork has ever been found in any synchronous, later or earlier archaeological sites of Central Asia, Ancient Egypt, Mesopotamia, China, or the Indus Valley. The Gonur mosaics differ from previously known examples, on the one hand because they combine two techniques – painting and inlays, on the other hand because they include inserts made of specially prepared minerals.

Figure 6
"Royal necropolis" of Gonur Depe. Small originally wooden box with ivory and stone mosaic in the shaft tomb 3870 during cleaning. © Margiana archaeological expedition.

Figure 7
"Royal necropolis" of Gonur Depe. Small originally wooden box with the stone mosaic decoration in the "hypogeum" 3235 during cleaning. © Margiana archaeological expedition.

First mosaic inlays were discovered in the North Gonur palace, in the second half of the 1990s (Fig. 8) as well as small originally wooden containers for round bronze mirrors in two rather rich graves (n°194 and 199) on the Large (Main) Gonur Necropolis (Sarianidi 2001: pls. 5, 11,12; Sarianidi 2007: figs. 205, 206; Sarianidi 2008: fig. 144). These wooden boxes were decorated on the outside with geometric ornaments made with small white stone square inlays 0,5 cm. side. Some of the squares and spaces between them were painted in red and black and created a bright colorful cross-like composition (Fig. 9).

Figure 8
Gonur Depe Palace. First mosaic inlays discovered during excavations in the north-western part in the 1990s. © Margiana archaeological expedition.

In all mentioned above "hypogea" there were separated inlays or some compositions of them. Fully preserved "ostensory" with mosaic decoration belong to the grave 3880. It stayed in the "yard" of "hypogeum" and present composition of different crosses and squares (Figs. 10-11). Under this box another subject composition was lying: "The battle between snake and dragon" (Figs. 12-13). We have no evidences if it was a separate one or connected anyway with "ostensory", but it's very impressive and shows how the snake (which personifies the positive forces) has seized the winged dragon (personifying evil) and defeats him. Also well preserved compositions came from the tomb 3210. They are "Griffin in cartouche" (Fig. 14) and "Pairs of opposing griffins" (Figs. 15-17). We have only fragments of one more panel, which can conditionally be called "Snakes and goats", where in the center there were several snakes of different species intertwined and forming one circle. We don't know what can be in the center of this circle with diameter around 15 cm. Only convex smooth surface stayed on its place. Two similar compositions representing a dragon swallowing a kid – possibly can be peripheral parts of the same panel (Fig. 18).

The walls and "ostensory" in the hypogeum 3220 were decorated with the same element (red inside with white curb) – a heart or leave of the pipal tree (Ficus religiosa), under which some hundreds years later Budda attained enlightenment (Figs. 5, 19a-b). Maybe, because it is red, but not green, it can symbolize both items together (achieving enlightenment in the heart). This "hearts" have different sizes and are arranged in two, three or four lines. Only one of them was about 7 cm, but unfortunately lay alone in the ground filled one of the hypogeum's room and it's impossible to speak for what composition it can belong. The central part of all inlays in the form of 'hearts' was made from one mineral and peripheral part (curb) – from another. They are differed both in the density of the mineral and in its color. About the stones used for the producing mosaic inlays it will be said later.

Figure 9
Gonur Depe. Large (Main) Necropolis. Originally wooden box, decorated with geometric mosaic from the grave n°1999 during cleaning. © Margiana archaeological expedition.

Figure 10
"Ostensory" from the hypogeum 3880 at the "Royal necropolis" of Gonur Depe decorated with crosses and squares. V. Sarianidi and M. Rzakov are cleaning it in the expedition camp.
© Margiana archaeological expedition.

Figure 11
Fragment of the "ostensory" from the hypogeum 3880 during cleaning.
© Margiana archaeological expedition.

Figure 12
"Royal necropolis" of Gonur Depe. Mosaic composition "The battle between snake and dragon" from the hypogeum 3880.
© Margiana archaeological expedition.

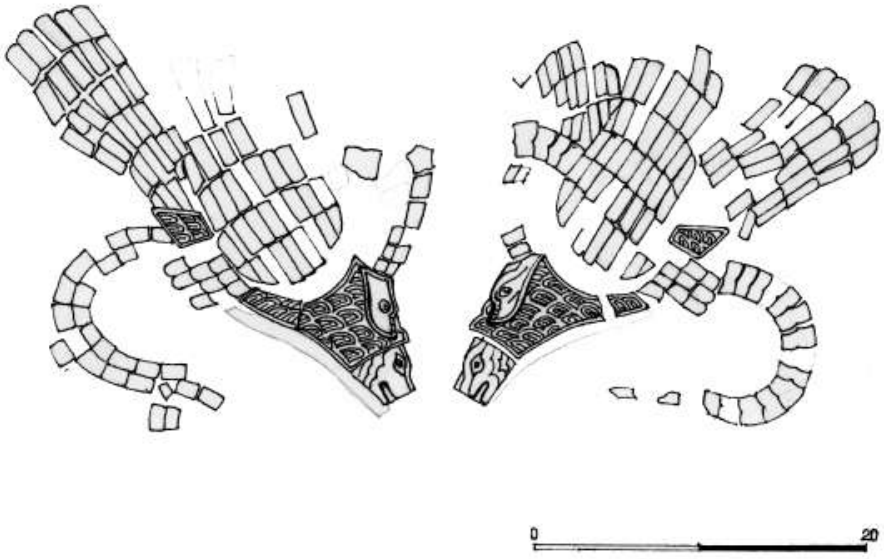


Figure 13
Drawing of the mosaic composition "The battle between snake and dragon" from the hypogeum 3880 made by Irina Sarianidi.
© Margiana archaeological expedition.

Figure 14
Comparison between the mosaics "Griffin in a cartouche" from the hypogeum 3210 at the "Royal necropolis" of Gonur Depe (right) and a fragment of the "Zimri-Lim's investiture" painted scenes in the Amorite palace at Mari in Syria (left). © Margiana archaeological expedition.

Figure 15
"Royal necropolis" of Gonur Depe. Victor Sarianidi is cleaning the mosaic composition "Pairs of opposing griffins" in the hypogeum 3210. © Margiana archaeological expedition.

Figure 16
Fragment of the mosaic composition "Pairs of opposing griffins" in the hypogeum 3210 during cleaning. © Margiana archaeological expedition.

Figure 17
Mosaic composition "Pairs of opposing griffins" from the hypogeum 3210 "Royal necropolis" of Gonur Depe. Variant of the graphic reconstruction by G.E. Veresotskaya. © Margiana archaeological expedition.

An "ostensory" decorated with geometric, but made with great art ornament, was discovered in the hypogeum 3230. It was staying over the top the bodies of five buried servers (or slaves?) and was empty in the moment of discover (Figs. 20a-b). This panels were restored by two authors of this text and now are exhibiting in the State Fine Art museum of Turkmenistan in Ashgabad. In them, as well as in the case of the "ostensory" from 3880, the most striking is the fact that the outstanding visible effect is achieved by using only two colors (black and red) and different qualities of stone inserts (Kovaleva 2016: 120-122).

Figure 18
"Royal necropolis" of Gonur Depe. Central fragment of the mosaic composition "Snakes and goats" in the hypogeum 3210 during cleaning. ©Margiana archaeological expedition.

Figures 19a-b
"Royal necropolis" of Gonur Depe. Fragments of mosaic compositions with the "hearts" or pipal leaves from the hypogeum 3220 in situ. © Margiana archaeological expedition.

Now we can only image what compositions decorated walls of other hypogea. Maybe their walls were decorated by beautiful painting-mosaics composition, because thousands of separated inserts include very remarkable examples: heads of birds (Fig. 21) and different animals (Figs. 22-23), images of mountains (Fig. 24), "wings" (Fig. 25) and a lot of small fragments. The investigations of these material are in progress. But thanks to them now we begin to understand the creation technology of them.

Figures 20a-b
“Royal necropolis” of Gonur Depe.
”Ostensory” in the hypogeum 3230 during cleaning. © Margiana archaeological expedition.

Figure 21
Mosaic inserts in the form of the bird heads from the hypogeum 3230 of the “Royal necropolis” of Gonur Depe.
© Margiana archaeological expedition.

Figure 22
Mosaic insert in the form of a head of the bore from the hypogeum 3200 at the "Royal necropolis" of Gonur Depe.
© Margiana archaeological expedition.

Figure 23
Mosaic insert in the form of a head of the panther from the tomb 3210 at the "Royal necropolis" of Gonur Depe in situ.
© Margiana archaeological expedition.

Techniques and Materials Used

Here we have no possibility to describe all details of this process. But underline only most important ones. We have some evidences of the presence of the wooden base for mosaics. Maybe not all of them, because another facts testify that some decoration was fastened directly on the plastered wall (Fig. 26), had these stages of creation: preparing the sketch of the composition; plastering the selected wooden surface and mounting the prepared elements into it. But elements that form the basis of the pattern and usually everywhere adjacent and alternating with each other vary considerably in thickness (for example, bright white "cubes" are 4-5 mm thick, and yellowish plates – only1 mm) (Kovaleva 2012: 181). Under the thin inserts and around the white "cubes" there is a thick layer of the black mastic (black carbon pigment, quartz, gypsum and natural resins) (Kireeva 2014). This black substance aligned the back side to the same thickness. To mount these details working "from the front side" is almost impossible. Only cubes or insert of other forms which have the same thickness and relatively flat front and back surfaces can be easy put inside the cementing mass and connected one with another. It can be supposed that some elements of the decorations were composed not by the direct method, but by the inverse one and using special templates. When the panel was prepared it turned over and the free areas between the inserts on the front side filled with the colors. It can be

Figures 24a-b
Mosaic inserts in the form of mountains from the hypogeum 3915 at the "Royal necropolis" of Gonur Depe. Face (a) and back (b) sides. © Margiana archaeological expedition.

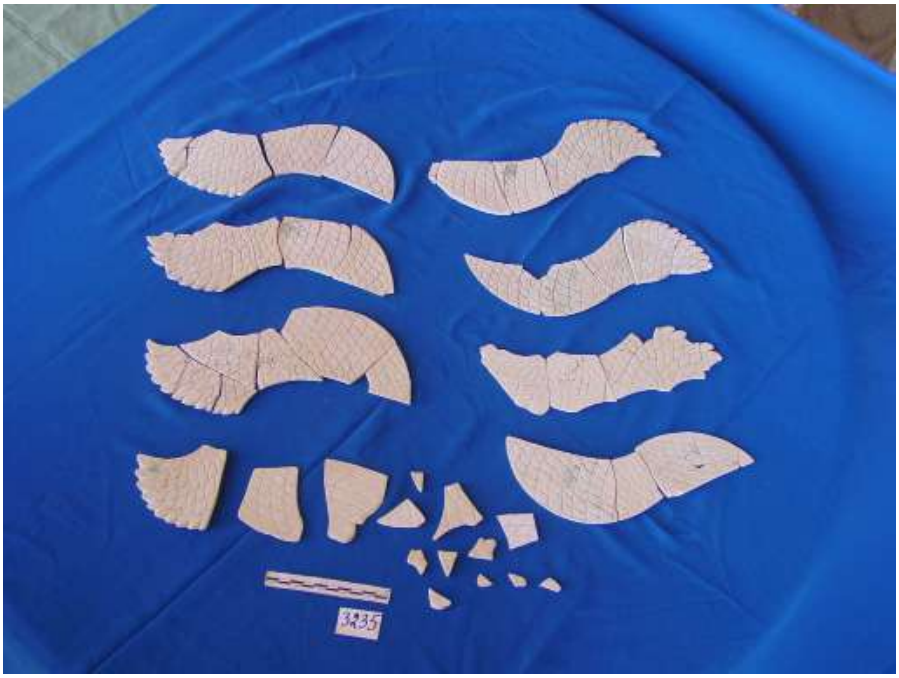


Figure 25
Mosaic inserts in the form of wings from the hypogeum 3235 at the "Royal necropolis" of Gonur Depe. © Margiana archaeological expedition.

assumed that separate elements of the panels (square, rectangular or triangular) have been prepared in advance. They can stored in the workshop and used while creating a new composition (Kovaleva 2012; Veresotskaya 2012; Veresotskaya 2016: 323). Apparently, due to the various materials used for the composition, each with its own physical and chemical properties, different kinds of mastic were used. We cannot exclude that a specific technological tradition unknown to us was at work in the region.

Figure 26
"Royal necropolis" of Gonur Depe. Fragment of mosaics on the plastered wall of the hypogeum 3235. © Margiana archaeological expedition.

One more very important discovery was made during the restoration of the panels. The great number of inserts has been specially clipped edges. According to T. Shaposhnikova's observations, the edges of most of the tesserae have a slope ranging from 45° to 85°, while less are cut at a right angle (90°) (Fig. 27). This technique, now called 'tessellation', is used to even out the outer surface of the mosaic canvas in the case when inserts have different thickness or uneven front surface. It is known only from the classical period. But Gonur material testify that artisans of even in third mill. BC owned it. Among the numerous stone artifacts from Gonur, A. Yuminov found pieces prepared and sharpened at the same angles as those found in the "royal tombs" (Sarianidi - Dubova 2013: fig. 17).

Figure 27
Micro-slip of mosaic insert, reinforced with the black mastic on the coating. © Margiana archaeological expedition.

Gonur artisans used special minerals for mosaics making. The inserts are made of a material that does not have enhanced strength characteristics and are easily tooling. Roentgeno-structural and microscopical analysis shew that they are 95% α-quartz with an average crystallinity index. The material has characteristics, probably caused by changes in the mineral upon its transition to various polytypic modifications of silica associated with the heating of the substance. Judging by the mineral composition and structural and textural characteristics of the material, sedimentary rocks such as flask, diatomite and tripoli could be used as raw materials for the production of mosaic tiles (Yuminov 2012: 189-190).

The method of heating of siliceous raw materials has a long history in South-Western Asia (Barthelemy de Saizieu 2003). It was used in the Indus Valley since the Neolithic period (Vidale 1990; 2007; Lankton et al. 2003: 9). Harappan seals were manufactured from elaborately fired limestone (Masson 1977: 149). The same technique was used for the production of beads known at Altyn Depe in Turkmenistan (Kircho - Kovnurko 2003). Heated beads and seals are frequent also at Gonur Depe (Sarianidi 2001: pls. 22, 1,3,4, 6-11, 13,14; Sarianidi 2002: 46 Tabl. II, 11-14; Sarianidi 2007: 105 figs. 178, 179; Rossi-Osmida 2011: 227, 228; and many other).

The reverse side of the inserts, which are the parts of the subject compositions, has special signs (like v, o, ||, heart, π and others) (Yuminov 2012: 189; Veresotskaya 2014: 220). Carried out the systematization of separate mosaic inserts was began from the items in the hypogeum 3210. For example, four types of "wings" belong to different animals (creations) were identified. The outline of the panel "Pairs of opposing griffins" was used as a template to line up the destroyed ones. It was found that the signs mark different details from the same composition. As the result of all this work the new reconstruction of the mentioned panel was made (Fig. 17).

The Subjects Represented and Their Analogies

Only one human portrait is presented at Gonur: it's a beautiful head, probably of a woman dressed in wide fluttering clothes with the black hears (chamber tomb 3245). Natalia A. Kovaleva restored this mosaics and assumes that there were hands depicted also (Fig. 28). Possibly the image of human figures was close to the typical in the third millennium in Mari mosaic compositions or on the famous Standard of Ur (Aruz - Wallenfels 2003: 97 fig. 52), and are also numerous in the early 2nd millennium painted investiture scene mentioned above. But perhaps among mosaic panels destroyed by robbers (all hypogea were robbed many times in antiquity) there can be many human (or composite figures?) images. This is evidenced by finds of many of the tesserae representing elements of cloths (tombs 3210, 3230, 3235) and eyes (burial 3210; see for example Shaposhnikova 2012: 173, 174).

To understand the place of the Gonur mosaics among the other most ancient examples, we need to say, that the famous Uruk mosaics (dating back to the end of the 4th millennium) were made by pressing clay cones (8-10 cm long and 1,8 cm in diameter) into a wet plaster background. Their external surface formed the mosaic surface making geometric patterns like rosettes, triangles or zigzags, generally painted in red, black and white colours (Aruz - Wallenfels 2003: 18-19 figs. 4,5). Inlays found in the ancient 3rd millennium city of Mari were manufactured from lapis lazuli, mother-of-pearl and ivory (Parrot 1967: pl. XI; Aruz - Wallenfels 2003: figs. 96, 97, 100; Margueron 2007: 52 fig. 25). They are also unique in the scenes they depict. The only place with some similar features is

Figure 28
Restored and partly reconstructed (adding a hand) human portrait from the chamber tomb 3245 at "Royal necropolis" of Gonur Depe. Work by N. A. Kovaleva.
© Margiana archaeological expedition.

the frieze of warriors from the Early Dynastic II palace of Kish (2650-2550 BC) where the most important details are highlighted by inserted inlays making contrasting colors. The scene composition is hollowed out of the grey slate and then filled in with white limestone inserts (Aruz – Wallenfels 2003: fig. 48). No mosaic compositions have been found at Mohenjo-Daro, though a large number of separated pieces have been discovered reminding, to a certain extent, the Gonur examples (Marshall 1931: pl. CLV, 26-31, 39-46, 56, 57, 61, 62 pl. CLVI, 12).

"Griffin in a cartouche" from the hypogeum 3210, exquisitely made by the Gonur craftsmen, finds very close analogies with the painted scenes of the "Zimri-Lim's investiture" in the Amorite palace at Mari in Syria (Musée du Louvre, inventory number AO19826)[1] (Fig. 9). In both the Gonur and Mari versions, the animal is placed in a frame surrounded by a dark border. The other representations in the Investiture scene are similarly framed. As it was mentioned above, at

1 The paintings found in the Amorite palace of Mari date most probably to an earlier period than the time of Zimri-Lim according to Margueron 2004: 509. He suggests either the beginning of the XVIIIth c. or the XIXth c.

Gonur the black color was used in the final stage of the making of the mosaic, to outline or to draw the borders. The fantastic beast from Gonur Depe tomb 3210 has the torso of a lion, the head of a dragon and spread wings. It is standing firm on its powerful legs. The head of the Syrian winged-lion did not survive, but it may have horns. On the Gonur representation, the beast's head is crowned with black curved horns. It also has a black, slightly curved forward and narrow beard similar to that usually depicted on Egyptian priests' and pharaohs' faces. Other griffins wearing the same beards are depicted on another composition found in the same tomb at Gonur (Fig. 10). The griffin's body generally reminds that of a lion's torso, but there are still noticeable differences: there is no mane, a distinctive feature of a male lion, and the lower part of the belly is colored in bright red. The back of the neck of the griffin reminds that of a buffalo or a zebu since it is depicted with a hump rising immediately behind the head. Several blocks are made of stone tesserae: the head with its wide-open jaws, the legs with their underlined muscles and the wings made of tiny elements in order to underline their volume. The Syrian beast's wings are also multicolored. But its torso is much less powerful, especially in the bottom part. In both pictures, the tails of the animals are raised up and tense. The Mari griffin's tail is rolled around a multicolored disc. Interestingly, in the Mari picture, the lion-griffin cartouche stands over that of a humpback buffalo or zebu with its front leg standing over mountains. These comparisons vividly illustrate the close cultural ties between the country of Margush and the Near East.

Conclusion

The investigation of Gonur mosaics is only in its beginning. We have only few information on the technology of its making. We didn't full analyze the material from which they were made. We made analysis of few fragments of used colors. No one has yet set as the goal a serious study of the panels and their comparisons with known samples. But it's clear, that they are a brilliant, unknown previously example of the ancient Oriental art.

Acknowledgments

First of all, we need to thank prof. Victor I. Sarianidi, who found all items, described here and gave us possibility to work with him and to study such brilliant examples. The works of Russian-Turkmenian Margiana archaeological expeditions are conducting in the frames of the Agreement between Institute of Ethnology and Anthropology RAS (Moscow, Russia) and Ministry of culture of Turkmenistan. This text was prepared with financial support of the Russian Foundation for Basic Researches (project # 18-09-40082 "Technologies in the BMAC material culture in the context of the cultural relationships of the Eurasian Bronze Age population and the dynamics of the environment (case of the Southern regions of the Middle Asia)")

Bibliography – Kaynaklar

Antonova in print	E. V. Antonova, Bactriisko-Margianskaya arkheologicheskaya kultura v kontekste istorii drevnego Vostoka [Bactria-Margiana Archaeological Culture in the context of the History of the Ancient East. Essays], Moscow.
Aruz - Wallenfels 2003	J. Aruz – R. Wallenfels (eds.), Art of the First Cities: The Third Millennium BC from the Mediterranean to the Indus, New York.
Barthelemy de Saizieu 2003	B. Barthelemy de Saizieu, Les parures de Mehrgarh. Perles et pendentifs du Néolithique pré-céramique à la période pré-Indus, Fouilles 1974-1985, Paris.
Dubova 2004	N. A. Dubova, "Mogil'nik i 'tsarskij nekropol' na beregakh Bol'shogo Bassejna Severnogo Gonura [North Gonur graveyard and 'royal necropolis' on the banks of the Large Basin]", U istokov tsivilizatsii [Near the Sources of Civilizations], Moscow, 254-281.
Dubova 2012	N. A. Dubova, "Pogrebenija zhivotnykh v strane Margush [Animal burials in Margush country]", V. I. Sarianidi (ed.), Transaction of Margiana Archaeological Expedition 4, Moscow, 101-139.
Francfort 1984	H.-P. Francfort, "The early periods of Shortughaï (Harappan) and the Western Bactrian culture of Dashly", South Asian Archaeology 1981, Cambridge, 170-175.
Francfort 2016	H.-P. Francfort, "How the twins met: Indus and Oxus Bronze Age Civilizations in Eastern Bactria. Shortughaï revisited forty years later", N. A. Dubova (ed.), Transaction of Margiana Archaeological Expedition 6, Moscow, 461-475.
Kircho - Kovnurko 2003	L. B. Kircho – G. M. Kovnurko, "Prestizhno-kul'tovye predmety i ukrashenija Altyn-depe iz drevnikh iskusstvennykh mineralov (po dannym rentgenometricheskogo analiza) [Prestigious-cult artifacts and decoration from old artificial minerals at Altyn-Depe (results from X-ray analysis)]", Arkheologicheskie Vesti 10, 108-114.
Kireeva 2014	V. N. Kireeva, "Rezul'taty tekhniko-tekhnologicheskogo issledovanija mozaichnykh vstavok s Gonur-depe [Results from the technical and technological studies of the Gonur Depe mosaic inlays]", V. I. Sarianidi (ed.), Transaction of Margiana Archaeological Expedition 5, Moscow, 224-225.
Kovaleva 2012	N. A. Kovaleva, "Predvaritel'nye issledovanija i konservatsija dvukh fragmentov «kovrovykh» mozaik iz Gonura [Preliminary Research and Conservation of Two Fragments of 'Carpet' Mosaic from Gonur]". V. I. Sarianidi (ed.), Transaction of Margiana Archaeological Expedition 4, Moscow, 176-184.
Kovaleva 2014	N. A. Kovaleva, "Zhivopisno-mozaichnaya kompozitsiya 'Kovrik' iz grobnitsy 3200 Gonur-depe. Popytka rekonstruktsii skhemy ornamenta v processe konservatsii [Pictorial-mosaic composition "Small carpet" from grave 3200 Gonur Depe. Attempt of reconstruction]", V. I. Sarianidi (ed.), Transaction of Margiana Archaeological Expedition 5, Moscow, 204-217.
Kovaleva 2016	N. A. Kovaleva, "Victor Sarianidi – Poslednij Krylatyj Lev Margiany [Victor Sarianidi – The Last Winged Lion of Margiana]", N. A. Dubova (ed.), Transaction of Margiana Archaeological Expedition 6, Moscow, 108-124.
Kuzmina 2008	E. E. Kuzmina, Arii – put' na yug [Ariens – way to the south], Moscow, Sankt-Petersburg.
Lankton et al. 2003	J. W. Lankton – J. Diamanti – J. M. Kenoyer, A Bead Timeline, Vol. I: Prehistory to 1200 CE, A resource for Identification, Classification and Dating, Washington.
Margueron 2004	J. C. Margueron, Mari, métropole de l'Euphrate au IIIe et au début du IIe millénaire av. J.-C, Paris.
Margueron 2007	J. C. Margueron, "Le royaume de Mari", Studia Orontica 3, 7–60.
Marshall 1931	Sir J. Marshall, Mohenjo-Daro and the Indus Civilisation, Vol. III, London.
Masimov 1979	I. S. Masimov, "Izuchenie pamyatnikov epokhi bronzy nizov'iev Murgaba [Study of the Bronze Age sites in the lower Murghab]", Sovetskaya archeologiya [Soviet archaeology] 1, 111-151.
Masson 1977	V. M. Masson, "Pechati protoindijskogo tipa iz Altyn-depe [Seals of Proto-Indian type at Altyn Depe]", Vestnik Drevnej Istorii 4, 147-156.
Parrot 1967	A. Parrot, Les Temples d'Ishtarat et de Ninni-zaza (Mission Archéologique de Mari, T. 3), Paris.
Pisareva 2012	S. A. Pisareva, "Rezul'taty issledovanija sostava materialov arkheologicheskikh obraztsov iz raskopok na Gonur Depe [Results of the Studies on the Materials of the Archaeological Samples from the Gonur Depe Excavations]", V. I. Sarianidi (ed.), Transaction of Margiana Archaeological Expedition 2, Moscow, 192-196.
Rossi-Osmida 2011	G. Rossi-Osmida, Aji Kui Oasis, Vol. II, The Citadel of the Figurines, Vicenza.
Sarianidi 1973	V. I. Sarianidi, "Drevnosti nizovii Murgaba [Antiquities of the Lower Murghab]", Archeologicheskie Otkrytiya [Archaeological Discoveries] 1972, Moscow, 483-484.

Sarianidi 1974	V. I. Sarianidi, "Baktrija v epokhu bronzy [Bactria in the Bronze Age]", SovA 4, 49-71.
Sarianidi 1981	V. I. Sarianidi, "Margiana in the Bronze Age", P. L. Kohl (ed.), The Bronze Age Civilization of Central Asia, Recent Soviet Discoveries, New York, 165-193.
Sarianidi 1990	V. I. Sarianidi, Drevnosti strany Margush [Antiquities of Margush country], Ashgabat, Ylym.
Sarianidi 2001	V. I. Sarianidi, Necropolis of Gonur and Iranian Paganism, Moscow.
Sarianidi 2002	V. I. Sarianidi, Margush, Ancient Oriental Kingdom in the Old Delta of Murghab River, Ashgabat, Turkmendöwlethabarlary.
Sarianidi 2006	V. I. Sarianidi, 'Tsarskij nekropol' na Severnom Gonure [The 'Royal necropolis' at Gonur North]", VDI 2 (257), 155-192.
Sarianidi 2007	V. I. Sarianidi, "Dvortsovo-khramovyj kompleks Severnogo Gonura [The Palace-Temple complex of Gonur North]", RossA 1, 49-63.
Sarianidi 2008	V. I. Sarianidi, Zoroastrianism: a New Motherland for an Old Religion, Thessaloniki.
Sarianidi 2009	V. I. Sarianidi, Mystery and True of the Great Culture, Ashgabat, Turkmendöwlethabarlary.
Sarianidi - Dubova 2010	V. I. Sarianidi – N. A. Dubova, "Nouvelles sépultures sur le territoire de la "nécropole royale" de Gonur Depe", Arts Asiatiques 65, 5-26.
Sarianidi - Dubova 2013	V. I. Sarianidi – N. A. Dubova, "Mozaika III tys. do n.e. v Gonur Depe (Turkmenistan) [Mozaics of the Third Mill. BC at Gonur Depe (Turkmenistan)]", G. Yu. Kolganova - A.A. Petrov -S.V. Kullanda (eds.), Poslednij entsiklopedist, K jubileju so dnya rozhdenija B.A. Litvinskogo [The Last Encyclopedist, Volume in Honor of the 90th Anniversary of Boris Litvinskij], Moscow, 379-413.
Sataev - Dubova 2016	R. M. Sataev – N. A. Dubova, "Pogrebenija sobak na tsarskom nekropole Gonura [Dog Burials at the Gonur Royal necropolis]", N. A. Dubova (ed.) Transaction of Margiana Archaeological Expedition 6, Moscow, 204-223.
Shaposhnikova 2012	T. A. Shaposhnikova, "Mosaiki i rel'efnyi decor sten tsarskogo nekropolya Gonur depe [Mosaics and relief decoration of the walls of the royal necropolis of Gonur Depe]", V. I. Sarianidi (ed.), Transactions of Margiana Archaeological Expedition 4, Moscow, 170-175.
Struve 1949	V. V. Struve, "Vosstanie v Margiane pri Darii I [Uprising in Margiana during Darius the First ruling]", Materialy Yuzhno-Turkmenistanskoj kompleksnoj arkheologicheskoj expeditsii [Materials of the South-Turkmenistan complex archaeological expedition] 1, Ashgabat, 9-34.
Veresotskaya 2012	G. E. Veresotskaja, "Restavratsija fragmenta stenki lartsa-darokhranitel'nitsy i issledovanie tekhniko-tekhnologicheskikh osobennostej materialov mozaiki kontsa III tys. do n.e. iz tsarskoj grobnitsy № 3230 Gonur Depe (Turkmenistan) [Restoration of the Wall Fragment of the Casket- Ostensory, and Study of the Technical and Technological Characteristics of the End of Third Millennium BC Mosaic Materials from the Royal Tomb 3230 at Gonur Depe]", V. I. Sarianidi (ed.), Transaction of Margiana Archaeological Expedition 4, Moscow, 185-188.
Veresotskaya 2014	G. E. Veresotskaya, "Predvaritel'nye resultaty raboty po razboru i sistematizatsii razroznenykh fragmentov mozaichnogo dekora iz grobnitsy 3210 [Preliminary results of the study of the analysis and systematization of disparate fragments of the mosaic decoration of grave 3210]", V. I. Sarianidi (ed.), Transaction of Margiana Archaeological Expedition 5, Moscow, 218-223.
Veresotskaya 2016a	G. E. Veresotskaya, "Issledovanie i restavratsija mozaichnogo dekora stenki lartsa-darokhranitel'nitsy kontsa III tys. do n.e. iz tsarskoj grobnitsy 3230 Gonur-depe (Turkmenistan) [Research and Restoration of Mosaic Wall decoration of the Casket-Ostensory of the End of the IIIrd Millennium BC from the Royal Tomb of Gonur Depe (Turkmenistan)]", N. A. Dubova (ed.), Transaction of Margiana Archaeological Expedition 6, Moscow, 315-323.
Veresotskaya 2016b	G. E. Veresotskaya, "Sarianidi Viktor Ivanovich. Korotkie vstrechi [Sarianidi Victor Ivanovich. Brief Meetings]", N. A. Dubova (ed.), Transaction of Margiana Archaeological Expedition 6, Moscow, 178-187.
Vidale 1990	M. Vidale, "Early Harappan steatite, faience and paste beads in a necklace from Mehrgarh-Nausharo", East-West 39 (1-4), 291-300.
Vidale 2007	M. Vidale, "Il Ruolo dei Bracciali nella Civilta della Valle dell'Indo (2600-1900 A.C.)", G. Ligabue – G. Rossi-Osmida (eds.), Sulla Via delle Oasi, Tesori dell'Oriente Antico, Padova, 242-249.
Yuminov 2012	A. M. Yuminov, "Mosaichnye vstavki iz grobnitsy 3915 [Mosaics Insertions from the Royal sepulture 3915]", V. I. Sarianidi (ed.), Transaction of Margiana Archaeological Expedition 4, Moscow, 189-191.

DOI: 10.26658/jmr.614845

JMR 12, 2019 37-46

Some Considerations on the Interplay Composition - Surface

Etkileşim Kompozisyonu Üzerine Bazı Düşünceler - Yüzey

Maria de Jesus DURAN KREMER*

(Received 09 April 2019, accepted after revision 13 September 2019)

Abstract

When analysing different floors of Roman mosaic, it must be noted that the choice of the iconographic program for the decoration of one or more spaces in the same building follows, in general, the guidelines given by the commissioner of the work according to his preferences or the objectives of representativeness that he hopes to achieve through that program.

However, the adaptation of the chosen composition to the surface to be decorated is surely up to the mosaic artists. According to their expertise and probably also to the budget allocated to the work, they will adapt the composition as a whole and the integrated patterns (present therein) to the measurements of the surface to be decorated.

The analysis of these elements is mainly decisive in the study of pavements with compositions based on geometric schemes.

Keywords: *Roman mosaic, composition, style, patterns, space planning.*

Öz

Roma mozaiklerinin farklı döşemeleri analiz edilirken, aynı yapıda bulunan bir veya daha fazla mekânın dekorasyonu için ikonografik program seçiminin, genel olarak, çalışma sorumlusu tarafından kendi tercihlerine göre veya bu dekorasyon programı aracılığıyla gerçekleştirmeyi umduğu temsillere göre yapıldığına dikkat edilmelidir.

Bununla birlikte, seçilen kompozisyonun dekore edilecek yüzeye uygulanışı kesinlikle mozaik sanatçılarına bağlıdır. Muhtemelen işe tahsis edilen bütçeye ve uzmanlıklarına göre, kompozisyonu bir bütün olarak ve entegre desenleri (orada mevcut olan) dekore edilecek yüzeyin ölçümlerine uyarlayacaklardır.

Bu öğelerin analizi, geometrik şemalara dayanan kompozisyonlardan oluşan döşemelerin çalışmasında esas olarak belirleyicidir.

Anahtar Kelimeler: *Roma mozaiği, kompozisyon, stil, desenler, alan planlaması.*

* Maria de Jesus S. Duran Kremer, PhD, integrated researcher and member of the Instituto de História da Arte da Universidade Nova de Lisboa. Instituto de História da Arte, FCSH / NOVA, Av. de Berna, 26-C, 1069-061 Lisboa, Portugal. ORCID ID: https://orcid.org/0000-0003-4276-9988. E-mail: mjesuskremer@hotmail.com

Although in the past geometric compositions have been relegated to the background in relation to figurative compositions, their significance for the understanding of the evolution of artistic currents, of themes that are often millenary, of the miscegenation of Cultures, has been recognized by an increasing number of researchers, giving rise to a new perception of this type of decoration.

The analysis of style and patterns of the mosaics in Portugal, which had already been initiated, was integrated in the scope of the project RoGeMoPorTur[1], *conditio sine qua non* for a possible identification of, among other aspects, local, regional or itinerant mosaic workshops, of cultural influences, of artistic currents in the choice of the type of pavement decoration by the commissioner of the work, of the identification of the interpretation given to this or that motif at local or regional level.

Thus, in a first moment, it is necessary to individualize the "vision" present in the spirit of the commissioner of the work. He is the main figure in this phase of the mosaic production: his vision of the decoration of the floor(s) of one or all the rooms of the property to be decorated, be it a *domus* or a *villa*, is undoubtedly the result of his training and personal experience, of what he got to know in other parts of the Empire, of the priority given to different themes either linked to mythology, domestic scenes, to the most relevant activity of the commissioner of the work or for the region where he lives, or finally to his social status.

However, this type of analysis must be closely linked to the spatial ordering scheme of the surface to be decorated according to the chosen composition.

One of the most interesting characteristics of the analysis of a mosaic floor is, without a doubt, the choice made by the person in charge of the work for the insertion of the composition in the surface of the room, in order to, although respecting the original concept of the composition, fill the entire surface to be decorated, no matter how irregular it may be. Having already been addressed in detail in the past (Baum-vom Felde 2003: 51-60), it is a first step towards the identification of the working method of a workshop.

We know today that "it was found in the archaeological excavations" that "the execution of the Vitruvian norm is rarely proven" (regarding the construction of the support for the mosaic pavement) and that "...each workshop was adapted to the terrain and also, it is assumed, to the budget that was available to carry out the work" (Campos Carrasco et al. 2008: 14). In our opinion, this is an equally valid assumption, for the reordering of the patterns and motifs of a mosaic composition, in order to fill the space at your disposal.

Thus, when determining the type of solution chosen for the ordering of the surface to be decorated, the mosaic artist is immediately confronted with another question: the adaptation of the chosen geometric scheme to the actual dimensions of the pavement for which it is intended. A question that, in general, is not raised when a figurative decoration with mythological scenes, hunting, etc., is chosen: Here the decoration allows a very open dialogue with the surface, an adaptation to the limits of the scene pre-defined by the frame that delimits the composition. In the case of geometric schemes, however, this dialogue between decoration and the surface to be decorated would require, in certain cases, an adaptation of the individual geometric elements as a whole and a new calculation of the dimensions of each one of them - a calculation to be made again for

1 RoGeMoPorTur. East meets West: investigating the reciprocal influence of East and West in the Roman geometric mosaics of Portugal and Turkey. A comparative study.

each of the floors to be decorated, which also implies an adaptation of the base grid drawn on the nucleus and from which all the other motifs evolve.

Not doing that, the mosaicist has to find a solution, on a case-by-case basis, that allows him to fill the residual space without disturbing the overall syntax. Thus, in a first step, the mosaic artist determines the dimensions and the placement of the frame for the overall composition, delimiting from the first moment the dimensions of the interior space intended for the "carpet" or "carpets" to be executed in mosaic. In general, the frame is centred in relation to the walls of the room, using, in most cases, a uniform decoration for the space between the frame itself and the walls. The "interior" decoration of the frame may consist of a surface decoration, often distributed over two or more mosaic carpets according to the final use for which the room is intended. Then, when the composition "on the ground" is completed, the mosaic artist has to decide which strategy to follow to finish off one or more sides of the composition.

In the territory of Lusitania that we analyse today, there are several examples of different approaches and solutions to this dilemma.

I) Prolongation of Existing Patterns in the Composition, Possibly with a Modification of the Original Form

One of the examples we have in Portugal is in room C3 of the Roman *villa* of Abicada (plan: Duran Kremer 2008: 213-222) (Fig. 1). The composition consists of a main carpet in an eight-pointed star of lozenges system (Salies 1974: Rautensternsystem IV), and a narrower carpet in an hexagon system (Salies 1974: Hexagonsystem II).

Figure 1
Mosaic, room C3 (*villa* romana da Abicada).
© MJ Duran Kremer

The analysis of the first carpet shows us a careful, orthogonal composition, in which the bottom geometric scheme was used not only as an ordering element of the composition but also and above all as an independent decorative element. The geometric shape of the lozenge mosaic tiles that form the eight-pointed stars (in black on a white background) is repeated within the lozenges themselves, however, introducing the polychrome on a uniform white background. In the squares formed by the longer sides of two stars, two different motifs were inserted, distributed symmetrically following the diagonals of the composition. In the smaller squares formed by the tips of the stars, a single motif was used (the concave, inverted square), which was given a differentiated polychrome treatment from square to square. The squares and rectangles formed by the external delimitation of the composition are filled with isosceles triangles in black on a white background (Décor I: pl. 29i). The lateral rectangles are filled by a lozenge with circles inscribed in opposition of colours.

Of a qualitatively high execution, this carpet limits to the north, with a second bichrome carpet, (black and white), where the geometric scheme is the only decorative element. The carpet is also carefully executed and is to be classed part in the Italian tradition of *black and white* style mosaics (Fig. 2).

Figure 2
Room C3. Detail.
© MJ Duran Kremer

The mosaic in room C3 is a clear example of the choice made at the level of the decorative syntax: for the execution of the mosaic, the base tile was used with pre-fixed dimensions and that, most probably, was used by the mosaic artist for a first structuring of the surface to be decorated ("on the mortar of the nucleus beneath there are two sets of preparatory lines. First a grid, orthogonal and diagonal, was incised into the surface of the mortar with a sharp instrument; this permitted the overall construction of the pattern" Dunbabin 1999: 283). It is likely that, according to the expertise of the mosaic artists and the budget allocated to the work to be carried out, this grid would or would not be adapted to the actual dimensions of the final pavement.

In the case of room C3, there was no adaptation, at least as far as the second carpet is concerned: beginning from the lower right corner to the left and north the motif of the hexagons and lozenges is cut off on the left side of the carpet, not respecting the principles of symmetry present on the main carpet. In the same way, the hexagons of the last row next to the frame are unfinished and two of their sides are extended until touching the black line that constitutes the delimitation of the composition (Fig. 2).

Similar examples can be found in Conimbriga (for example, Correia 2013: 269 fig. 126) or on the carpet B of the peristyle of *villa Cardilio* (Duran Kremer 1999: fig. B2, B4), next to the delimitation of the composition for the garden (we will mention here only some mosaics as examples, chosen from the numerous existing examples).

Still in the Roman *villa* of Abicada we find similar situations in two other rooms: room G and room C4 (plan: Duran Kremer 2008: 213-222). However, here, either because a new calculation of the base grid was carried out, or because the dimensions of the surface to be decorated and the chosen composition were more adequately adapted to the existing grid, there was no need to change the patterns (of part) of the composition.

II) Cutting-off of Existing Patterns in the Composition, Possibly with Modification of the Original Motif

One of the best-known examples is, without a doubt, the mosaic of the winning horses of Torre da Palma (Lancha - André 2000: Estampa LXXXIX). An orthogonal composition of divided meanders of inverted return swastikas, forming squares between them (Décor I: pl. 194c), it is a dense, elaborate composition, designed to highlight the five winning horses, inscribed in the squares placed diagonally: "in this mosaic of the Villa de Torre de Palma, the theme has lost its special connotation and is presented as a mere ornamental framework of figurative representation" (Alves 2002: 81). This goal is achieved by leaving no free spaces other than those of the "frames" in which the horses' representations are inserted, so that the observer is led to concentrate on the images of the horses.

Thus, it is easy to overlook the fact that the patterns in the last row (meanders with a central rectangle filled with geometric motifs) are incomplete, cut by the outer frame of the mosaic. The fact that this part of the composition is separated from the first one by a row of black tesserae may allow it to be interpreted as a second carpet, independent of the first. However, the cut of the motif remains a clear sign of the use of pre-calculated base squares applied indiscriminately by the workshop responsible for the execution of the mosaic.

Other examples on Portuguese territory can be found in Conimbriga (Correia 2013: print XI) and, although humbler in its making and impact, in the A carpet of the peristyle of *villa cardilio*, next to the delimitation of the composition for the garden (Duran Kremer 1999: vol. III fig. A2, A8).

III) Duplication of the Patterns Already Present in the Composition

The duplication of patterns already present in the composition is unfrequently used as a solution for filling a "space" left empty by the composition, between the composition itself and its frame. It can only be used when the duplication of the subject fits perfectly in the space to be decorated.

As far as we know, there is only one example in Portugal to date: the floor of the G room of *villa cardilio* (Fig. 3), certainly the most emblematic and also the best known of all the floors of this Roman *villa*. After having been studied in depth in the past (Duran Kremer 1999), (the duplication of patterns) continues to be the object of differentiated research, not only because we find ourselves - with the exception of room H (Duran Kremer: 1999 fig. H 4-13).- facing a coherent iconographic programme in itself, but also and above all because the development of scientific research on mosaics and the discovery of new floors in Portugal require a further deepening of interpretative analyses.

Figure 3
Mosaic, room G (*villa cardilio*, Torres Novas). © MJ Duran Kremer

In the case of the floor of room G (Fig. 3) we are dealing with a mosaic designed in detail as a bearer of a message that, in addition to being understood by all those who had access to it, was aimed at being perennial, i.e. conveying its message also to future generations[2].

2 The different patterns filling the inscribed squares and their message have been analysed in detail in: Duran Kremer 1999: 8-121; Duran Kremer 2005: 189-202..

The stylistic analysis of the mosaic in room G showed clearly that we are dealing with a mosaic workshop not necessarily local but certainly regional, for which the execution of geometric compositions was not of any difficulty, however complex it was, as can easily be seen by the expertise in the execution of the mosaics of the peristyle, especially the carpet E (Duran Kremer 1999) (Fig. 4) and F (Duran Kremer 1999) (Fig. 5). A skill, however, that certainly did not extend to figurative representations.

Figure 4
Mosaic E (*villa cardilio*, Torres Novas).
© MJ Duran Kremer

As in the previous examples, the previous definition of the composition frame can also be seen as determining the placement of the mosaic, the dimensions of which clearly delimit the surface reserved for the chosen composition. However, and despite the meaning and relief assumed by the narrative discourse inherent to the floor of room G, there was no adaptation of the base grid to the surface to be decorated and to the chosen geometrical scheme (Salies 1974:

Rautensternsystem Ia) (Fig. 6). The use of a wider grid, which would have allowed the geometric scheme to be placed, without cuts or spaces to be filled in between it and the frame, would have had a positive impact, at least in terms of filling the square with busts, *kantharoi* and *falcula* (Figs. 3, 7): The iconographic programme chosen, requiring the placement of these symbols in a single square, could have been executed in a larger "space", without the final frame seeming narrow and having overlapping patterns (Fig. 4).

However, the mosaic artists' execution capacity has allowed to find a solution that fits perfectly in the overall composition: by filling in the "interval" space that ends the pavement laterally (on the right in the diagram in Fig. 6) with an almost complete line of eight-pointed stars (the two side diamonds are replaced by triangles), the decorative syntax of the pavement remains unchanged. Moreover, the concentration of the messages inscribed on the three main squares (Duran Kremer 1999: fig. G1, G2, G3, G4) is, optically, greater, catching the observer's attention. The fact that the geometric composition next to the wall opposite the peristyle partially ends with a cut of the patterns further accentuates the endeavour to find the most integrative solution possible for the composition as a whole.

Figure 5
Mosaic F (*villa cardilio*, Torres Novas).
© MJ Duran Kremer

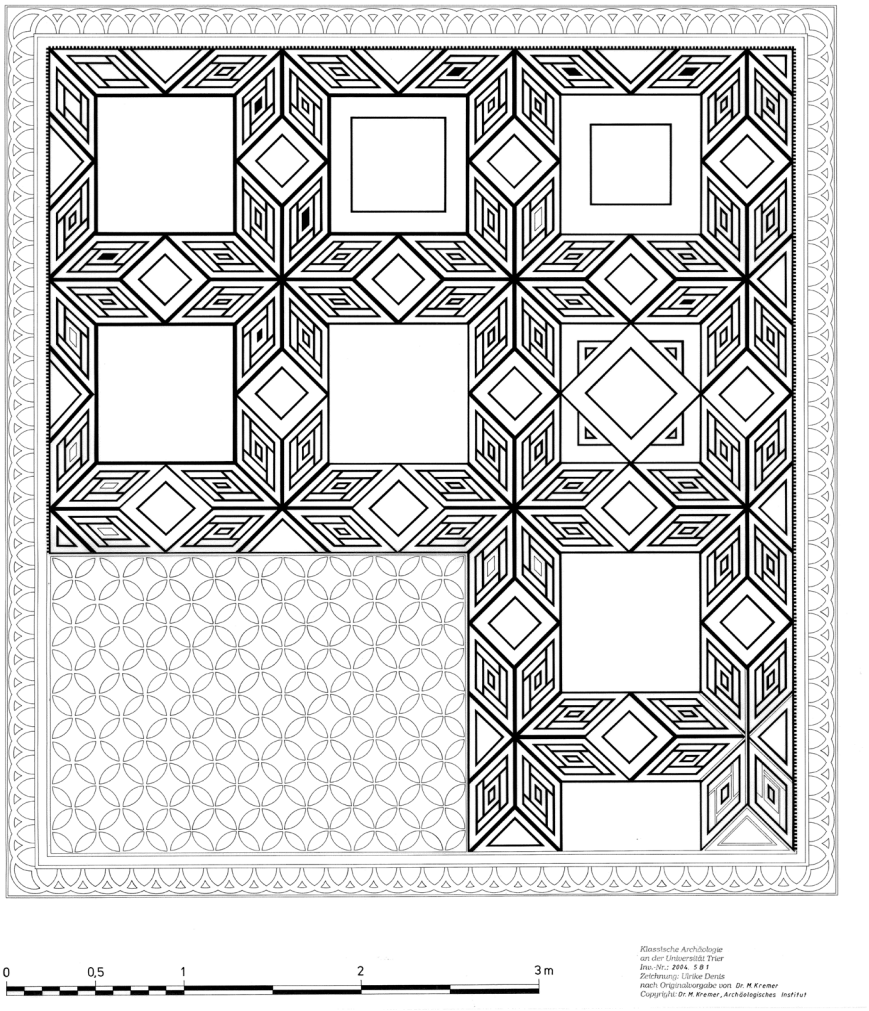


Figure 6
Geometrical scheme (*villa cardilio*,
Torres Novas). © MJ Duran Kremer

Figure 7
Panel with busts (*villa cardilio*, Torres Novas). © MJ Duran Kremer

IV) Insertion of a New Pattern, not yet Present in the Composition

It is in the Roman villa of Milreu (Oliveira 2010: 35-175) that we will find a different dialectic in relation to the surface to be decorated and the type of solutions found for the problems that the chosen composition and its relationship with the architecture of the room may raise (Fig. 8).

Figure 8
Mosaic (Milreu, *in situ*).
© Photograph T. Hauschild

Also, in this type of arrangement of the decoration on the surface to be worked, the mosaic artist determines, in a first step, the dimensions and placement of the frame (which, in this case, consists of an edge that frames the entire composition) delimiting the dimensions of the interior space intended for the two main "carpets". However, the space left blanc by the non-adaptation of the base grid and, consequently, of the chosen geometric scheme (Oliveira 2010: 117) (Salies 1974: Octogonsystem VI) was filled by a new linear motif (straight triangles - Décor I: pl. 11d), without any relation to the motifs/patterns and compositions

of any of the carpets. A probably random choice, made according to the dimensions of the grid - base and the space to be filled.

From this brief analysis of some of the mosaic floors existing in Portugal, it can certainly be concluded that, among the various aspects to be taken into account when identifying styles and artistic influences in Roman mosaic floors, the strategy followed in adapting (or not adapting) the geometric scheme to the surface for whose decoration it was chosen, can and should be one of the factors to take into account when trying to identify individual workshops and their presence in a given region or Province of the Roman Empire.

A study that will have to go through an analysis extended to other Provinces allowing, if not the finding of common denominators, at least the elaboration of common lines of action to the *ars musiva* in the Roman Empire: a task that we hope to develop in the framework of the *RoGeMoPorTur. East meets West: Investigating the Reciprocal Influence of East and West in the Roman Geometric Mosaics of Portugal and Turkey. A comparative study.*

Bibliography – Kaynaklar

Alves 2002	F. D. A. C. C. O. Alves, A Arquitectura e o mosaico romano de pavimento. Relações/Interacções, Dissertação de Mestrado em História da Arte, História da Arte da Antiguidade, Faculdade de Ciências Sociais e Humanas, Universidade Nova de Lisboa.
Baum-vom Felde 2003	P. C. Baum-vom Felde, Die geometrischen Mosaiken der Villa bei Piazza Armerina, Analyse und Werkstattfrage, Vol. I, II, Hamburg.
Campos Carrasco et al. 2008	J. M. Campos Carrasco - A. Fernández Ugalde - S. García Dils - Á. Gómez Rodríguez - J. Lancha - C. Oliveira - J. F. De Rueda Roigé - N. De La O Vidal Teruel (Equipa MOSUDHIS), A rota do Mosaico Romano. O Sul da Hispânia (Andaluzia e Algarve), Cidades e villae notáveis da Bética e Lusitânia romanas, Faro.
Correia 2013	V. H. Correia, A Arquitectura Doméstica de Conimbriga e as Estruturas Económicas e Sociais da Cidade Romana, Anexos de Conimbriga nº 6. Centro de Estudos Arqueológicos das Universidades de Coimbra e Porto, DGPC, Liga de Amigos de Coimbra.
Décor I	C. Balmelle – M. Blanchard Lemée – J. Christophe – J.-P. Darmon – A.-M. Guimier Sorbets – H. Lavagne – R. Prudhomme – H. Stern, Le Décor Géométrique de la Mosaïque Romaine I, Paris, 1985.
Décor II	C. Balmelle – M. Blanchard Lemée – J.-P. Darmon – S. Gozlan – M.-P. Raynaud, Le Décor Géométrique de la Mosaïque Romaine II, Paris, 2002.
Dunbabin 1999	K. M. D. Dunbabin, Mosaics of the Greek and Roman World, Cambridge.
Duran Kremer 1999	M. J. Duran Kremer, "Die Mosaiken der villa cardilio (Torres Novas, Portugal), Ihre Einordnung in die musivische Landschaft der Hispania im allgemeinen und der Lusitania im besonderen", Inaugural-Dissertation zur Erlangung des Doktorgrades (Dr. phil.) im Fachbereich III der Universität Trier, Band I bis IV., Trier.
Duran Kremer 2005	M. J. Duran Kremer, "Algumas consideraçoes sobre a representação das estações do ano em mosaicos da Península Ibérica", O Mosaico Romano nos centros e nas periferias. Originalidades, influûencias e identidades, Actas X do Colóquio Internacional do Mosaico Greco-Romano, Conimbriga, 189-202.
Duran Kremer 2008	M. J. Duran Kremer, "A villa romana da Abicada. Uma introdução ao estudo da arquitectura e mosaicos", XELB 8, 213-222.
Lancha - André 2000	J. Lancha - P. André, Corpus dos Mosaicos Romanos de Portugal. A Villa de Torre da Palma, Vol. 1, 2, Lisboa.
Oliveira 2010	C. F. de Oliveira, Mosaicos Romanos de Portugal. O Algarve Oriental. Vol.I (1) (2), Vol.II. Dissertação de Doutoramento em História, Coimbra.
Salies 1974	G. Salies, Untersuchungen zu den geometrischen Gliederungsschemata römischer Mosaiken, BJb 174.

DOI: 10.26658/jmr.614853

JMR 12, 2019 47-62

The Marine Scene in the Lod Mosaics
Lod Mozaikleri Üzerindeki Deniz Sahneleri

Amir GORZALCZANY * - Baruch ROSEN**

(Received 23 August 2017, accepted after revision 02 October 2019)

Abstract

The Lod mosaic, discovered in the city bearing that name in Israel, was laid in a luxurious villa urbana in the late 3rd or early 4th century AD. It contains inter alia a nautical scene presented as a floor carpet in the form of a pond. The scene includes sea life and two ships. One is sailing freely while the other, facing the opposite direction, is becalmed and perhaps in distress. The scene, in that place and time, symbolized the penetration into this country of the sea-oriented Greco-Roman culture. The pond containing the sea life and the vessels conveyed the idea of the sea, full of life, as a representation of the world organized by its creator. The scene details of the sea symbolize the truism "big fish eat little fish," which also appears in contemporary literature. The vessels symbolize life as a sea voyage, also reflected in contemporary sources. The two ships affected contrarily by the same wind suggest the metaphor that a benefit divinely granted to one may be undesirable to another, and that it is impossible to appease everyone all the time. Such ships could also present additional ship associated symbolic concepts. To the modern observer the pond and its contents look as if they were purposefully and successfully designed to fit most cultural backgrounds of contemporary viewers, be they Jews, Christians, Samaritans or pagans.

Keywords: *Mosaic, marine motifs, Roman-Byzantine, ships, sea monsters.*

Öz

İsrail'de Lod kentinde bulunan ve kentin adını taşıyan Lod Mozaikleri MS 3. yüzyıl sonlarında ya da MS 4. yüzyıl başlarında lüks bir şehir villasına (villa urbana) döşenmişlerdir. Diğerlerinin yanısıra göl şeklinde işlenen döşemede deniz betimi yer almaktadır. Sahnede deniz yaşamı ve iki gemi betimlenmiştir. Gemilerden biri serbestçe seyrederken, diğeri ters yöne bakar şekilde hareketsiz ve belki de tehlike altındaymış gibidir. Bir bütün olarak bu sahne, o yer ve zamanda, deniz odaklı Greko-Romen kültürünün ülkeye girişini sembolize etmektedir. Mozaik sanatçısı deniz yaşamını ve gemileri içeren göl ile birlikte, hayat dolu bir şekilde deniz fikrini, biçimlendirilen yeni dünyanın bir temsili olarak aktarmaktadır. Denizin sahne detayları, çağdaş literatürde ortaya çıkan "büyük balık küçük balığı yer" şeklindeki gerçekçiliği sembolize etmektedir. Gemiler, çağdaş kaynaklara da yansıdığı gibi hayatı bir deniz yolculuğu olarak simgelemektedir. Aynı rüzgardan aksine etkilenen iki gemi, birine ilahi olarak verilen bir faydanın bir başkası tarafından arzu edilmeyebileceğini ve herkesi her zaman memnun etmenin imkansız olduğu metaforunu yansıtmaktadır. Bu gemiler ayrıca gemiyle ilişkili sembolik kavramları da gösterebilir. Deniz ve içerikleri, modern gözlemciye, Yahudilerin, Hıristiyanların, Samiriyelilerin veya paganlar gibi çağdaşı izleyicilerinin çoğunun kültürel geçmişine uyacak şekilde amaçlı ve başarılı bir şekilde tasarlanmış gibi görünüyor.

Anahtar Kelimeler: *Mozaik, denizle ilgili mıotifler, Roma-Bizans, gemiler, deniz yaratıkları.*

* Amir Gorzalczany, Scientific Processing Branch, Publications Department, Israel Antiquities Authority (IAA), 12 Lavanda St. Tel Aviv, Israel. ORCID ID: https://orcid.org/0000-0001-6910-6776. E-mail: amir@israntique.org.il

** Baruch Rosen, Independent Researcher, Tel Aviv, Israel. ORCID ID: https://orcid.org/0000-0003-2350-1441. E-mail: rosenbar@netvision.net.il

The authors would like to express their gratitude to the Israel Antiquities Authority (IAA), especially to Jon Seligman (head of the IAA Excavations, Survey and Research Department), Ram Shoeff (graphics) and Nikki Davidov (photography). All the pictures are by courtesy of the IAA. The mosaics, dated to the late 3rd–early 4th centuries AD, were discovered in the city of Lod, (Lydda) Israel (and see Schwartz 1991; 2015; Oppenheimer 1998), and excavated during several seasons between 1996 and 2018, first by Miriam Avissar and later by one of the authors (A.G.) on behalf of the IAA.

Introduction

The Lod mosaic (Avissar 1996; 1999; 2001; Haddad - Avissar 2003; Friedman 2004; Gorzalczany 2015; 2018; Gorzalczany et al. 2016) was discovered and exposed during salvage excavations in the city bearing that name in central Israel, about 30 km. east of the city of Tel Aviv. Its technical execution, the ideological themes conveyed and the symbolic intellectual world that it depicts are only partly understood by the casual modern viewer. This exceptional late 3rd- or early 4th-century AD example of the mosaic art of the southern Levant during the Late Roman-Byzantine period, was reviewed in a 2015 book summarizing the information about it and containing an extensive bibliography (Bowersock et al. 2015; Talgam 2015a; 2015b). This mosaic includes, *inter alia*, a unique nautical scene presented as a floor carpet (Fig. 1). That scene is the subject of this article.

Figure 1
The marine scene depicted on the mosaic floor at Lod (Photo Nicky Davidov, Courtesy Israel Antiquities Authority).

The Villa of the Late Roman Period at Lod

A wealthy villa consisting of several wings was uncovered: two wings were roughly aligned north south and a third was situated east of them (Gorzalczany 2015; 2018; Gorzalczany et al. 2016). The longitudinal axis connecting the northern and southern wings was not straight. It had several minor angles in it, suggesting that the wings were not constructed simultaneously. The southern one was later addition. However, it seems that the building was in use for a long time. When the villa reached its maximum size all the wings were in use. The northern wing included a luxurious *triclinium* paved by a magnificent mosaic found in an excellent state of preservation, featuring geometrical patterns, fish, birds and real animals as well as mythological creatures. One of the carpets depicts a rich marine scene discussed below. South of the room, a vestibule was discovered, which was paved by white mosaics within black rectangular frames, not well preserved. The vestibule led to the eastern wing which could have been reached by descending stairs that did not survive. South of the vestibule, a peristyle courtyard was exposed. At its center was a mosaic divided into rectangular frames and in each frame, medallions arranged in three columns and three rows decorated with images of animals, hunting scenes, fish and animals

fighting each other. The eastern wing was only partially excavated, because part of it was below modern buildings, thus outside the boundaries of the excavation. It contained at least two rooms, which were paved with fine quality mosaics. One of the rooms features a rectangular *emblema*, made of small tesserae of excellent quality. The *emblema* contains a circular central medallion surrounded by several red, black and white concentric circles. This room was identified as a second, smaller triclinium, due to a rectangular feature marked by a strip of three rows of tesserae arranged differently than the ones surrounding it. The rectangle may represent the place where a *klinē*, a couch or recliner for guests at a banquet was located.

The rooms were also used in the Byzantine period after some of the floors were raised. Numerous levels of repairs and occurrences of raised floors in the building and the adjacent street level were recognized, and it is apparent that the villa was in use as early as the Roman period and remained inhabited, despite conspicuous structural changes for a long time, up to the Byzantine and Umayyad periods. The marine scene has been discussed several times (Haddad - Avissar 2003; Friedman 2004; see endnotes in Talgam 2015a: 103–107; 2015b: 109). The following article will cite and discuss additional sources and ideas bearing on the background of this nautical panorama and deemed relevant to understanding its messages.

On the Content of Nautical Scenes in Mosaics

Listing and discussing the whole corpus of nautical scenes in the mosaics left from classic cultures is beyond the capacity of any single article. Previous researchers who have discussed selected parts of that huge body of work have already commented briefly on the place of nautical scenes in the corpus of Roman mosaics e.g., in North Africa, Syria and Italy (Talgam 2015a: *passim*). Nautical scenes in such mosaics, as is the case in many other scenes, often depicted literary-mythological events and concepts.

It would be impossible, within the framework of this research, to discuss in depth the totality of mosaics with Pagan, Jewish and Christian maritime motifs in the southern Levant. That little investigated phenomenon can be exemplified by the recently exposed splendid mosaic of Hoquq, attributed to a 5th century CE synagogue (Magness et al. 2018; 2019; Britt - Boustan 2019). This mosaic features marine scenes previously considered atypical for a synagogue. Among these non-kosher sea creatures and scenes from the Homeric world. Similar scenes appear in the synagogue of Khirbet Wadi Hamam mosaic, located only 8 km south of the first (Leibner - Miller 2010: esp. 258–259; Leibner - Arubas 2015: esp 37; Miller - Leibner 2018: 166–167 figs. 4.32–34). We should also mention the non-Jewish motives appearing in the earlier marine mosaic of the Roman villa of ‘Ein Ya‘el, Jerusalem (Edelstein 1993: 117; Roussin 1995).

These and the Lod mosaic, the subject of this article, represent the worldviews of their creators as well as those of the intended contemporary viewers of the finished works. Superficially, such nautical mosaics depicted scenes from everyday life and conveyed supposedly well-known events from the repertoire of local and universal mythologies. But these mosaics also transmitted a subtext that required deep cultural awareness to understand.

The figurative elements were meant, first, to attract the attention and the interest of all viewers. But a deeper understanding of the scenes called for more extensive contemplation of their details. Only thus could the ancients achieve further

comprehension of the deeper, subsurface messages in the panorama. At least few contemporary observers might have been expected to try to discover such less obvious symbolic content. Indeed, to encourage such an approach, mosaics were often placed in an architectural setting that facilitated, even encouraged, lengthy intellectual contemplations and discussions. Customarily, mosaics were set in sacred sanctuaries where explanatory rites and sermons helped expose their less explicit meanings (several such explanatory sermons are cited below). Private halls, where symposiums and gatherings would have occurred, also furnished such an environment. That seems to have been the situation in the case of the Lod mosaic.

Modern observers who wish to look for hidden messages in such mosaics are detached by the distance in time and culture from the society that created them and must bridge a conceptual chasm. This is true for every item from antiquity; however, it is especially valid for the transitional period discussed here (Brown 1971: *passim*). Also, this article reflects a time when Classical Antiquity is approaching its end and Christianity, an outgrowth of Judaism, is still incorporating elements of its dialogue with Paganism. Therefore, also a better understanding of the mosaic discussed here can be achieved by referring, directly or through various intermediaries, to available sources of information bearing on the cultural lexicon of Greek-Roman antiquity. To this must be added the repertoire of Jewish-Christian literary and figurative sources, as well as elements from Levantine Paganism.

The Sea in the Lod Mosaic, a Hellenistic/Roman Point of View

The notable fact that this elaborate mosaic, explicitly associated with the sea, is located in Lod, a city not on the seacoast, deserves attention. Lod is situated inland in a country less associated with the sea than other regions of the Greco-Roman world, bearing marine mosaics, such as the coastal lands of Roman Africa, Magna Graecia, Greece, coastal Anatolia, Phoenicia and the Mediterranean islands. Relative to the contemporary Roman Imperial and Middle Roman period, when all the Mediterranean world is integrated including many large harbor cities and a well-developed road system linking the coastal cities with the inland, Palestine, according to contemporary rabbinic sources still in many aspects bears inland idiosyncrasy. Perhaps reflected by Josephus, the Jewish historian (37–c. 100 AD), who defined his people thus: *"As for ourselves therefore, we neither inhabit a maritime country; nor do we delight in merchandise, nor in such a mixture with other men as arise from it. But the cities we dwell in are remote from the sea: and having a fruitful country for our habitation, we take pains in cultivating only"* (Ios. c. Ap. I, 12). That saying might have been acceptable for the period preceding the Hasmoneans dynasty, but its traces may be still present in the period of the mosaic.

As will be exemplified below, the mosaic presents nautical themes reflecting the worldview of sea-oriented societies.

Written sources and archaeological materials are the means by which the 21st-century observer accesses that world view. In this article, the discussion of the cultural backgrounds of the sea scene begins with Homer. To continue this line of thought, Homer is followed by Plato-Socrates and Xenophon (5th-4th centuries BC) and later by Aristotle. Aristotle is followed by Jewish and Christian scholars. Here we also included Lucian of Samosata (2nd century AD), an Aramaic-speaking intellectual, who later became a noted Greek author. Lucian and the Jewish scholars/sages mentioned below belonged, culturally and historically, to

non-Hellenic landlubber societies, as defined by Josephus above. Yet all these intellectuals, living in a period spanning more than a millennium, used allusions and comparisons, based on marine elements, to comment on the human situation. The processes of integrating authors who came from "barbarian" landlocked cultures with the sea-oriented Greco-Roman culture must have included a deepening acquaintance with the sea.

The roots of the eminent role of the sea in Greco-Roman culture are to be found in traditional tales and myths (e.g. Finley 1962: 58, 74; Malkin 1998: 1-3, 62–74 and *passim*). One of the oldest appears in a tale told twice in Homer's *Odyssey* (Hom.Od. 11: 125; 23: 270–280). Odysseus is trying to appease Poseidon, the sea god and the father of Polyphemus, the man-eating giant Cyclops blinded by Odysseus, so that Poseidon will forgive Odysseus who will then be allowed to sail home peacefully. To do so, Ulysses (Odysseus) descends to Hades and is instructed there, by the soul of Tiresias the seer, to take an oar from his ship and to walk far inland. He should stop on finding a "land that knows nothing of the sea." There, the oar would be mistaken for a winnowing fan. At that point, Odysseus should plant the oar in the local soil and offer a sacrifice to Poseidon, thus symbolically dedicating that landlocked site to the sea god. That deed will enable him to sail home. That episode was an early literary expression of the key role of recognition of the sea and nautical matters as separating Greeks from barbarians. At the same time, it was a comment on the missionary tendencies of Greek culture. The Lod mosaic can exemplify a place in which such a Homeric oar was planted. Later, Plato, quoting Socrates, defined the maritime nature of his culture: *"I believe that the earth is very large and that we who dwell between the Pillars of Heracles and the river Phasis live in a small part of it about the sea, like ants or frogs about a pond…"* (Plat.Phaid. 109a–b). The river Phasis has been identified with the Rioni River on the Black Sea coast of Georgia. This article suggests that the nautical scene in the Lod mosaic presents a conscious or not-so-conscious artistic reproduction of the Socratic pond. In the times of Plato/Socrates, the exuberant shout *"the sea! the sea!"* of Xenophon-led Greek mercenaries, when seeing the sea, is an additional example of the Greek-Sea relationships (Xenophon.an. IV, VII. 24). While the Romans started as a nation of landlubbers, that 'pond' later became, ideologically, the heart of the Roman Empire, "Mare Nostrum". The pivotal role of the Mediterranean in Greco-Roman culture continued later with the rise of Christianity and the splitting of the empire. Yet, when acquiring that culture, superficially or in depth, some Eastern peoples, like the Jews or the Aramaic Christians, kept the essences of their own old cultures. The mosaic's location at Lod, the pond it depicts, its content and the literary background of its scenes may serve as an example of the dialectic, mixed culture at Lod specifically, and in the eastern part of the empire in general, during the 3rd–4th centuries, the period when the mosaic was laid (Brown 1971: 7–17 and *passim*; Ovadiah - Mucznik 1998; Talgam 2015a *passim*).

These cultures did not evolve in a vacuum. Since prehistoric times, the Mediterranean Sea has been a melting pot of races and cultures, this process has been investigated from numerous aspects and points of view (e.g. Horden - Purcell 2000: esp. 26–49; Broodbank 2013: 593–610). The point of view of such researchers varied and included history, anthropology, ecology, commerce, agriculture, physical environment and more. The trends of economic and social developments along history were shaped by geography and environment (Braudel 1972). Our knowledge about the crystallization of Mediterranean societies was enriched by the discovery and study of profuse documentation and primary sources e.g. the Cairo Geniza (Goitein 1999).

The Lod Nautical Scene Conveyed Messages Suitable to Various Observers

In view of the above it is suggested that the nautical scene as a whole – fish, sea life and ships – depicted in the Lod mosaic reflected the might of the sea, its bounty and wonders. At a deeper level, the mosaic represents a model of the sea as a concept (Fig. 1). To one versed in the Classics, it is the pond of Plato/Socrates a symbol of the Mediterranean Sea during the Hellenistic-Roman world (Horden - Purcell 2000: 8–39). To a contemporary, 'average viewer,' if there ever was such a person, the scene symbolized abundance. This was noted in a study of sea life in North African mosaics: It was a *xenia* design, welcoming guests, as well as possessing the power to increase prosperity and a protective, apotropaic effect (Dunbabin 1978: 126). But in addition to these common massages, in the period in which the Lod mosaic was laid, and in the surrounding country, to a Jew or a Christian exposed to the Bible, particularly to Psalm 104, it would have sent an additional message. It has already been suggested that a biblical theme (Isaiah 11:6) and its implied message about a peaceful utopian world was included in another part of the Lod mosaic (Bowersock et al. 2015: 17–19).

Here, the nautical scene, ships and sea life, could have conveyed, besides an attachment to the sea and aesthetic pleasure, a subtext describing the power of the Judeo-Christian God: *"How many are your works, O Lord! In wisdom you made them all your creatures. There is the sea, vast and spacious, teeming with creatures beyond number – living things both large and small. There the ships go to and fro, and the leviathan, which you formed to frolic there"* (Psalm 104: 23–26). Key elements of that paragraph are present in the pond: "the sea"; "teaming with creatures"; "both large and small"; "ships go to and fro"; and the "leviathan" whale (?). One of the "fish" in the mosaic is defined by its unnaturally coiled tail as a symbolic whale (Fig. 2), perhaps at the time related to the leviathan of the Psalm 104 and to various depictions of sea monsters. That sea creature *(Ketos, Cetus)* with its coiling tail appears commonly in Jonah scenes on mosaics and wall paintings from Late Antiquity/early Christianity (Lawrence 1962; Papadopoulos - Ruscillo 2002).

Figure 2
A marine monster (Leviathan?) with coiled tail (Photo Nicky Davidov, Courtesy Israel Antiquities Authority).

Psalm 104 is cited in Jewish liturgies associated with a ceremony conducted on the first day of the lunar month. That psalm was and is included in Christian lectionaries, prayers and homilies (see St. Agustin sermon below). The use of Psalm 104 in Christian rites is mentioned by Gregory of Nyssa, in the mid-4th century AD (Ferguson 1997). Psalms in general constituted an important part of early church services, as seen in Canon 17 of the Synod (343? –381? AD) of Laodicea (Percival 1977: 133) and Jonah and the leviathan appear in both Jewish (Magness 2010: 143) and Christian art, e.g., the Mausoleum of the Julii in Rome (Toynbee 1971: 140–141) as symbols of death and resurrection. Interestingly, modern biblical expositors have noted the age-old pagan characteristics of Psalm 104, referring to the primordial god (goddess?) of the sea. Of importance here is the association of that psalm with pre-Hellenic, Phoenician and Canaanite myths and their sea gods (Dahood 1970: 31-48). These old sea gods of the Levant merged later with the Greco-Roman pantheon. Some mosaics of Mediterranean lands show such a sea god surrounded by a nautical panorama (Dunbabin 1978: 159–158)[1]. The pond in the Lod mosaic can be seen as a much-modified offshoot of such mosaics, common all around the Mediterranean basin with scenes of sea life centered on divine figures associated with the sea. Later such "cleansed" pagan traditions, affected various Christian symbolic perceptions, expressions and sermons. Thus, it can be suggested that the universal sacral character of the pond in the Lod mosaic, teeming with sea life and ships, symbolized for both Jews and Christians the God who created sea and the life within it. Possibly, parts or even most of that subtext could have been perceived, at various levels, by some Levantine people of all confessions: pagans, Jews, and later, Christians. The question is to whom in Lod it was addressed in the 3rd-4th century CE due to the longue-durée aspect of pagans, Jews, and later, Christians? Was this building open and used by all of them? And, when, in what circumstances? Having said that, one should keep in mind that excavations in the site carried out by one of authors and still in progress indicate that the building was occupied and used for long periods of time in such rapidly changing times.

Big Fish Eat Little Fish

An additional symbolic depiction appears in the pond, which, as noted, represents the sea. It is the "fish-eating-fish" scenes. While the fish-eating-fish scene at the bottom center of the mosaic pond is not strikingly cruel, relative to several bloody hunting scenes in the Lod mosaics, it certainly reflects similar symbolism. Ovadiah and Mucznik also remarked on this scene: "In the lower part of the panel another large fish is swallowing a smaller one" (Ovadiah - Mucznik 1998: 6) (Figs. 3-4). Earlier, when analyzing the northern carpet of the Lod mosaic these authors commented that animals in the mosaic "… appear to reflect the struggle for survival in nature" (Ovadiah - Mucznik 1998: 3).

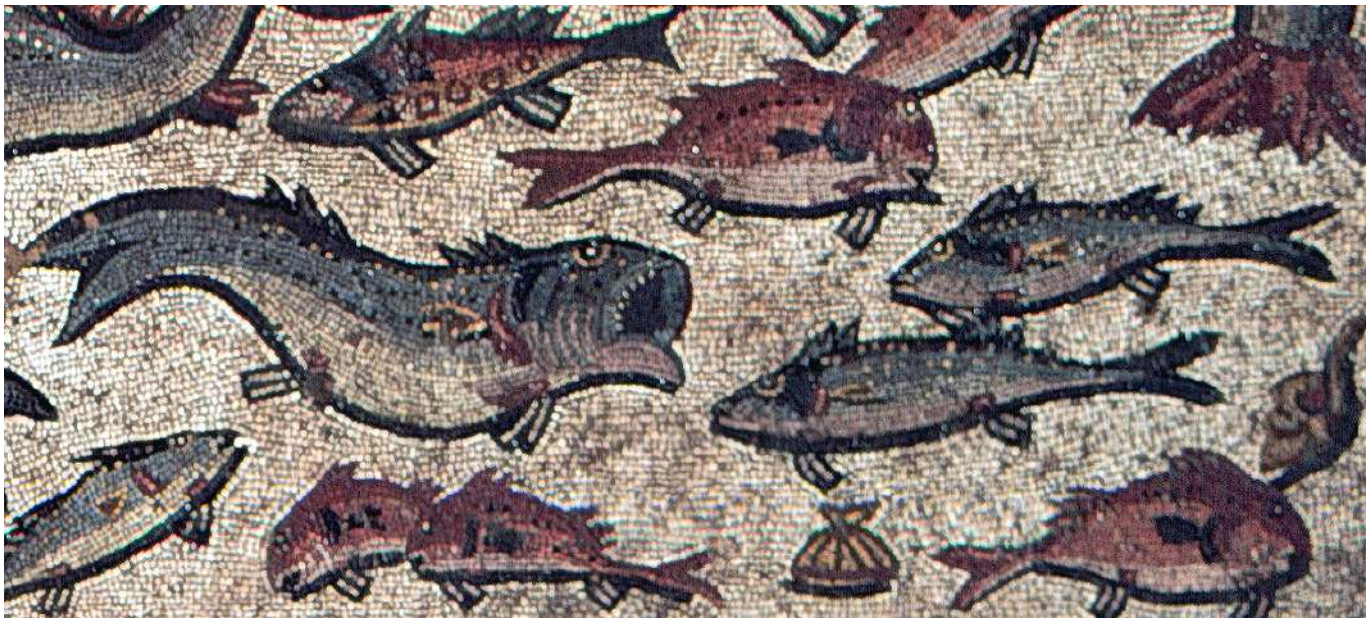
Notably in that pond, in addition to the fish mentioned above, two more fish present a 'devouring' image, symbolized by their open mouth, armed by sharp teeth, absent in other fish. The second fish, which is depicted threatening a ship, is the biggest in the 'pond.' This fish may have been associated with the "great fish", the one swallowing Jonah, appearing in early Jewish and Christian art. A third 'devouring' fish, as defined by its sharp teeth, threatens two fish swimming toward it. The social history of proverbs and sayings associated with fish-eating-fish imagery, from antiquity to the present, has been discussed previously

1 And see there references to associated figures.

(Parsons 1945; Mieder 2014: 178–228). An early Greek perception of fish in the sea is dated to approximately the 8th–7th centuries BC: "*Listen now to right, ceasing altogether to think of violence. For the son of Cronos has ordained this law for men, that fishes and beasts and winged fowls should devour one another, for right is not in them; but to mankind he gave right which proves far the best. For whoever knows the right and is ready to speak it, far-seeing Zeus gives him prosperity"* (Hes.erg. 274–285). The oldest biblical passage bearing on the generalized aphorism "fish eat fish" and the sea as a place of anarchy appears in the book of Habakkuk, dated to the last years of the First Temple, the early 6th century BC: *"Thou art of purer eyes than to behold evil, and canst not look on iniquity: wherefore lookest thou upon them that deal treacherously, and holdest thy tongue when the wicked devoureth the man that is more righteous than he? And makest men as the fishes of the sea, as the creeping things, that have no ruler over them?"* (Habakkuk 1: 13–15).

Figure 3
Big fish swallowing a small fish (Photo Nicky Davidov, Courtesy Israel Antiquities Authority).

Figure 4
Big fish threatening a smaller fish (Photo Nicky Davidov, Courtesy Israel Antiquities Authority).



Going back to Greek tradition, an example of that aphorism in the form of "big fish eat little fish" appears in a specific saying by Aristotle (384–322 BC) about the fish known as a *phycis*: "Very often, however, as has been stated, they devour one another and especially do the large one devour the smaller" (Aristot. hist. an. 591b. 14). Marcus Terentius Varro (116-27 BC) commented on big fish eating small fish in his discussion of fish ponds (Varro rust. III 17.6).

The image of the sea as a model of anarchy was adopted by the Church fathers, e.g. St. Irenaeus (c. 125–202 AD), who was born in Smyrna and died as a bishop of Lyon, France. The quotation is from *Against Heresies*, his major work, which defined extreme opposition to the earthy rule as an heresy: *"Earthly rule, therefore, has been appointed by God for the benefit of nations….so that under the fear of human rule, men may not eat each other up like fishes; but that, by means of the establishment of laws, they may keep down an excess of wickedness among the nations. And considered from this point of view, those who exact tribute from us are God's ministers, serving for this very purpose"* (Iren. Heresies V 24, 2). Parsons (1945) demonstrated the use of that motive also by Athenagoras (2nd century, Athens), St. Basil (4th century AD, Caesarea Cappadocia) and St Ambrose (4th century AD, Milan). Of special interest in the present discussion are two sayings connecting the biblical passages cited above to the fish-eat-fish motif expounded upon by the Church fathers. St. John Chrysostom (late 4th century, Antioch and Constantinople), quoting Habakkuk (cited above) while commenting on Genesis (Parsons 1945: 381). In a commentary on Psalm 104, St. Augustine (354–430 AD, North Africa) shows, as mentioned above, an awareness of the connection between that psalm and the worldview of fish eating fish (Parsons 1945: 382).

A Talmudic equivalent of that world view appears in tractate Avodah Zara (about idolatry). *"Just as among fish of the sea, the greater swallow up the smaller ones, so with men, were it not for fear of the government, men would swallow each other alive"*. This is just what we learnt: Rabbi Hanina, the Deputy High Priest (second half of the 1st century) said, *"Pray for the welfare of the government, for were it not for the fear thereof, men would swallow each other alive"* (Babylonian Talmud, Avodah Zarah 4a).

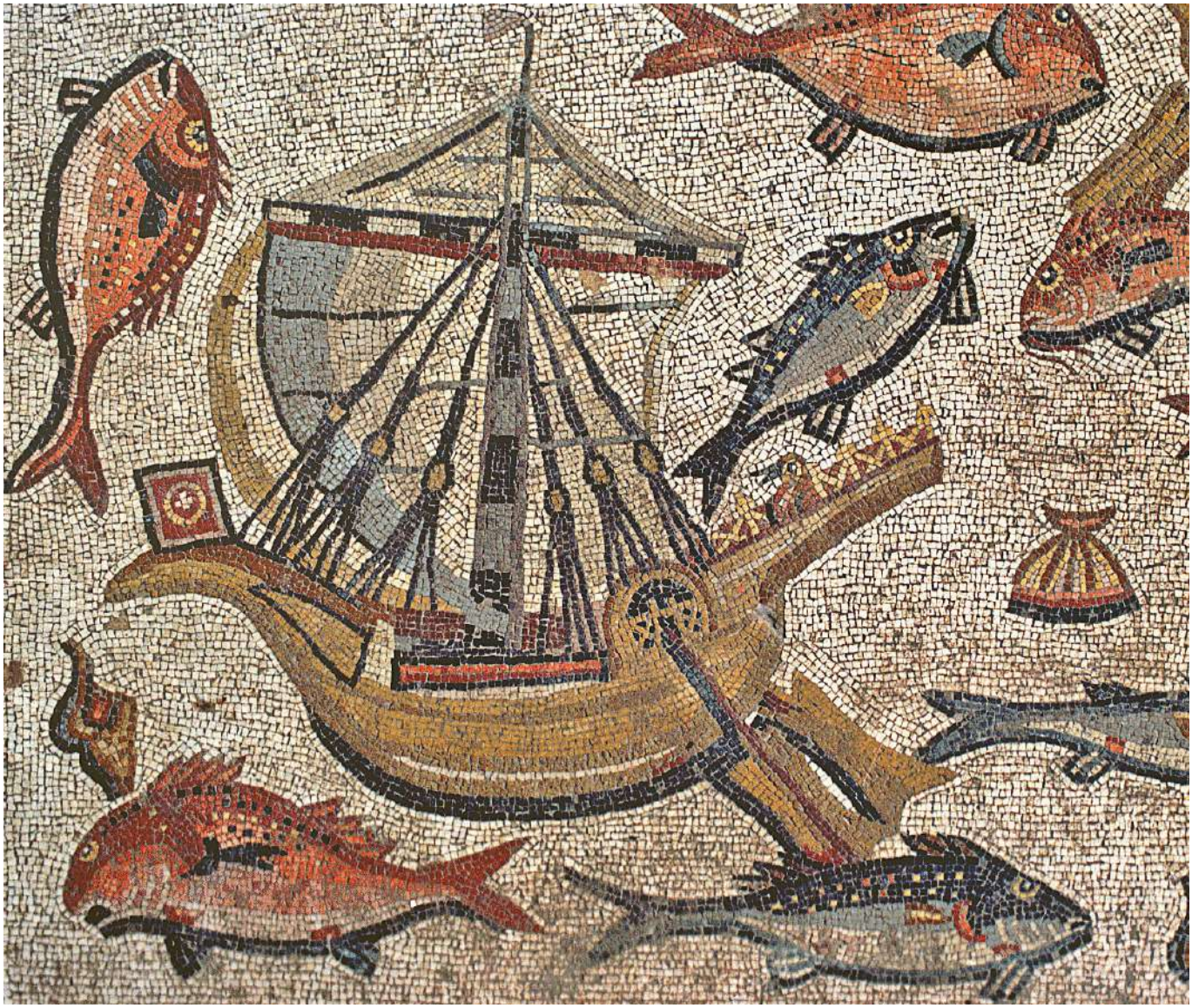
Seemingly a basic element of the worldview, i.e., big fish eating small fish, expressed as natural behavior, and seen as such by Aristotle and later in writings by Christian and Jewish intellectuals, was conveyed by the marine scene in the Lod mosaic. Surely some of the contemporary viewers of that mosaic understood the sociopolitical subtext of that 'fish-eat-fish' scene. Some could have also realized the need for a governing authority to control that 'natural' law. A modern commenter on the spirit of the time of Late Antiquity suggested such an attitude was expressed by the pagan historian Dio Cassius in the first half of the 3rd century AD. Man should accept the strong rule of one man "as long as it gave him an orderly world" (Brown 1971: 18). A modern viewer of the mosaic will realize that the problems of rules and rulers and the state acting as moderator of human evil are still with us even nowadays. The modern viewer will realize that the problems reflected in this aspect of the mosaic are valid today as they were in those times.

A Successful Ship versus a Distressed One May Symbolize Diverse Concepts

The absence of representations of human figures in the Lod mosaic has been noted (Bowersock et al. 2015: 19; Talgam 2015a: 101–102). Human presence in the

world-pond is marked by human works – two ships of the type *navis oneraria,* the most common carrier ship of the Mediterranean Roman fleet (Casson 1971: 157–200; figs. 154, 156; Ericson 1984; Friedman 2004). One is advancing, sailing with full sails, "running free" before the wind (Fig. 5). The other, facing the opposite direction, stands becalmed (Fig. 6). It is 'at sea', which the dictionary defines as: "to be confused, to be lost and bewildered." The artist stressed that helplessness and the ship's frustrating situation by lowering the mast, yards, sails and tackle (Hadad - Avissar 2003; Rosen 2004)[2]. In stark contrast, these are proudly presented on the freely sailing ship, speeding away from its stranded mate. In view of the previously discussed "big fish eat little fish" scene, significantly, the helplessness of the becalmed ship is stressed by the threatening big fish poised opposite it with open mouth armed by sharp teeth, which was discussed above.

Figure 5
A vessel sailing at full speed, with wind-swollen sails (Photo Nicky Davidov, Courtesy Israel Antiquities Authority).



2 For an alternative approach see Friedman 2004.

Figure 6
A second, stranded ship facing the opposite direction, helpless as shown by the lowered masts, yards, tackles and sails.
(Photo Nicky Davidov, Courtesy Israel Antiquities Authority).

The two ships trying to advance in contrary directions relying on the same wind and the ensuing contrary results symbolize a truism: "You can't please all the people all the time". A blessing for one could be a curse for another". Here a given wind is a useful for one ship and useless, even detrimental, for another. Two such ships appear in a Greek text by Lucian of Samosata (c. 125 AD–after 180 AD). Lucian, a noted orator-writer in Greek was a son of an Aramaic-speaking family. His Aramaic was similar to the vernacular of the Talmudic sages and the language spoken by early Christians. The relevant paragraph appears in a tale composed by Lucian "Icaromenippus, an aerial expedition." (Lukian. Icaromenippus. 25) In the tale, the protagonist flies all the way up to the abode of the gods, aiming to learn how they govern the world (Fowler - Fowler 1905; Nesselrath et al. 2005). *"There he observed Zeus listening to prayers...From every quarter of Earth were coming the most various and contradictory petitions; ...Of those at sea, one prayed for a north, another for a south wind; the farmer asked for rain, the fuller for sun… In one case, I saw him puzzled; two men praying for opposite things and promising the same sacrifices, he could not tell which of them to favor…"* A Jewish form of that Greek discourse appears in Esther Rabba, a homily on the book of Esther. The present form of that Midrash may be late, perhaps as late as the Early Islamic period. However, most scholars concur that it contains older material. As the story goes King Ahasuerus (or Xerxes) arranged a royal party and ordered: "….they should do to any man pleasure" (Esther 1:8). According to the Midrash the Lord rebuked the king: "I do not satisfy all those created, and you ask to: "do to any man pleasure"? As the world is managed, two men ask to marry one woman, can she marry both? Only this one or that one. And so, two ships navigating a harbor, one is asking for a

northern wind and one asking for a southern wind, can one wind move both of them as one? Either to this or to that…." (Tabory - Atzmon 2014: 62–63).

But the two ships may portray more than the vain attempt to sail in opposite directions with the same wind; the scene may also express a different ideology or worldview. Another Talmudic homily discusses different symbolism for two sailing ships pointing in opposite directions: "One ship was departing a port while another was entering it. People were feting the departing boat [perhaps it was a ship on maiden voyage or a ship-launching ceremony?], while none were celebrating the arriving one. An observer commented: 'It should be the opposite, for a departing ship calls for sadness because it will now face so many unknown dangers, while the arriving ship (coming home) we know will be at rest. So it is with people: birth is a grave and even fearful event while death brings eternal peace (*Kohelet Rabba 7; Shemot Rabba 48*). Similar symbolism, of life as a ship voyage and death as the (final) port, appears in late (1st? to 3rd? centuries AD) Greek literature: "But whereas we mortals have death as the destined port of our ills if our lot is miserable" (Longinus 9:7; Beaulieu 2008: *passim*).

The ship graffito in the Beth She'arim cemetery (Mazar 1973: 52, 117 pl. XXIII; Avi-Yonah et al. 1981: 44-47), dated later than the Lod mosaic and reflecting a mixed Jewish, Aramaic and Greek culture, could support the idea of the soul as a sailing ship coming to such final rest peacefully, in such symbolism the wrecked ship could represent a calamitous end. In Beth She'arim, the ship could symbolize a person arriving in peace to his/her final rest. A ship associated with death, perhaps symbolizing the grave as the final harbor, appears in *Satyricon*: *"I beg you to carve ships under full sail on the monument…"* (Petron. Satyricon 71: 6–8).

An additional, different, Christian symbolism that can be applied to the two ships scene can be surmised by the simile appearing in St. Agustin sermon on Psalm 104, 34 *"… By ships we understand churches; they go among the storms, among the tempests of temptations … among the beasts, both small and great. Christ … is the Pilot. … They will sail safely … they will be led to the land of rest"* (http://www.newadvent.org/fathers/1801104.htm). Here the Christian church is the successful ship and the unbelievers are the wrecked ship.

Discussion

Various suggestions on the readily apparent symbolism as well as the more obscure subtext of the marine scene in the Lod mosaic have been discussed above. Citations from ancient Hellenistic, Roman, Jewish and Christian literary sources were used in proposing specific symbolic interpretations. These sources seem to indicate that the creators of the Lod mosaic could have included followers of the skeptic philosophy, pagans, Jews, Samaritans or Christians, and the intended viewers of that work of art could have been as heterogeneous as its creators.

It is not suggested that those who designed and laid the mosaic, or those who commissioned it, read the texts cited above, or/and similar texts, and created the mosaic accordingly. We do posit however, that the intellectual worldview of those who commissioned and created the mosaic and their lexicons of symbolism, images and similes were similar, if not identical, to those of the intellectuals who authored, studied and taught the passages cited above. The wide distribution, in that cultural environment, of the concepts presented above manifests their universality among the classes of people known to have lived in Lod and its

environs in those times. The most prominent concepts were the pond as a symbol of the world, more precisely, the Mediterranean world. Considering that scene as a geographical expression is supported by additional pictorial representations of the geography of distant lands and exotic animals laid out in other sections of the Lod mosaic. Superficially, the sea life and ships observed in the pond could represent the physical world. Simultaneously, at a deeper level these views promulgated the creation and the maintenance of an orderly world by a supreme power, be it a specifically named god, as in Psalm 104, or an ideological-philosophical entity. Additionally, a strongly expressed truism conveyed by the Lod mosaic was big fish eating little fish as a metaphor of the way in which the world functions. It is proposed here that like the literary expositors of that truism, its political implications were obvious to some viewers of the mosaic. A third truism portrayed by the mosaic was that even those who rule the universe cannot satisfy everyone all the time, and what is desired by one can be calamitous to another. Also, there is a possibility that this work of art brings up the ship as a soul symbolism, or the metaphor of life as a sea voyage. Finally, consideration should be given to the interpretation, influenced by Psalm 104, of the successfully sailing ship depicted in the mosaic as a prefiguration of a victorious church.

An early study of the Lod mosaic by Ovadiah and Mucznik (1998) led them to suggest that "the mosaic in question comprises two conceptual and visual trends having a polar and antithetical character that is classical and anti-classical". The comprehensive survey of Israeli and relevant Levantine mosaics by Talgam (2014) could perhaps lead to the refining of the term "anti-classical" by such a definition as "late-classical" or a synthesis of the classical past and the new wave of modified classicism and the contribution of the various forms of raising Christianity. A later comprehensive study of the Lod mosaic commented: "One interpretation does not have to eradicate another… multiple meanings could exist simultaneously…" It is highly likely that the cultural backgrounds of the people frequenting the reception hall were diverse and each would have interpreted the combination of motifs according to their own world view" (Talgam 2015a: 84 and *passim*). Such a mixture of ethnic and religious characteristics is typical to the inhabitants of urban centers. The question arises about the ethnic and religious composition of the inhabitants of Lod (Diospolis) as an urban center. Isaac (1998: 66–73) postulated that cases of mixed population, evident in large urban centers, were also common among rural populations. Fischer - Taxel (2008: 30) correctly point out that Isaac thesis is mainly based on data collected from Eusebius' *Onomasticon*, dated to the 3rd and 4th centuries, when there was still a large amount of paganism in the area and Christianity was a new faith, vigorously expanding.

Although mostly populations belonging to different denominations used to live in different localities, principally in the rural environment (especially during the late Byzantine period, for a detailed discussion see Fischer - Taxel 2008: 29-31), the cases of large urban centers were different. In cities such as Gaza there is a Christian majority, but it is still inhabited by large pagan, Jewish and Samaritan minorities (Glucker 1987: 46-51, 99-102). In En-Gedi discoveries suggest the existence of such a mixed population (De Vincenz 2007: 395) and in Scythopolis/Bet Shean there is evidence of a mixed population, including Jews, Christians, Pagans, and Samaritans (Tsafrir - Foerster 1997: 102-104, 106-108, 116-117). The case of Lod is similar. One might ask whether each of these communities inhabited a particular, restricted area of the city, and to what extent the interaction between these entities led them to share public and private spaces. It is not impossible that each community was confined to a specific dwelling area.

However, bearing in mind the evident situation of wealth and social prestige of the inhabitants of the *villa* in Lod, it can be assumed that the social role they occupied was prominent and even representative, from a social, religious and perhaps economic and commercial point of view. In such a case, it is logical to assume that these functions caused them to interact at various levels, with members of other communities, creating a liminal situation. One can think that in such a scenario many visitants, belonging to the different ethnic-religious groups frequented the villa in different circumstances, together or separately; thus, being able to appreciate the mosaics. What, then, was the message interpreted by the eventual spectators? Does the pond represent a world at a peaceful equilibrium? Is it a symbol of a world in which fish eat fish? Are the sea creatures acting in an apotropaic capacity? What are the two ships symbolizing? Perhaps it is all things to all people?

Bibliography – Kaynaklar

Avissar 1996	M. Avissar, "Lod, the Mosaic Floor", Hadashot Arkheologiyot 108, 157-160.
Avissar 1999	M. Avissar, "Lod, the Mosaic Floor", Qadmoniot 32, 117, 41-43.
Avissar 2001	M. Avissar, "The Representation of Two Merchant Ships on a late Roman Mosaic Floor in Lod (Lydda), Israel", Tropis 6, 47–54.
Avi-Yonah et al. 1981	M. Avi-Yonah – Y. Tsafrir – H. Katzenstein, Art in Katzenstein Ancient Palestine: Selected Studies, Jerusalem.
Beaulieu 2008	M.-C. A. Beaulieu, The Sea as a Two-Way Passage between Life and Death in Greek Mythology, Ph.D. Dissertation, University of Texas, Austin.
Bowersock et al. 2015	G. Bowersock – J. Schwartz – A. Gorzalczany - R. Talgam, The Lod Mosaic: A Spectacular Roman Mosaic Floor, New York.
Braudel 1972	F. Braudel, The Mediterranean and the Mediterranean World in the Age of Philiph II, 2 Vols. (Translated from French by S. Reynolds), Glasgow.
Britt - Boustan 2019	K. Britt – R. Boustan, "Artistic Influences in Synagogue Mosaics, Putting the Huqoq Synagogue in Context", Biblical Archaeology Review 45, 3, 39–68.
Broodbank 2013	C. Broodbank, The Making of the Middle Sea, A History of the Mediterranean from the Beginning to the Emergence of the Classical World, London.
Brown 1971	P. Brown, The World of Late Antiquity, London.
Casson 1971	L. Casson, Ships and Seamen in the Ancient World, Princeton.
Dahood 1970	M. Dahood, The Anchor Bible, Psalms III, Garden City, New York.
De Vincenz 2007	A. de Vincenz, "Christian among Jews in Ein-Gedi", D. R. Edwards - C. T. McCollough (eds.), The Archaeology of Difference: Gender, Ethnicity, Class and the "Other" in Antiquity, Studies in Honor of Eric C. Meyers, AASOR 60–61, 391–396.
Dunbabin 1978	K. M. D. Dunbabin, The Mosaics of Roman North Africa: Studies in Iconography and Patronage, Oxford Monographies on Classical Archaeology, Oxford.
Edelstein 1993	G. Edelstein, "A Roman Villa at 'Ein Ya'el", Qadmoniot 3/4 (103/104), 114–119.
Ericsson 1984	C. H. Ericsson, Navis Oneraria: The Cargo Carrier of Late Antiquity, Studies in Ancient Ship Carpentry, Åbo - Vaasa.
Ferguson 1997	E. Ferguson, "Preaching at Epiphany: Gregory of Nyssa and John Chrysostom on Baptism and the Church", Church History 66, 1–17.
Finley 1962	M. I. Finley, The World of Odysseus, Hardmonsdsworth, Middlesex.
Fischer - Taxel 2008	M. Fischer – I. Taxel, "Rural Settlement in the Vicinity of Yavneh in the Byzantine Period: A Religio Archaeological Perspective", BASOR 350, 7–35.
Friedman 2004	Z. Friedman, "Ships Depicted in the Lod Mosaic Reconsidered", IntJNautA 33, 164–168.

Fowler - Fowler 1905	H. W. Fowler – F. G. Fowler (trans.), The Works of Lucian of Samosata. Oxford. http://www.gutenberg.org/cache/epub/6829/pg6829.html (Release Date: 01.11.2004).
Glucker 1987	C. A. M. Glucker, The City of Gaza in the Roman and Byzantine Periods, Oxford.
Goitein 1999	S. D. Goitein, A Mediterranean Society: the Jewish Communities of the Arab world as Portrayed in the Documents of the Cairo Geniza, Berkeley, California.
Gorzalczany 2015	A. Gorzalczany, "The Roman Manor at Lod", G.W. Bowersock - J. Schwartz - A. Gorzalczany - R. Talgam (eds.), The Lod Mosaic: A Spectacular Roman Mosaic Floor, New York, 38–49.
Gorzalczany 2018	A. Gorzalczany, "Lod, Newe Yaraq", Hadashot Arkheologiyot 130. http://www.hadashot-esi.org.il/report_detail_eng.aspx?id=25489&mag_id=126 (Acces Date: 15.04. 2018)
Gorzalczany et al. 2016	A. Gorzalczany - M. Avissar - H. Torgë - U. 'Ad – E. Jakoel – Y. Elisha, "Lod, the Lod Mosaic", Hadashot Arkheologiyot 128. http://www.hadashot-esi.org.il/report_detail_eng.aspx?id=24984&mag_id=124 (Acces Date: 12.01.2017).
Haddad - Avissar 2003	E. Haddad – M. Avissar, "A Suggested Reconstruction of one of the Merchant Ships on the Mosaic Floor in Lod (Lydda), Israel", IntJNautA 32, 73–77.
Horden - Purcell 2000	P. Horden – N. Purcell, The Corrupting Sea, A Study of the Mediterranean History, Oxford.
Isaac 1998	B. Isaac, "Christians and Others in Palestine: The Evidence from Eusebius", M. Goodmaned (ed.), Jews in the Graeco-Roman World, Oxford, 65-74.
Lawrence 1962	M. Lawrence, "Ships, Monsters and Jonah", AJA 66, 3, 289–296.
Leibner - Miller 1993	U. Leibner – S. Miller, "A Figural Mosaic in the Synagogue at Khirbet Wadi Hamam", JRA 23, 238–264.
Leibner - Arubas 2015	U. Leibner – B. Arubas, "Summary of the Excavation Project at Khirbet Wadi Hamam, a Roman period Village in the Galilee", Qadmoniot 48 (149), 28–39.
Longinus	Longinus, On the Sublime, T.H.R. Stebbing (trans.), London, 1868.
Magness 2010	J. Magness, "Third Century Jews and Judaism at Bet Shearim and Dura Europus", D. M. Gwynn – S. Bangert (eds.), Religious Diversity in Late Antiquity, Leiden, 135–166.
Magness et al. 2018	J. Magness – S. Kisilevitz – M. Grey – D. Mizzi – D. Schindler – M. Wells – K. Britt, R. Boustan – S. O'Connell – E. Hubbard – J. George – J. Ramsay- E. Boaretto – M. Hazan, "The Huqoq Excavation Project: 2014–2017 Interim Report", BASOR 380, 61–131.
Magness et al. 2019	J. Magness - S. Kisilevitz - M. Grey – D. Mizzi - K. Britt – R. Boustan, "Inside the Huqoq Synagogue", Biblical Archaeology Review 45, 3, 24–38.
Malkin 1998	I. Malkin, The Returns of Odysseus, Colonization and Ethnicit, Berkeley, Los Angeles, London.
Mazar 1973	B. Mazar, Beth Shearim I: Report on the Excavations 1936–1940, Jerusalem, Masada.
Mieder 2014	W. Mieder, Tradition and Innovation in Folk Literature, London.
Miller - Leibner 2018	S. Miller – U. Leibner, "The Synagogue Mosaic", U. Leibner (ed.), Khirbet Wadi Hamamm a Roman-Period Village and Synagogue in the Lower Galilee (Qedem Reports 13), Jerusalem, 144–187.
Nesselrath et al. 2005	H.-G. Nesselrath – C. Markschies - H. Leppin, "Lucianus", H. Cancik - H. Schneider (eds.), Brill's New Pauly Supplements II, Vol. 7, Leiden and Boston, 835–845.
Oppenheimer 1988	A. Oppenheimer, "Jewish Lydda in the Roman Era," Hebrew Union College Annual 59, 115–136.
Ovadiah - Mucznik 1998	A. Ovadiah – S. Mucznik, "Classical Heritage and Anti-Classical Trends in the Mosaic Pavement of Lydda (Lod)", Assaph 3, 1–16.
Papadopoulos - Ruscillo 2002	J. K. Papadopulos – D. Ruscillo, "A Ketos in Early Athens: An Archaeology of Whales and Sea Monsters in the Greek World", AJA 106, 2, 187–227.
Parsons 1945	W. Parsons, "Lest Men, Like Fishes", Traditio 3, 380–388.
Percival 1977	H. R. Percival, The Seven Ecumenical Councils (The Nicene and Post-Nicene Fathers Vol. 14), Eerdmans.
Rosen 2004	B. Rosen, "Comments on the Reconstruction of one of the Ships on the Lod Mosaic", IntJNautA 33, 167–168.
Roussin 1995	L. A. Roussin, "East Meets West: The Mosaics of the Villa of 'Ein Yael (Jerusalem)", P. Jhonson – R. Ling – D. J. Smith (eds.), Fifth International Colloquium on Ancient Mosaics held at Bath, England, JRA Supp. Series 9, Ann Arbor, 30–42.
Schwartz 1991	J. J. Schwartz, Lod (Lydda), Israel: From its Origins through the Byzantine Period 5600 B.C.E–640 C.E., Oxford.

Schwartz 2015	J. J. Schwartz, "Ancient Lod: An Historical Survey from the Persian Period through the Byzantine Period", G.W. Bowersock - J. Schwartz - A. Gorzalczany - R. Talgam (eds.), The Lod Mosaic, a Spectacular Roman Mosaic Floor, New York, 24–37.
Tabory - Atzmon 2014	J. Tabory - A. Atzmon, Midrash Esther Rabbah, Jerusalem, Hebrew.
Talgam 2014	R. Talgam, Mosaics of Faith: Floors of Pagan, Jews, Samaritans, Christian and Muslims in the Holy Land, Jerusalem.
Talgam 2015a	R. Talgam, "The Late Roman Mosaics at Lod", G.W. Bowersock - J. Schwartz - A. Gorzalczany - R. Talgam (eds.), The Lod Mosaic: A Spectacular Roman Mosaic Floor, New York, 50–107.
Talgam 2015b	R. Talgam, "Afterword: An Early Roman Floor Discovered in 2014", G.W. Bowersock - J. Schwartz - A. Gorzalczany - R. Talgam (eds.), The Lod Mosaic: A Spectacular Roman Mosaic Floor, New York, 108–109.
Toynbee 1971	J. M. C. Toynbee, Death and Burial in the Roman World, London.
Tsafrir - Foerster 1997	Y. Tsafrir – G. Foerster, "Urbanism at Scythopolis-Bet Shean in the Fourth to Seventh Centuries", DOP 51, 85–146.

DOI: 10.26658/jmr.614855

JMR 12, 2019 63-73

Iconography of Marine Vessels Depicted in Mosaics and Its Importance to Marine Archaeology

Mozaikler Üzerinde Betimlenen Deniz Taşıtlarının İkonografisi ve Deniz Arkeolojisi Açısından Önemi

Eva GROSSMANN*

(Received 12 March 2017, accepted after revision 30 September 2019)

Abstract

This article deals with the iconography of ancient ships, depicted in mosaics of the Eastern Mediterranean coast, from Syria, Lebanon, Jordan, Israel to Egypt. As shipping was one of the most important transports for trade, and not only in the Mediterranean Region, artists frequently used ships as a subject of their artworks. Ships are depicted on frescoes (e.g. a drawing of a sailing boat in the Church of St. Vartan in the Church of the Holy Sepulchre in Jerusalem. Gibson 1994: 34-42), mosaics, coins, even engraved on walls, such as on the wall at the crusader castle in Akko Israel. It is important to mention that in ancient times artists tried to convey a precise image of the objects they represented, thing that helps us to understand the exact appearance of the researched boats; a trend not common in contemporary mosaic art.

The mosaics we are referring to here were predominantly made from tesserae cubes measuring 1 sq. centimeter, but often smaller cubes were used to depict faces (Figs. 11, 12). Mosaics depicting ships have been discovered in various places such as churches (Fig. 12), public and private houses (Figs. 8, 11, 12), even under a threshing-floor (Fig. 5). In buildings, they were frequently included in stories (Fig. 8) often from Greek mythology (Thesaurus on a boat with Ariadne, Daszewski 1977: pl. 30) and in churches in medallions (Fig. 13).

The earliest mosaic we describe in this article is the reed boat from El-Amarna, Egypt (Fig. 14), from the 1st century BC. Unlike wooden boats, remains from ancient reed boats have not been found, since they decay with time. Nevertheless, their uses are known to us from literature and artworks. Furthermore, from the 2nd century AD and onwards, decorating churches (Fig. 13) and rich houses (Figs. 8, 11, 12) with mosaic floors started to become a common custom in this region.

Keywords: *Ship construction, Mediterranean Sea, mosaics, vessels, Classic and Byzantine Period.*

Öz

Bu makalede, Suriye, Lübnan, Ürdün ve İsrail'den Mısır'a kadar olan alanda, Doğu Akdeniz kıyılarının mozaiklerinde betimlenen antik gemilerin ikonografisi ele alınmaktadır. Sadece Doğu Akdeniz'de değil, deniz taşımacılığı ticaret için en önemli nakliye araçlarından biri olduğundan, sanatçı da sanat eserlerinde konu olarak sıkça gemileri kullanmıştır. Gemiler fresklerde de tasvir edilmiştir (örneğin Kudüs'teki Kutsal Kabir Kilisesi'nin içindeki St. Vartan Kilisesi'ndeki bir yelkenli teknenin çizimi. Mozaikler, sikkeler ve hatta Akko/İsrail'deki Haçlı Kalesi'ndeki duvar kazımaları gibi). Antik çağlarda sanatçılar betimledikleri nesnenin kesin bir görüntüsünü eserleri üzerinde yansıtmaya çalışmışlardır ve bunun da araştırılan teknelerin tam bir görünümünü anlamamıza yardımcı olan ve çağdaş mozaik sanatında yaygın olmayan bir eğilimi yansıttığını söylemek önemlidir.

* Eva Grossmann, Ph.D., Hailanot street 6, 46910 Kfar Shmariahu, Israel. ORCID ID: https://orcid.org/0000-0003-1315-4503. E-mail: dreva32@hotmail.com

Burada sözü edilen mozaikler büyük çoğunlukla 1 cm² büyüklüğündeki küp tesseralardan üretilmiş olmakla birlikte yüz betimlerinde sıklıkla daha küçük boyuttaki küpler kullanılmıştır. Gemi betimli mozaikler kiliseler, kamu ve özel yapılar hatta bir harmanyeri olmak üzere farklı yerlerde tespit edilmiştir. Yapılardaki gemi betimleri çoğunlukla Yunan mitolojisi (Ariadne ile beraber bir bottaki Thesaurus) ve Nilotik sahnelerde görülürken, kiliselerde madalyonlarda karşımıza çıkmaktadır.

Bu makalede ele alınan üzerinde sazdan bir tekne betimi olan en erken tarihli mozaik El-Amarna / Mısır'da bulunmaktadır ve MÖ 1. yüzyıla tarihlenmektedir. Ahşap teknelerden farklı olarak, antik çağ sazdan teknelerin kalıntıları zamanla çürümeleri nedeniyle bulunamamıştır. Bununla birlikte, saz teknelerinin kullanımları edebiyat ve sanattan bilinmektedir. Ayrıca, MS 2. yüzyıldan itibaren kiliseler ve zengin evlerin mozaiklerle dekore edilmesi bu bölgede ortak bir gelenek haline gelmiştir.

Anahtar Kelimeler: *Gemi yapımı, Akdeniz, mozaikler, tekneler, Klasik ve Bizans Çağları.*

Introduction

What can be learned from vessels illustrated in mosaics?

The numerous representation of early vessels found on a variety of artistic media is of great importance to marine archaeology.

The study of excavated shipwrecks found on the seafloor as well as in ship-burials enhances our knowledge of shipbuilding in ancient times. Unfortunately, these studies focus mostly on the hull, or often only on some parts of it, as the remains of deck, rigging and mast are rarely found.

By examination of the large variety of ship images found on mosaics, coins, frescoes, and tapestries, we can learn on how they were built. All these media are equally important, but we will nevertheless concentrate only on vessels appearing on mosaics.

Many mosaics discovered around the Mediterranean Sea show ships every so often depicted either to the last detail, or only stylized, and sometimes influenced by the shape or size of the space into which their images were placed, such as medallions (Fig. 13) or triangles. But often they give additional information on some items of importance. This can be the technique of building, or the utilization of the vessel as means of transportation, combat, fishing or trade. The mosaic floor in Althiburus, (Tunisia) (Fig. 1) (Casson 1971: fig. 137) providing

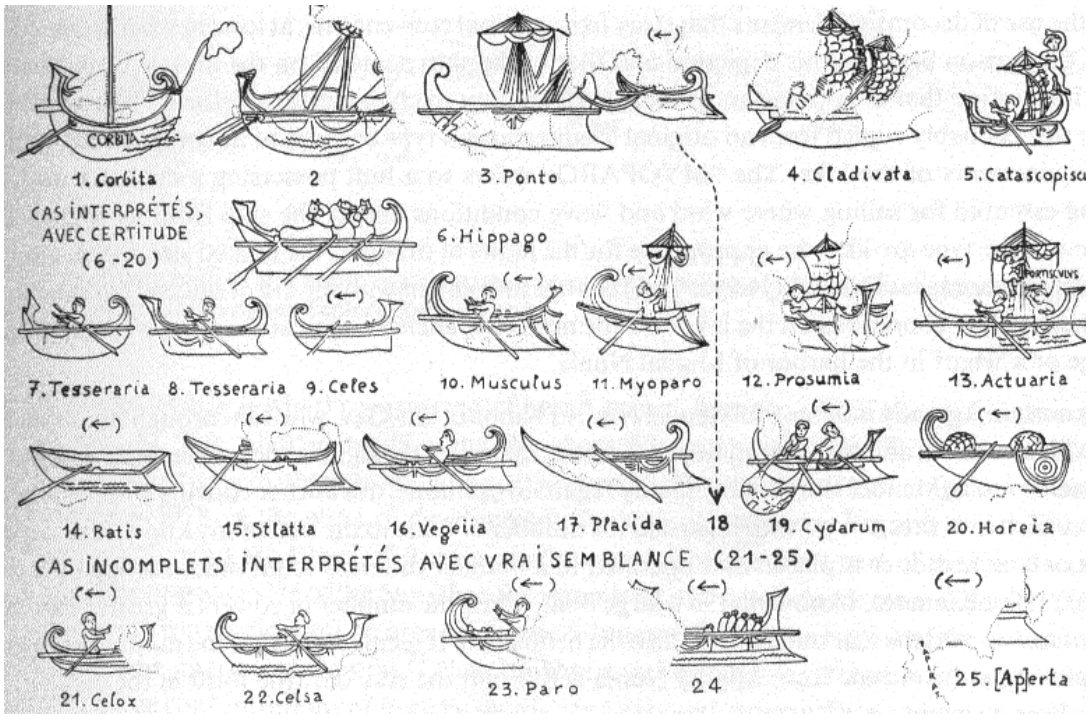


Figure 1
Diagram of ships depicted on the mosaic floor in Althiburus, Tunisia (Casson 1971: fig. 137).

the ships' names and uses, is an example of it. Fig. 2 is a picture of the diagram shown in Fig. 1 (top row on the left) of the vessel *Corbita*. Another example of the various types of the display is the great number of ships depicted on the 2nd century floor of Foro delle Corporationi, Ostia (Italy), and the Nile mosaic at Palestrina (Italy) from the 1st century BC (Meyboom 1995: fig. 6).

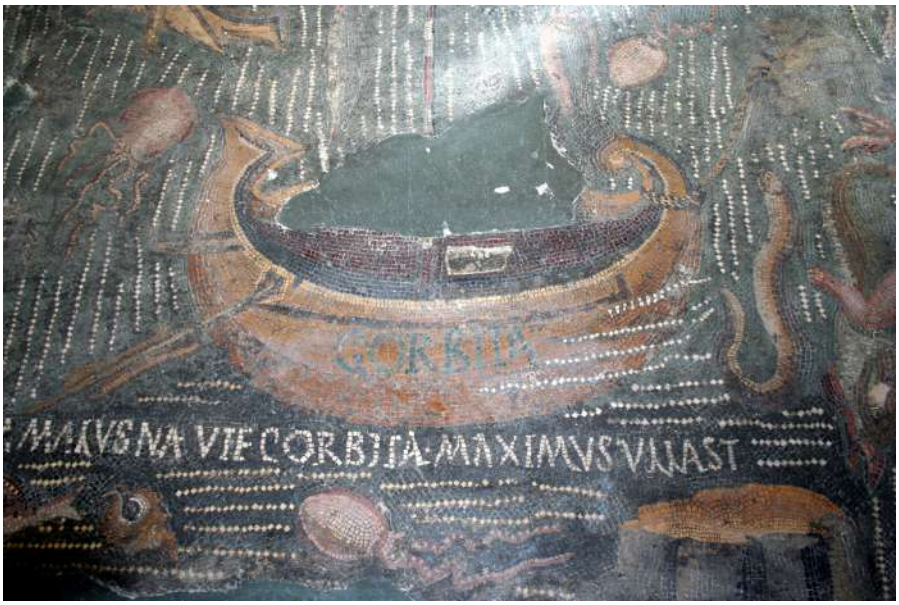


Figure 2
Ship '*Corbita*' from the mosaic in Althiburus (by courtesy of S. Kingsley) (Grossmann 2011: 40 fig. 67).

Description of Vessels

The mosaic floor of Foro delle Corporationi, Ostia (Italy), is dated to the 2nd century AD. The image of the ship (Fig. 3), given here as an example, shows a device extending the keel at the bow, possibly signifying that this device could have been either a battering ram or a cutwater. This is also represented in other specimens, such as on the 1st century floor at Migdal Nunia (Israel) (Fig. 4), the Haditha mosaic (Israel), 6th century AD (Fig. 5) (Avi-Yonah 1972). Raban (1988: 50-51) explains that the main reason for extending the length of vessels by lengthening the keel at the bow was to improve their hydrodynamics and stability.

Figure 3
Ship from the mosaic floor of Foro delle Corporationi, Ostia, Italy, 2nd century AD (Basch: 1987: 1056 Station 32).

Figure 4
Migdal Nunia, Israel, floor of the 1st century AD (by the courtesy of the Israel Antiquities Authority).

Figure 5
Detail of ship from the Haditha mosaic, Israel, 6th century AD (photo by R. Kotzer, by courtesy of the Israel Antiquities Authority) (Grossmann 2011: 41 fig. 69).

Shipwrecks found on the sea floor, not only in a shallow but also in deep waters, (Stemm - Kingsley 2013: 123-126 fig. 2) are mostly covered by ballast stones and cargo, and only small parts of the hulls remain preserved. The upper parts are mostly missing.

Description of shipbuilding in literature is incomplete. Ancient literature has some fragmentary references of shipbuilding (Stronk 1992-93: 126), such as

Figure 6
The Ma'agan Michael ship, as salvaged from the sea. Today in the Hecht Museum, Haifa (Linder - Kahanov 2003).

Homer describing how Odyssey built himself a boat when he left the island of Calypso (Hom.Od. XII, 432), or Vitruvius (Vitr. 2. 9) describing the wood used for boat building.

We will take as an example for the importance of iconography the wreck of the merchant ship found on the Israeli shore at Ma'agan Michael (5th century BC) (Figs. 6-7). Here too, only part of the 11.25 m long and 4 m wide hull was preserved. It was decided to build a replica, which was finished in 2016. The replica was launched as Ma'agan Michael II and is suitable for seafaring.

Figure 7
Ma'agan Michael II (Photograph by Ilan Ben Zion - University of Haifa).
(https://www.haifa.ac.il/index.php/en/bogrim-top-white-2/68-english/tehuda-eng/2548-after-2500-years-the-ship-from-ma-agan-michael-goes-back-in-the-water.html)

We can find vessels resembling the Ma'agan Michael ship on the mosaic of Haditha from the 6th century (Fig. 5), as well as the two ships depicted on the mosaic of Beth Shean dated to the 5th century (Figs. 11-12). The same is true of the Kyrenia merchant ship (from the 4th century BC), discovered in 1967 in Cyprus. Also here only the remains of the ship's hull, 14.5 m long and 4.4 m wide were preserved. In 1985, a replica the Kyrenia II was built, comparable to the Ma'agan Michael ship. The Kyrenia II is sea-fit and visited harbours all over the oceans. The construction of both replicas has been based to a great part on iconography.

Merchant ships being heavy, were moved mainly by sails. Nevertheless, they were equipped also with oars, to be used in harbours and in emergencies. This feature is also mentioned in literature by Aristotle, comparing a merchant ship using oars to a heavy insect having small wings and not able to move them (Aristot.an.).

Examples for understanding the substance of vessels can be taken from various mosaics, as the 200 m^2 mosaic carpet discovered in the town of Lod (Israel) (Avissar 1998: 169-172). The carpet consists of five sections. The middle section shows two merchant ships encircled by marine life, one of them under sail (Fig. 8). Regrettably part of one of the ship's image in the centre of the carpet was damaged. Both ships as in most mosaics are shown floating on water, to emphasize the deep body and keel. They are drawn into the last detail. It seems that the image of the ship in the damaged section was represented even more

accurately than the other ship, which is shown under sail. The mosaic is executed to such perfection that the wind in the sail can be sensed. The massive, tapered mast stands slightly forward off the middle. The yard holding the sail is about one third of the length of the mast, located close to its top. It was possible to raise or lower the yard, as required by sailing conditions. Above the yard is a small triangular sail. The main square sail when not in use, would have been folded and tied to the yard, similarly to the ship from the mosaic at Salzburg (Austria), depicting Theseus and Ariadne (Fig. 9) (Daszewski1977: pl. 30). On the bow of the Lod ship is a 'castle', possibly the captain's cabin. At the stern is a projecting beak with railing, decorated for luck by a goose-head. The two Lod ships, as said, show the finest details of the hulls, masts, rigging, sails, decks and

Figure 8
Lod, Israel. Mosaic with two merchant ships. 3rd to 4th century AD (by courtesy of the Israel Antiquities Authority) (Grossmann 2011: 28 fig. 45).

Figure 9
Theseus and Ariadne
(Daszewski 1977: pl. 30).

the head with the bird on the railing. They are characteristic of medium-range Roman merchant vessels, less than 20 m in length and of 100 - 200 tonnage (Parker 1992: 89). The representation of marine craft, especially on this mosaic, enriches our understanding of how ships, including the deck, mast and rigging, were built during the Late Roman period.

The square sail used in antiquity had to be shortened or released as required by sailing conditions, as mentioned previously. This was done by brails, short ropes sewn to and hanging from the sail. The brails were also used when folding and lashing the sail to the yard when not in use (Fig. 9). On the 5th - 6th century AD mosaic from Zea al-Gharby (Jordan) (Piccirillo 1993: fig. 660) the brails are marked by vertical lines on the sail (Fig. 10).

Figure 10
Sailing vessel, Zay al-Gharby, Jordan, 5th-6th century AD (Piccirillo 1993: fig. 660).

In a more stylistic illustration of the same period, in the Beth Shean (Israel) 5th century AD mosaic (Fig. 11), the sail is partly lifted and the brails, here too, are depicted by vertical lines. Examples are abundant.

On the two examples from Haditha (Fig. 5) and Beth Shean (Figs. 11-12) the ships are loaded with amphorae. These are shown disproportionally larger in relation to the boat, as also are the figures of sailors or fishermen. The ships' cargo is wine or oil, the main merchandise traded during the Roman period. The amphorae in figure 11 are of the Byzantine bag-shape type. On the second picture (Fig. 12) the amphorae are more stylized, only confirming that the ship is a merchant ship.

Figure 11
Boat from the Nilotic scene, Beth Shean, Israel. 5th century AD (photo by courtesy of the Israel Antiquities Authority) (Grossmann 2011: 34 fig. 58).

Figure 12
Boat from the Nilotic scene, Beth Shean, Israel. 5th century AD (photo by courtesy of the Israel Antiquities Authority) (Grossmann 2011: 33 fig. 56).

Figure 13
Ship from the Church of Beith Loya, Israel, 500 AD (photo by courtesy of the Israel Antiquities Authority) (Grossmann 2011: 39 fig. 66).

At Beth Loya (Israel) (Fig. 13), situated halfway between Hebron and Ashkelon, the region of the ancient Roman town Eleutheropolis (Patrich - Tsafrir: 1993a; 1993b), a church complex paved with mosaic carpets was excavated. In one of the aisles a medallion of 1.47 m diameter showing a fishing boat can be found. Here too the brails are emphasized, but most important is the massive ring, connecting the yard with the sail to the mast, making it possible to raise and lower the sail, as well as to turn it into the wind. The planking of the hull is represented by different colors. There is a railing on top of the gunwale.

Reed boats from antiquity have not been found, as obviously their substance disintegrated, but they are known from present day use. From various mosaics we can assume that they were commonly used in antiquity. A very interesting example is a fragment believed to originate from El-Amarna (Egypt) (Figs. 14a-b), that after changing hands found its way back "home" to Egypt and is today in the

Figure 14a
Nilotic scene on mosaic fragment, El-Amarna, Egypt, 1st century BC (Photographed by the author at the Museum of Agriculture, Cairo).

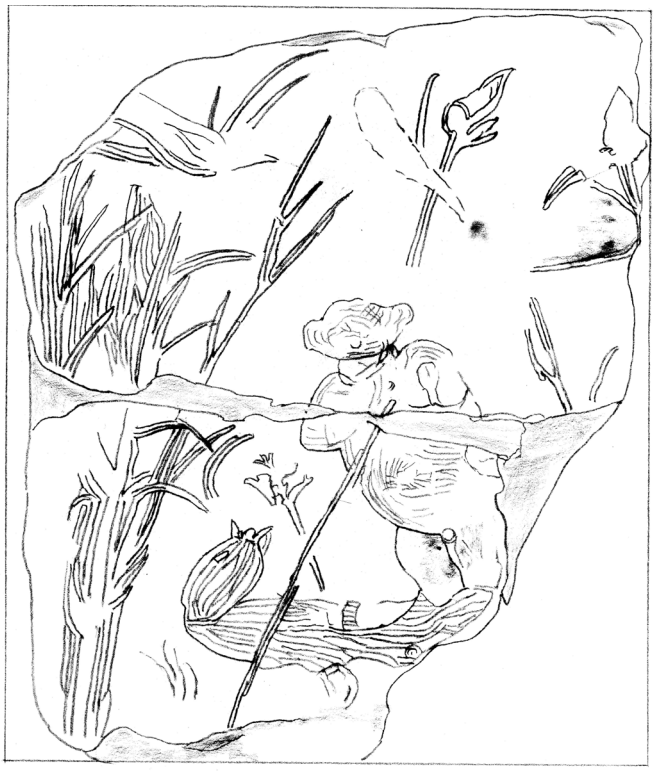


Figure 14b
Drawing of the Nilotic scene on the mosaic fragment, El-Amarna, Egypt, 1st century BC (Drawing by the author).

Museum of Agriculture in Cairo. Daszewski (1985: 167 cat. no. 44 pl. 37) suggested that it originated rather in the northern region of Egypt, the Delta, Alexandria or Canopus. He dates the fragment to the Late Hellenistic period, probably to the beginning of the 1st century BC, based on the realistic and unconventional representation of the scenery and the image of the pygmy intimating Hellenistic art.

Conclusion

This article is essentially a study of information from mosaics and other artistic media, concerning ship construction techniques, their spreading throughout the Hellenistic period and into the modern era, by combination of artistic depiction and oral traditions. By carefully comparing details of mosaics, such as the 3rd-4th century AD Lod floor in Israel, with the 18th century ship *Amsterdam*, it is clear that many of the same components, such as shrouds and pulleys, remained in principle unchanged during the course of time. This could also hold true for hull construction. Ancient techniques of reed construction discernible in ancient floor mosaics may be observed in the modern era on Lake Titicaca in Bolivia and Peru.

Most notable is the unique character of boat and ship forms, of what may be classified as regional "Near Eastern Mediterranean vessels". Merchant vessels powered by sail, especially as represented at Zay al-Gharby (Jordan) and Lod, Beth Shean (Israel), feature comparable broad hulls crafted in tesserae, with false perspective semi-circular hull shapes and with outward turned, beak-like stem-posts. Clearly the artist wished to convey a sense of the merchant vessel being burdened by heavy weight; keels are of course in reality not rounded along their lengths.

The fishing boat illustrated on the mosaic from Beith Loya (Fig. 13) gives a detailed picture of the mast, yard and sail, from which can also be understood how the sail was moved into the wind.

Merchant vessels were probably also often used for fishing or transportation. There was not a difference shown in iconography between merchant, transport or fishing ships. They can be distinguished from the cargo, as amphorae (Figs. 5, 11, 12) or sailors fishing (Fig. 13). We would therefore deduct that the same vessels were used for trade, fishing and transport.

War-ships are not discussed in this paper, since they have been scarcely represented on Eastern Mediterranean mosaics. It is known that they were longer and narrower than merchant ships, with a hull not as deep, powered by sail and oars. They were depicted abundantly on Greek pottery. Likewise, the Viking ships, mainly war-ships, known from excavations of ship burials, were longer and narrower than the Mediterranean merchant ships.

To fully conceptualize the art of boat building in the ancient Mediterranean, it is important to embrace the fact that these were inherited skills passed down from father to son. Therefore, applying ethnographical archaeology to the study of ancient marine architecture is likely to provide a fruitful avenue of research, since there are clear parallels between pictures on floor mosaics and marine constructions found in the same region.

Studying marine crafts in mosaic pavements also reveals the transmission of technical configuration throughout time, evidenced by the replication of identical details into the modern era.

Bibliography – Kaynaklar

Avissar 1998	M. Avissar, "Lod – A Mosaic Floor", ExcIsr 17, 169-172.
Avi-Yonah 1972	M. Avi-Yonah, "The Haditha Mosaic Pavement", IEJ 22, 118-122.
Basch 1987	L. Basch, Le Musée Imaginaire de la Marine Antique, Athens.
Casson 1971	L. Casson, Ships and Seamanship in the Ancient World, New Jersey.
Daszewski 1977	A. W. Daszewski, Nea Paphos II, La mosaïque de Thésée, Vasovie.
Daszewski 1985	A. W. Daszewski, Corpus of Mosaic from Egypt I: Hellenistic and Early Roman Period, Mainz.
Gibson 1994	S. Gibson, "The Ship Drawing", S. Gibson – J. E. Taylor (eds.), Beneath the Church of the Holy Sepulchre, Jerusalem: The Archaeology and Early History of Traditional Golgotha (Palestine Exploration Fund Monograph Series Major 1), London, 25-50.
Grossmann 2011	E. Grossmann, Marine Craft in Ancient Mosaics of the Levant, BARIntSer 2249, Oxford.
Linder - Kahanov 2003	E. Linder - Y. Kahanov, The Ma'agan Michael Ship, Haifa.
Meyboom 1995	P. G. P. Meyboom, Palestrina, Early Evidence of Egyptian Religion in Italy, Leiden, New-York, Cologne.
Parker 1992	A. J. Parker, "Cargos, Containers and Stowage: the Ancient Mediterranean", IntJNautA 21, 2, 89-100.
Patrich - Tsafrir 1993a	J. Patrich – Y. Tsafrir, "Beith Loya, Horvat", E. Stern (ed.), The New Encyclopedia of Archaeological Excavations in the Holy Land, Jerusalem, 210-213.
Patrich - Tsafrir 1993b	J. Patrich – Y. Tsafrir, "A Byzantine Church Complex at Horvat Beith Loya", Y. Tsafrir (ed.), Ancient Churches Revealed (Israel Exploration Society), Jerusalem, 265-272.
Piccirillo 1993	M. Piccirillo, The Mosaic of Jordan, Amman.
Raban 1988	A. Raban, "The Ship from Migdal Nunia", Sefunim 7, 48-55.
Stemm – Kingsley 2013	G. Stemm - S. Kingsley, Oceans Odyssey 3, The Deep-Sea Tortugas Shipwreck, Straits of Florida: A Merchant Vessel from Spain's 1622 Tierra Firme Fleet, Oxford and Oakville.
Stronk 1992-93	J. P. Stronk, "Greek sailing merchant-ships, c. 500 - 330 B.C. A preliminary research", Talanta 24-25: 117-140.

DOI: 10.26658/jmr.614861

JMR 12, 2019 75-106

Le Patrimoine Mosaïstique En Tunisie : Un État De Lieu

Tunus Mozaik Mirası : Genel Bir Tanı

Jamel HAJJI *

(Received 04 December 2018, accepted after revision 09 September 2019)

Abstract

The Tunisian Mosaic Heritage: General Diagnosis

This research aims to draw a diagnosis, as exhaustive as possible, of the Tunisian mosaic heritage. Through multiple investigations of sites -some of which are inscribed on the World Heritage List- reserves and museums, (fifty-three different locations) we try to reveal some hidden aspects of an often-unknown iceberg.

Similarly, we examine the impact of the conservative/preservative programs and strategies, as well as the methods and practices followed, undertaken from the beginning of the second half of the last century until today, so far to ensure, the longevity, preservation and safeguarding of such a cultural heritage. What exactly are we preserving? A witness of history, a scientific document or simply an element of cultural show? Can we really talk about the existence of a national strategy to preserve such civilizational earnings? The practices of decision-makers, are they really respecting the universal standards and requirements?

Moreover, we question the reliability and efficiency of the methods and practices that still organize the inventories, archives, presentation and exposure. Would the norms and the fundamental principles, fixed by universal texts, be unknown! What is the mosaic/document considered as? A beautiful object to see, a flashy presented to the general public! Or an archaeological testimony with significant, historical, artistic, technical and scientific values!

Keywords: *Tunisian Roman mosaics, conservation, enhancement, practices, requirements.*

Öz

Bu araştırma, Tunus mozaik mirası ile ilgili mümkün olduğunca ayrıntılı bir görüntü çizmeyi amaçlamaktadır. Çok sayıda yerleşim yeri -bir kısmı Dünya Miras Listesi'nde kayıtlı-, rezerv ve müze araştırmasıyla (elli üç farklı yer), sıklıkla bilinmeyen bir buzdağının bazı gizli yönlerini ortaya çıkarmaya çalışıyoruz.

Benzer şekilde, şimdiye dek böyle bir kültürel mirasın uzun ömürlülüğünü, korunmasını ve kurtarılmasını sağlamak için, geçen yüzyılın ikinci yarısının başından bugüne kadar üstlenilen konservatif/koruyucu program ve stratejilerin yanı sıra, izlenen yöntem ve uygulamaların etkisini de inceliyoruz. Tam olarak neyi koruyoruz? Tarihi bir tanık, bilimsel bir belge veya sadece kültürel bir gösteri unsurunu mu? Bu tür uygarlık kazancını korumak için ulusal bir stratejinin varlığından bahsedebilir miyiz? Karar vericilerin uygulamaları, evrensel standartlara ve gereksinimlere gerçekten saygı duyuyorlar mı?

Ayrıca, envanterleri, arşivleri, sunumları ve teşhirleri hala düzenleyen yöntem ve uygulamaların güvenilirliğini ve verimliliğini sorguluyoruz. Evrensel metinler tarafından belirlenen normlar ve temel ilkeler, bilinmiyor mu? Mozaik / belge olarak kabul edilen nedir? Genel halkın görmesi için sunulan gösterişli güzel bir nesne mi? Veya önemli, tarihi, sanatsal, teknik ve bilimsel değerleri olan bir arkeolojik tanıklık mı?

Anahtar Kelimeler: *Tunus Roma mozaikleri, konservasyon, geliştirme, uygulamalar, gereksinimler.*

* Jamel Hajji, Chargé de Recherches Archéologiques et Historiques à l'Institut National du Patrimoine de Tunisie, 4 place du château, 1008, Tunis. ORCID ID : https://orcid.org/0000-0003-0850-6893. E-mail: jamelhajji@hotmail.fr

Avant-Propos

Pour éviter les confusions et les malentendus, que pourrait engendrer l'utilisation de certaines notions, telles la restauration et la conservation, nous jugeons utile de préciser quelques détails, sans rentrer dans la diversité des acceptions courantes qui véhiculaient et conditionnaient généralement toute étude, voire tout projet, visant à retracer d'une manière analytique et synthétique l'état d'un patrimoine culturel assez particulier.

Nous entendons par le terme restauration, la totalité des interventions matérielles et physiques subies par le pavement/document, dans un atelier ou sur site, sans porter atteinte ni à l'intégrité de ses composantes originelles ni à sa structure de base. En revanche, la conservation est l'ensemble des concepts, procédures, mesures et conditions mises en œuvre pour assurer la pérennité du pavement/document ; préserver toutes ses polarités archéologiques, historiques,artistiques, documentaires et culturelles, en vue de leur transmission aux générations futures.

Etroitement imbriquées, restauration et conservation devraient à la fois protéger et préserver ce témoin de l'histoire de la société, voire plus un héritage de l'humanité, de toute mutilation qui pourrait toucher son authenticité et limiterait définitivement les possibilités ultérieures de le comprendre. Telle est l'exigence, ou pour mieux dire l'un des principes fondamentaux imposés par de nombreux textes universels, comme la charte de Venise en 1964, le document sur l'authenticité de Nara de 1994, la charte du patrimoine bâti vernaculaire en 1999, en particuliers. On peut aussi songer aux nombreuses directives établies, entre autres, par l'ICOMOS, l'ICCM et l'ICCROM, qui guident et orientent aujourd'hui toute la pratique restauration/conservation et lui imposent ses règles et ses limites.

Principe et réalité, recommandation et pratique, un vrai paradoxe, voire un dilemme, auquel devrait répondre toute étude cherchant à dresser un état de lieu et par-delà essayer d'esquisser le devenir et l'advenir d'un patrimoine ayant un caractère assez spécifique. Pour mieux cerner tous les aspects, ainsi que toutes les articulations de cette problématique nous avons choisi de mener des multiples investigations sur terrain. À vrai dire, les formulations et les lectures, analyse des situations et constatations, qui suivrons sont basées sur des éléments recueillis sur vingt-sept sites archéologiques[1] *(Acholla, Althiburos, Ammaedara, Bulla Regia, Furnos Maius, Giufi, Horrea Caelia, Jbel Oust, Karthago, Lepti Minus, Mactaris, Mustis, Neapolis, Pupput, Sicca Veneria, Simitthus, Sufetula, Sulectum, Thaenae, Thapsus, Thuburbo Maius, Thugga, Thysdrus, Utica, Uthina, Uzitta et Zama Regia)* treize réserves *(Althiburos, Ammaedara, Bulla Regia, Karthago, Horrea Caelia, Leptis Minus, Mactaris, Sufetula, Thaenae, Thuburbo Maius, Thugga, Thysdrus et Utica)* et treize Musées (Carthage, Chemtou, Eljem, Haïdra, Le Bardo, Lemta, Mactar, Nabeul, Salacta, Sbeitla, Sfax, Sousse et Utique)[2]. Tous ces lieux se répartissent sur quatorze gouvernorats(Béja, Ben Arous, Bizerte, Jendouba, Kasserine, Le Kef, Mahdia, Monastir, Nabeul, Sfax, Siliana, Sousse, Tunis et Zaghouan).

Notre intention initiale de dresser un bilan, un état de lieu, aussi exhaustif que possible s'est heurtée à des nombreux obstacles. Des archives administratives, en

1 Nous remercions nos collègues, responsables des sites et des musées, pour leur compréhension et surtout pour leur générosité.

2 Les photos insérées dans ce texte ne sont que représentatives. À vrai dire, lors de nos investigations sur terrain nous avons pris presque dix mille photos.

l'occurrence les conventions et les coopérations sur la mosaïque entre l'Institut National du Patrimoine de Tunisie (INP) et les institutions et organismes internationaux, nous n'avons pu accéder qu'à deux documents, insignifiants. Le premier, est un rapport financier sur le Corpus des mosaïques de Tunisie, de 1975. Quant au second, il s'agit d'une convention avec le Getty Conservation Institut, de 2010.

Une telle déficience, constitue un vrai handicap devant toute investigation cherchant à retracer l'historique, voire le devenir, de toutes les stratégies conservatives qui avaient été entreprises par l'INP dans le domaine de la mosaïque, que ce soit sur sites ou dans les Musées, depuis la fin des années soixante jusqu'à aujourd'hui. De surcroît, une mise en question de la fiabilité et de l'efficacité des méthodes, des interventions et des pratiques qui ont conditionné, et qui conditionnent encore, la séquence des opérations techniques. Que conserve-t-on exactement, un témoin de l'histoire, un document scientifique ou caution du marché culturel-spectacle ? Dans quel but et pour quel public ? Pour combien de temps ? Avec quels moyens, financiers et humains ? Les objectifs des intervenants décideurs sont-ils à la hauteur des exigences et des progrès techniques ?

L'inexistence d'une base de données, archivistique/documentaire, nationale spécifique du patrimoine mosaïstique[3], des pavements existants, *in situ*, entreposées dans les réserves ou exposées dans des Musées, empêche le retracement de toutes les informations historiques, archéologiques concernant chaque pavement/document[4]. De Même, elle entrave toute vérification sur l'historique des interventions et des restaurations, voire les ré-restaurations, réalisées depuis longtemps ; le personnel intervenant, les méthodes poursuivies et les matériaux utilisés dans les différentes interventions, entre autres.

S'il est vrai que les indigences évoquées précédemment ont pu influencer, avec des degrés plus ou moins variés, nos constatations finales et nos approches analytiques, en revanche on peut noter que les données recueillies sur terrain nous ont permis de surpasser de nombreuses lacunes et réaliser un travail d'occultation, même partiel, ainsi que de dévoiler certains aspects cachés d'un iceberg souvent méconnu.

I- Sites archéologiques :

Une grande partie de la collection mosaïstique tunisienne, se trouve sur sites, maintenue dans des contextes architecturaux d'origines ou déposée dans des réserves de fortune, voire des abris aménagés à la hâte ou encore entreposée en plein air. L'état de conservation et surtout la dévolution de cette dernière diffèrent d'un site à un autre et d'un endroit à un autre. De même, les techniques et les matériaux utilisés, ainsi que les procédures conservatives usitées afin d'assurer, en principe, la pérennité d'un tel patrimoine et sa préservation de la destruction et de l'altération s'avèrent très variables[5].

---

3 Les recommandations internationales pour l'archive et la documentation de toute intervention sont totalement négligées. Le retour aux principes pour l'établissement d'archives documentaires des monuments, des ensembles architecturaux et des sites, Sofia 1996, montre bien quelles sont les responsabilités et les devoirs des différents intervenants décideurs, autorités et responsables administratifs (la direction de l'INP).

4 Aussi connaître les pavements détruits à jamais, nombre exact et lieux de provenances ; de surcroît, savoir les causes afin de prendre les mesures nécessaires pour protéger efficacement ce qui existe encore.

5 Ce constat prend en considération les sites inscrits sur la liste du patrimoine mondial, présentant un intérêt exceptionnel pour l'héritage commun de l'humanité, *karthago et Thugga*.

1- Les modalités conservatives : Approches, procédés et moyens techniques.

Notre démarche vise à examiner de plus près l'ensemble des moyens techniques utilisés pour la restauration/conservation des pavements/documents et à évaluer la nature des mesures entreprises et leurs limites, ainsi que leurs répercussions.

On rencontre presque partout des pavements amputés de leur contexte d'origine, souvent défigurés et fractionnés en plusieurs morceaux, de petites dimensions, et transférés sur des nouveaux supports composés généralement de béton renforcé d'armature métallique[6]. Certains avaient été replacés dans leur structure environnante, sans aucune précaution préalable (Figs. 1-2). En revanche, d'autres avaient été entreposés, voire abandonnés, en plein air. Parfois, empilés les uns sur les autres, sans aucune protection[7] (Fig. 3).

Figure 1
Karthago (Carthage), Parc archéologique des thermes d'Antonin, insula VIII, maison romaine (photo J.Hajji).

Figure 2
Pupput (Souk el-Abiod), maison du péristyle figuré (photo J.Hajji).

Figure 3
Pupput (Souk el-Abiod), site (photo J.Hajji).

S'il est vrai que le recours à de tels moyens et matériaux abusifs remonte à quelques années, voire quelques décennies, l'inexistence de protection, même provisoire et l'absence d'un suivi permanent ont fortement contribué à la destruction d'un grand nombre de mosaïques[8]. Sur certains sites, la situation

6 Parfois le béton est renforcé par un grillage simple.

7 Outre la défiguration de l'espace archéologique, ces destructions d'œuvres d'art constituent une perte à jamais de témoins d'histoire et de civilisation.

8 Manque d'information et inexistence d'inventaire, même à l'échelle régionale, empêchent de

est déplorable, même désolante. Des mosaïques morcelées en mille pièces et d'autres sont devenues illisibles (Figs. 4-5). Pire encore, certaines sont réduites en amas de tesselles jonchant le sol (Fig. 6).

Figure 4
Horrea Caelia (Hergla), maison romaine (photo J.Hajji).

Figure 5
Uzitta (Henchir el-Mekharreb), maison romaine (photo J.Hajji).

Figure 6
Thuburbo maius (Henchir el-Kasbat), maison de Neptune (photo J.Hajji).

On continue inopportunément à négliger les méfaits irréversibles d'une telle assise. Immobilisant le *tessellatum* dans une gangue très dure, cette dernière

déterminer avec exactitude le nombre des mosaïques détruites.

supporte mal les variations météorologiques[9]. Avec une faible résistance aux phénomènes de retrait et d'expansion les éléments structurels se déforment. Sous l'effet de la chaleur, l'armature métallique se délatte et provoque ainsi la dislocation du support et du tapis des tesselles (Figs. 7-8). De même, avec l'humidité les sels solubles, libérés par le ciment, se cristallisent dans la partie supérieure des tesselles et modifient la couleur des matériaux calcaires et poreux[10].

Figure 7
Thysdrus (Eljem), site Sidi Zid (photo J.Hajji).

Figure 8
Uzitta (Henchir el-Mekharreb), maison romaine (photo J.Hajji).

Les procédés mis en œuvre, depuis des décennies, pour la sauvegarde et la préservation des mosaïques maintenues *in situ*, posent souvent de multiples problèmes liés à plusieurs facteurs, climatiques, biologiques, techniques et humains, agissant séparément ou conjointement.

L'objectif de la conservation préventive est de créer des conditions favorables pour limiter le délabrement et éviter le recours à des traitements curatifs inutiles, afin de prolonger la durée de vie des pavements/documents, mais aussi préserver leurs valeurs archéologiques, artistiques et historiques. Il est toutefois surprenant

9 Ceci est remarquable surtout dans la région nord-ouest où les différences des températures extrêmes peuvent dépasser les quarante degrés.

10 Un tel phénomène est remarquable sur les sites qui se trouvent sur la côte tunisienne ; on peut songer aux sites de *Horrea Caelia, karthago, Neapolis, Pupput, Thaenae, et Uzitta*, entre autres.

Figure 9
Pupput (Souk el-Abiod), thermes romains (photo J.Hajji).

Figure 10
Utica (Utique), maison, insula II (photo J.Hajji).

Figure 11
Bulla regia (Hammam Darraji), maison du trifolium (photo J.Hajji).

d'apercevoir que sur presque la quasi-totalité des sites tunisiens, c'est le lifting qui prévaut, plus rapide à réaliser, moins compliqué et moins coûteux. Les procédés adéquats et la stratégie d'entretien et d'intervention programmés font défaut. On se limite à des opérations aléatoires dictées presque toujours par des urgences ; c'est l'improvisation qui perdure.

Sur la majorité des sites on se contente généralement d'un entretient épisodique, un rafistolage futile des pavements laissés en place. Fréquemment, ce ne sont que les problèmes de surface qui sont traités, tels que les fissures et les pertes d'adhérence ponctuelles entre le *tessellatum* ou les matériaux constitutifs et l'assise, ou encore le comblement des lacunes[11] (Fig. 9). Il est exceptionnel que l'ensemble des altérations touchant les constituants et les structures des pavements soit pris en considération. Souvent les déformations affectant la planéité des pavements, les affaissements et les fractures dues aux problèmes d'étanchéité, des remontées d'eau et de drainage périphérique, passent inaperçues (Figs. 10-11).

Les mosaïques sont souvent traitées indépendamment de leur structure environnante. Le caractère indissociable des pavements/documents et de leur contexte architectural/ archéologique n'est qu'occasionnellement pris en considération. On se contente, dans la plupart des cas, de quelques mesures aléatoires sans aucune réflexion sur la protection et la sauvegarde optimales des espaces qu'elles revêtaient[12]. Il est primordial de prendre en considération le fait que toute intervention devrait être pensée dans un cadre global, plus large, selon une vision d'ensemble qui préserve et met en valeur tout le cadre architectural/ culturel, et non quelques-uns de ses éléments ou de ses structures.

Des copies de mosaïques avaient été implantées à l'emplacement d'autres pavements authentiques[13]. Un tel recours demeure contestable. Certes, la

11 Sur certains sites, *Uthina*, *Thysdrus* et *Bulla Regia* entre autres, des pavements lacunaires étaient restaurés avec des tesselles récentes, souvent en couleur blanches ou noires, disposées en pèle mêle. Parfois, comme à *Pupput* et *Uthina* entre autres, on utilise un mortier composé de chaux artificielle et du gravier.

12 On se contente généralement de traiter, sporadiquement, les altérations de surface, stabilisation des bordures ou encore comblement des lacunes sans aucune attention aux espaces environnants ; consolidation des murs, évacuation des eaux de ruissellement avec la mise en place de systèmes de drainage appropriés, entre autres.

13 On peut songer à quelques mosaïques d'*Uthina*, de la villa dite des *Laberii* (la première, figurant Dionysos faisant don de la vigne à *Icarius*, la seconde, une chasse à courre et la troisième, une

question conservation/ présentation mériterait, néanmoins dans certains cas, d'être considérée et la sauvegarde matérielle du pavement/document doit être avantagée, mais une telle intervention doit être bien pensée. Les fac-similés, présentés, sont souvent sans indication ni information éclairante. Parfois on a l'impression d'être en présence d'éléments hybrides, pour ne pas dire étranges, qui altèrent l'authenticité du cadre archéologique dans lequel ils s'y inscrivent (Figs. 12-13).

Figure 12
Uthina (Oudna), Villa dite des *Laberii* (photo J.Hajji).

Figure 13
Karthago (Carthage), villa de la volière (photo J.Hajji).

L'infestation végétale pose des problèmes permanents, surtout dans les régions ayant une grande pluviométrie. Pour y remédier, on fait encore appel à une technique rudimentaire, le désherbage manuel, qui a conduit à une dévastation spectaculaire des mosaïques *in situ*. Certaines se sont transformées en un amas de tesselles (Fig. 14). Dans plusieurs cas, seul le négatif du *tessellatum* ou les calles de *l'opus sectile* existaient (Figs. 15-16). Cette opération est généralement confiée à des ouvriers non avertis, souvent des simples saisonniers mal équipés, disposant que d'outils inadéquats (sape, pelle et faucille, entre autres). Cependant certaines méthodes préventives et curatives, expérimentées ailleurs

exploitation rurale. Toutes les trois, les originales, sont exposées au Musée du Bardo). De *Thysdrus* (les seuils des *cubicula* des maisons dites des dauphins et du paon). Aussi, de *Karthago*, (plus précisément de la villa de la volière).

Figure 14
Althiburos (Medeïna), thermes de l'édifice des Asclepieia (photo J.Hajji).

depuis de nombreuses décennies, demeurent méconnues. On peut rappeler à juste titre l'utilisation d'herbicide à caractère hormonal qui a donné des résultats satisfaisants.

D'autres mosaïques, sont complètement envahies par des micro-organismes. Ces derniers ont causé des multiples dégradations ; altération de la texture superficielle des tesselles et ternissement des couleurs. Là encore, on dénote la rareté des interventions et l'inefficacité des procédés et des moyens utilisés, un simple nettoyage avec de l'eau dans le meilleur des cas. Pourtant on dispose d'autres moyens plus adéquats, au coût modique, déjà approuvés par des nombreuses recherches scientifiques, comme les traitements avec des produits à base d'ammonium quaternaire.

Figure 15
Althiburos (Medeïna), péristyle de l'édifice des Asclepieia (photo J.Hajji).

Figure 16
Karthago (Carthage), maison du cryptoportique (photo J.Hajji).

Le ré-enfouissement, qui constitue une sorte de protection temporaire de la mosaïque avant sa restauration, est souvent pris à la légère. La plupart des pavements ne sont enterrés, qu'à une faible profondeur, sous une couche de sable, parfois sous laquelle on étale une bâche en plastique, une moustiquaire ou encore des papiers journaux[14] (Fig. 17). Ces procédés inadéquats n'ont fait qu'accélérer l'altération, voire même la destruction totale de plusieurs pavements, surtout dans des régions ayant un climat très variable. Affaiblies par la rétention d'humidité, les variations thermiques, les efflorescences salines et les effets des cycles gel-dégel, les tesselles se sont dilatées et se sont décollées de leurs lits de poses. Les mortiers se sont désagrégés jusqu'à la désolidarisation

14 L'utilisation des matériaux synthétiques, en géotextile particulièrement, est peu fréquente.

de l'assise du revêtement de surface et la destruction des liens entre les éléments modulaires qui composaient ces derniers.

Figure 17
Thaenae (Henchir Thina), thermes des mois (photo J.Hajji).

Un autre détail touchant la protection intermittente pourrait être souligné, celui de la mise en œuvre d'abris, de toiture, pour protéger les pavements des agressions extérieures[15]. Sur l'échelle nationale, les cas où les intervenants ont opté pour l'utilisation de ces structures modernes se comptent sur les doigts d'une seule main. De surcroît, les résultats s'avèrent contestables ; des abris sommaires, réalisés avec des matériaux inappropriés, peu efficaces n'offrent pas le minimum des conditions requises pour assurer l'intégrité physique des pavements. De surcroît, elles nuisent non seulement aux valeurs culturelles et significatives des monuments, mais aussi à l'authenticité et l'homogénéité des cadres archéologiques dans lesquels elles s'y inscrivent[16] (Fig. 18).

Les moyens relatifs à la protection des pavements/documents de toute agression humaine demeurent problématiques. Exposés en plein air, ces derniers pourraient être altérés, par négligence, par manque de sensibilisation ou par vandalisme. Là encore, la multiplicité des situations incite à faire quelques remarques. Presque partout des pavements endommagés, certains d'une grande richesse iconographique et d'autres d'une grande valeur technique, piétinés sans cesse par les visiteurs. Plus insolite encore, il arrive de voir des pavements foulés par du bétail. De tels dommages pourraient être évités par la mise en place de certaines mesures de sécurité, très simples et non couteuses. Comme le recours à des barrières modulables, faites avec des tubes métalliques et des chaînes ou des câbles[17], et non pas des simples planchettes et des cordes comme c'est le cas sur un grand nombre de sites.

Figure 18
Utica (Utique), maison de la cascade (photo J.Hajji).

15 Le recours à une toiture pour préserver un bien patrimonial de tout type de danger est millénaire. C'est ce que révèle, entre autres, Pausanias dans sa *Description de la Grèce,* "la colonne d'*Oenomaos* ; elle est sous un toit soutenu par quatre colonnes : construction qu'on a faite pour conserver cette colonne qui est en bois, et qui est très endommagée par le temps". Paus.V, 20, 6.

16 Dans un sens plus large, l'esprit du lieu patrimonial. Sur cette notion, voir la déclaration du Québec sur la sauvegarde de l'esprit du lieu, Canada, 2008.

17 Le recours à ces moyens préventifs est rarissime. À *Karthago* et *Thysdrus*, entre autres, la négligence et le manque de maintenance quotidienne ont contribué fortement à endommager les quelques structures installées.

La procédure restauration/conservation est souvent réduite à quelques pratiques techniques, à quelques recettes applicables un peu partout. Elle n'est que rarement appréhendée selon les principes scientifiques en vigueur. Excepté quelques cas, on continue encore à négliger la consignation des opérations réalisées. Or, il est fondamental de créer pour chaque pavement/document une archive appropriée ; des dossiers à la fois analytiques et critiques comportant illustrations, dessins, relevés et une documentation sur le cadre architectural et le contexte archéologique d'origines. Aussi, des fiches techniques retraçant toutes les altérations, ainsi que toutes les opérations réalisées et les matériaux et produits utilisés. Auxquelles il faut adjoindre un rapport sur l'historique des opérations réalisées auparavant et un journal de suivi et de contrôle. Ceci permettrait d'éviter les trébuchements antérieurs et de rattraper ainsi le retard accumulé depuis plusieurs décennies, et qui ne cesse de s'aggraver au rythme des découvertes incessantes.

Il convient de remarquer qu'aucune mesure de protection, de préservation, ne peut être considérée comme efficace si elle ne s'accompagne pas d'un programme de suivi permanent de la situation de chaque pavement/document en vue de contrôler son état, discerner les sources de délabrements naissants qui affectent sa cohésion physique générale, ses éléments compositionnels, sa surface ou son support. Une telle démarche permet de prendre, à temps, les mesures nécessaires, types d'interventions, les moyens et produits à utiliser.

2- Réserves : Modalités de stockage.

Déposer un pavement/document signifie généralement le soustraire à un danger et assurer sa sauvegarde pour longtemps. Le préserver, de tous types de dégradations auxquels son abandon l'exposerait, dans un dépôt adéquat, dans une réserve, jusqu'à ce que sa restauration soit envisagée. Ces principes théoriques, qui fixent à la fois les finalités et la nature des interventions, semblent être méconnus.

Figure 19
Horrea Caelia (Hergla), dépôt du site (photo J.Hajji).

L'inconséquence de certains intervenants, surtout en l'absence d'une réflexion globale fondée sur une conscience culturelle et sur des principes directeurs[18], a fortement contribué à l'altération et la destruction d'un grand nombre de pavements (Fig. 19). En fait, on ne s'intéressait qu'à l'étude du document spectaculaire sans se soucier ni de son sort ni de son advenir. L'état de certains, au moment de leur découverte comparé à celui d'aujourd'hui, se passe de tout commentaire. À vrai dire, seul un inventaire actualisé du patrimoine mosaïstique pourrait nous révéler le nombre des pavements détruits à jamais et l'étendue des dégâts[19].

La question du stockage provisoire ou permanent, conformément aux normes professionnelles admises, ne semble pas figurer dans les projets et les stratégies de l'INP ; aucune volonté pour créer de vrais environnements protecteurs dans tout le pays[20]. Sur la majorité des sites, des pavements, reposés sur du béton armé, sont abandonnés, depuis des décennies, en plein air (Fig. 20). Les uns sont

Figure 20
Thuburbo maius (Henchir el-Kasbat), site (photo J.Hajji).

18 Pour ne pas dire une éthique de la conservation, largement développée dans les normatifs internationaux.

19 Cette obligation, avoir un inventaire détaillé de tout le patrimoine mosaïstique n'a jamais figuré dans les projets de l'INP. On oublie tout simplement que "l'inventaire doit être une obligation fondamentale dans la protection et la gestion du patrimoine archéologique", Article N°4 de la Charte internationale pour la gestion du patrimoine archéologique, Lausanne, 1990.

20 C'est le trébuchement continuel. Absence de stratégie nationale et incapacité de se détacher de certaines pratiques déficitaires, de l'empirisme de certaines mentalités et une totale ignorance des paramètres scientifiques et techniques approuvés ailleurs.

utilisés comme élément de décor pour rehausser, vainement, les murs d'enceintes de certains sites (Fig. 21), d'autres, fractionnés en plusieurs morceaux puis rangés dans un coin d'un monument non couvert, encourent tous les risques (Fig. 22). Mieux encore, certains sont posés anarchiquement contre les murs de certains bâtiments, parfois des endroits très fréquentés, faisant naître un vrai danger sur la sécurité des ouvriers et des visiteurs.

Figure 21
Pupput (Souk el-Abiod), clôture du site (photo J.Hajji).

Figure 22
Thysdrus (Eljem), site Sidi Zid (photo J.Hajji).

D'autres pavements sont stockés dans des entrepôts. Là encore, la nature des lieux, les conditions et les moyens utilisés s'avèrent variables. S'il est vrai qu'un local clos permet de protéger les pavements/documents de certaines dégradations liées surtout aux variations climatiques, l'inexistence des mesures adéquates de conditionnement et de préservation rend délicate toute manipulation visant à effectuer des vérifications d'ordre scientifique, ou même de déceler, à temps, les premiers symptômes de délabrement pour éviter l'extension des dommages et mettre en œuvre les actions appropriées de sauvegarde.

Presque partout des pavements, qui, entassés pêle-mêle avec de multiples

trouvailles archéologiques, des outils de manutentions, des caisses, des objets métalliques et des engins, sont devenus inaccessibles (Fig. 23). Certains, sont dans un état très critique : délabrement avancé, décollement des tesselles et perte de certains éléments constitutifs de la surface. Parfois, des *tessellata*, désolidarisés de leur support d'origine et collés sur toile, sont abandonnés, à même le sol, sans la moindre précaution (Fig. 24).

Figure 23
Utica (Utique), dépôt du site
(photo J.Hajji).

Figure 24
Althiburos (Medeïna), dépôt du site
(photo J.Hajji).

Sur quelques sites, certaines composantes d'anciens édifices, des citernes dans la plupart du temps, ont été réutilisés, depuis des décennies, pour stocker des pavements[21]. Un tel choix, qui pourrait être justifié par l'inexistence d'autres alternatives, semble hasardeux, et parfois très risqué. Ces structures, souvent en mauvais état de conservation, n'offrent pas le minimum de conditions requises pour la préservation des pavements (Fig. 25). Ces derniers, jonchant le sol, empilés ou encore posés contre le mur, sont confrontés à des nombreuses altérations causées en particulier par l'humidité, le manque d'aération et par les infiltrations d'eau, dues aux multiples crevasses et fissures dans les toitures.

On remarque aussi le recours à des abris de fortune réalisés avec des planchettes, des tubes d'échafaudages, des panneaux en contreplaqué, des plaques en tôle et des bâches en plastique (Fig. 26). Certains sont dans un état très délabré et d'autres risquent de s'écrouler à tout moment. À vrai dire, un tel bricolage résume à lui seul tous les paradoxes et toutes les déficiences. Les principes, fixés par des textes universels, selon lesquels le patrimoine archéologique devrait être préservé sont complètement violés.

Il convient d'y ajouter que presque partout on ne stocke que des revêtements de surface, entiers ou fragmentaires. Il n'y a aucunement de préservation matérielle de certains éléments constitutifs des pavements/documents, comme les fragments de l'assise originelle, le négatif des tesselles et les tessons de calage de l'*opus sectile*, entre autres. Des éléments qui pourraient être soumis à des études et des analyses, synthétiques ou comparatives, permettrons non seulement une meilleure compréhension des pratiques anciennes des artisans mosaïstes au cours des diverses périodes antiques de la Tunisie, mais aussi une meilleure connaissance des matériaux utilisés, natures, compositions et origines de provenance[22].

21 Une telle solution était au début pour quelque temps. Mais c'est le provisoire qui dure !

22 Savoir d'où proviennent les matériaux, calcaire et marbre, entre autres, utilisés dans la réalisation

Figure 25
Karthago (Carthage), citerne (photo J.Hajji).

Figure 26
Thysdrus (Eljem), dépôt du site (photo J.Hajji).

On dénote aussi que les tesselles libres issues des zones disloquées des pavements sont abandonnées sur place, parfois elles sont considérées comme des déchets ; une perte irréversible causée par l'ignorance et le manque d'appréciation réfléchie. On n'a jamais pensé à constituer des stocks raisonnés de ces matériaux/témoignages. On n'a jamais songé non plus à les classer par pavement ou par nature, calibre et couleur quand ils ne sont attribués à aucun cadre précis, pour les utiliser dans d'éventuelles interventions et restaurations.

II- Musées :

Les problèmes que pose un pavement/document exposé dans un Musée ou entreposé dans l'une de ses réserves sont généralement multiples. Toute intervention, touchant la structure ou la surface, qu'elle soit nécessitée par un état de conservation précaire, ou par la volonté d'une meilleure présentation, temporaire ou permanente, au grand public, doit en théorie assurer à la fois la

des pavements. Les lieux d'extraction, des carrières locales, régionales ou encore ramenés d'autres endroits.

survie du document/témoin et la préservation de son intégrité, son identité, son authenticité et sa valeur mémorielle. L'écart entre ces principes fondamentaux qui conditionnent l'opération restauration/conservation et les pratiques, les techniques ou encore les méthodes utilisées, s'avère parfois inquiétant[23]. Un patrimoine culturel souvent abordé avec une seule et unique préoccupation, redonner un petit coup de jeunesse au vieil existant. Il faut que ce soit beau à voir, un tape-à-l'œil qui donne un sentiment d'efficacité, voire de réussite.

1- Les modalités conservatives : Approches, procédés et moyens techniques.

La restauration du patrimoine mosaïstique est restée, jusqu'à aujourd'hui, tributaire des méthodes dépassées et des techniques inappropriées. À cela s'ajoute l'inconséquence des intervenants décideurs et l'empirisme d'une mentalité qui limite souvent la procédure restauration/conservation à des simples opérations de remaniement et de comblement de lacunes, un simple rajeunissement, voire un banal lifting[24]. L'exploitation scientifique des données archéologiques, historiques et techniques de ce matériel, ne figure pas encore dans les projets de sauvegarde et de mise en valeur.

Le pavement à restaurer est généralement considéré comme un simple objet isolé, venu de nulle part. Une telle approche réductrice ne permet ni de connaître les caractéristiques techniques et formelles relevant du processus de la création et de l'histoire de l'objet/ document, ni les constituants de son environnement archéologique. Aucun rapprochement avec les pavements qui appartenaient aux mêmes contextes archéologique et architectural, *in situ*, entreposés ou exposés. Aucune mise en parallèle ou en comparaison pour recueillir toutes les informations relatives aux techniques de taille, d'implantation de tesselles, modes d'exécution et nature des matériaux utilisés, entre autres.

Les principes fondamentaux pour l'établissement d'archives documentaires, fixés par des textes universels, sont traités avec une grande indifférence. On se contente dans les rares cas de quelques relevés, photos et fiches techniques souvent incomplètes et mal conçues, classées dans des dossiers éparpillés. Or, toute intervention doit être accompagnée d'un programme défini de documentation, selon les normes professionnelles actuelles, sous la forme d'un rapport analytique et critique, comportant des dossiers signalétiques et bibliographiques. Toutes les étapes de la procédure restauration/conservation, diagnostic complet des altérations, les techniques, les matériaux et les outils utilisés doivent être consignés. De surcroît, un dossier sur l'historique des opérations réalisées auparavant et un journal de suivi, de contrôle et d'entretien régulier. L'ensemble de cette documentation doit être conservé dans les archives, du Musée ou de l'INP, et doit être accessible et mis à la disposition des professionnels, des chercheurs concernés ou encore du public intéressé.

La séquence des opérations et des interventions techniques subies par les pavements/documents attire, à plusieurs égards, l'attention. Les multiples

---

23 Le retour aux textes et principes définis par des chartes et des déclarations référentielles montre une réelle déficience. Certaines notions comme préventive, curative, réversible et déontologique semblent méconnues !

24 On peut songer ici aux derniers travaux de restauration des mosaïques réalisées lors des deux grands projets de réaménagements des Musées de Sousse et du Bardo, avec l'aide de la Banque internationale pour la reconstruction et le développement (BIRD) ; mêmes matériaux, plâtre et fillasse comme supports des mosaïques. Mêmes modalités pour le comblement des lacunes. Mêmes modalités d'accrochage aux murs. Ce sont les mêmes méthodes utilisées depuis les années soixante du siècle dernier.

aspects, voire facettes, de cette activité, encore basée sur l'improvisation et le bricolage, pourraient être relatés comme suit[25].

A - Transfer du pavement sur un nouveau support :

Cette étape est capitale dans le déroulement de l'opération conservative. Remplacer un ancien support, antique ou moderne, par un autre plus adéquat, c'est respecter tout un ensemble d'impératifs nécessaires qui garantissent l'authenticité et l'intégrité du pavement/document[26]. Actuellement, les techniques, les procédés mécaniques, les matériaux, les outils et les équipements, employés paraissent contestables.

Les approches adoptées ne prennent que rarement en considération la fragilité des éléments constitutifs du pavement/document. L'entoilage de la surface, le découpage, en plusieurs plaques de dimensions variables[27], l'enlèvement de l'ancien support et le nettoyage du revers sont réalisés, dans la plupart du temps, sans un matériel adéquat et sans précaution préalable. Toute l'opération, basée sur l'improvisation, est réduite à une simple application de recettes inappropriées, devenues aujourd'hui incontournables, et un recours à des techniques désuètes qui ont montré leur inefficacité et leur défaut depuis longtemps.

On néglige tout simplement que chaque pavement est singulier : ce sont la nature des tesselles, la cohésion de la surface et les variations des altérations qui devraient déterminer et dicter toute intervention ; comment procéder, avec quels moyens, dans combien de temps, dans quelles conditions et pour quels buts. Bien plus, on continue à ignorer que la restauration/conservation est avant tout une méthode, une conception dont le principe fondamental est la préservation significative de l'œuvre, en tant que témoin de l'histoire, sans affecter ni sa structure de base ni la nature de ces matériaux originels[28].

Le transfert du pavement sur un nouveau support est resté inchangé depuis des décennies[29]. On se contente de couler un mortier de plâtre, renforcé avec de la filasse et une grille métallique directement sur le revers de tessellatum, sans aucune isolation ni protection[30]. Cette formule a montré ces défaillances depuis longtemps. Elle ne permet qu'une adhérence relative et temporaire entre l'œuvre et son socle. Plus, elle supporte mal les variations de température et se détériore avec l'humidité ; oxydation des éléments métalliques et remontée des sels à la surface. Malgré le nettoyage abusif, brossage et rinçage répétés, les traces

25 Sans aucune exagération, nous sommes en face d'une vraie situation de trébuchement et de tâtonnement!

26 Certaines anciennes reposes avaient des conséquences désastreuses. Des mosaïques ont été complètement défigurées : on peut songer, entre autres, à un tableau du musée de Sfax représentant Héraclès ivre soutenu par le dieu Pan et un Satyre. Il suffit juste de comparer les photos de l'époque de découverte avec l'état actuel pour s'en rendre compte des dégâts irréversibles.

27 Ceci se fait généralement, dans des conditions pénibles, avec des outils rudimentaires, meules à disques, burins et marteaux. Or des équipements plus adéquats et respectant les normes sécuritaires existent sur le marché, avec des prix abordables, telles les débiteuses, entre autres.

28 Parfois la structure hétéroclite, pour ne pas dire hybride, de certaines œuvres passe inaperçu ; des erreurs commissent, depuis des décennies, lors de restitution ou recomposition de certaines œuvres demeurent inchangées. Un exemple du musée de Sousse offre le témoignage ; un fragment de pavement figurant un groupe sculptural représentant Léda et le Cygne a été erronément insérée dans ce qui restait d'un encadrement appartenant à une autre mosaïque. De telle pratique porte atteinte à l'authenticité de l'œuvre et fausse toute lecture synthétique du sujet représenté.

29 Excepté quelques rares cas, lors de certains projets de partenariat, où des pavements, dont ceux d'*Amaedara* et de *Karthago*, avaient été restaurés à l'étranger, suivant les normes et les principes en cours.

30 Les restaurations récentes des mosaïques exposées aux musées du Bardo, Sousse et Haïdra, entre autres, offrent le témoignage. Aucune séparation entre la surface mosaïquée et le nouveau support ; en principe un mortier synthétique mélangé avec du sable servait d'interface entre le *tessellatum* et le nouveau support.

débordantes du mortier de plâtre demeurent visibles entre les joints et un peu partout sur la surface. Par contre, le recours à d'autres procédés plus élaborés, utilisés un peu partout dans le monde depuis des décennies, et des matériaux non coûteux permettent de réaliser de meilleurs résultats[31].

La surface de nombreux pavements présente, dans plusieurs cas, des irrégularités, parfois très prononcées ; des zones déformées, affaissées ou encore soulevées. Aucune attention pour retrouver la planéité d'origine, tout en sachant que le redressement de telles déformations ne requiert ni moyens ni matériaux spécifiques. À cela pourrait s'ajouter parfois la maladresse dans l'assemblage des plaques lors de la recomposition finale de certains pavements ; ceci engendre une modification de la configuration d'origine et fausse la lecture de certains détails iconographiques[32].

Une autre défaillance frappante, cette fois-ci d'ordre scientifique, attire l'attention. L'approche avec le pavement se limite toujours aux simples interventions matérielles. Aucune exploitation scientifique des données que pourrait révéler le revers du *tessellatum*. On néglige le fait que ce dernier apporte des informations techniques, voire technologiques, très utiles sur la réalisation du pavement/document. Telles, le système de pose, les tracés préparatoires[33], les restes d'enduits teintés et les réfections antiques exécutées avec des matériaux de nature et de taille différentes.

La procédure de la repose est restée minimaliste. Elle n'est conçue que pour redonner une peau neuve à un pavement soufrant. On se limite à un banal rafistolage sans se préoccuper de ce qui reste de la partie invisible de l'objet/document. Aucune préservation matérielle de certains de ces éléments constitutifs. Tout simplement l'exécution de ce genre de prélèvement/indice permet d'approfondir nos connaissances sur une activité artistique qui demeure complexe et compliquée. De même, le recours à des analyses spécifiques permet d'identifier la nature et la composition des matériaux utilisés dans la réalisation de chaque pavement ainsi que de les comparer avec d'autres provenant du même site ou d'ailleurs ; étude typologique, technique et historique.

B - Traitement de surface : Lacunes et altérations.

En principe, cette opération a pour double but la stabilisation des lacunes et la préservation de la lisibilité du pavement/document. Entre recommandations et pratiques actuelles, l'écart paraît démesuré. Contrairement à toutes les exigences scientifiques, établies depuis longtemps, qui imposaient le respect de l'authenticité de ce matériel archéologique, on continue aujourd'hui à combler systématiquement tous les vides (Fig. 27), aussi bien dans les figures, que dans le fond, avec un mortier à base de plâtre, qui dépasse souvent le niveau du *tessellatum*. L'intervention revêt ainsi l'aspect d'un simple habillage minimaliste.

Sur certains pavements, restaurés récemment, les anciens traitements de lacunes, en mortier de chaux et parfois en ciment, demeurent visibles (Fig. 28). À cela on peut ajouter l'utilisation, d'une manière flagrante, de tesselles récentes taillées

31 Les excédents de plâtre, visibles sur les surfaces mosaïquées, sont souvent nettoyés avec des bistouris ; une perte du temps qui pourrait être évitée avec l'utilisation des matériaux pas chers et des moyens simples. On peut songer à certaines colles mélangées avec du sable ou encore à l'utilisation de la chaux en poudre pour combler les interstices et les joints avant l'écoulement du nouveau mortier.

32 On peut mentionner, à titre indicatif, certains pavements de Sidi Ghrib, actuellement entreposés au Musée de Carthage.

33 Il n'est pas rare de distinguer lors de ré-restauration, que le revers de *tessellatum* porte des traces de couleur, souvent à l'ocre rouge, du dessin préparatoire antique.

Figure 27
Haïdra, musée, détail de la mosaïque dite d'Ulysse (photo J.Hajji).

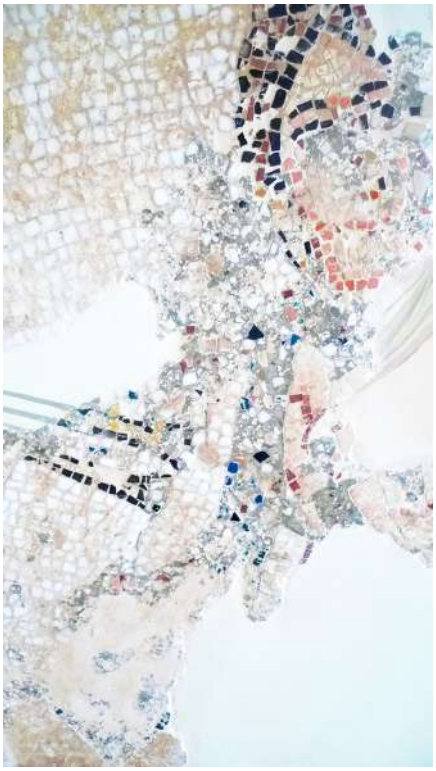


Figure 28
Sousse, musée, détail d'une mosaïque figurant un spectacle dansant (photo J.Hajji).

Figure 29
Sousse, musée, mosaïque figurant tête d'Océan au milieu d'un paysage marin (photo J. Hajji).

en atelier pour combler les saignées pratiquées lors de la dépose ou encore pour remplacer des éléments perdus, des vides causés lors des manœuvres irréfléchies[34]. Dans certains cas, les ajouts présentent un aspect différent de la matière originelle, uniformément vieillie ; des matériaux usuels avec des couleurs, voire des brillances, marquantes qui diffèrent de celles du *tessellatum*[35].

Toutes ces pratiques dérisoires, outre leurs conséquences néfastes sur la cohésion générale du *tessellatum*, posent des problèmes d'ordre déontologique. Entremêlant indifféremment les parties authentiques et les interventions récentes, elles transforment la mosaïque, témoin de l'histoire, en une œuvre hybride ; dans de nombreux cas, certaines parties originelles paraissent dénaturées.

34 Une couche de plâtre sert parfois à remplacer des éléments perdus lors des manœuvres récentes irréfléchies. Voir, à titre d'exemple, la mosaïque représentant des haras de *Sorothus* au musée de Sousse, surtout la partie inférieure du massif rocheux, la partie centrale de la rivière et la majeure partie de la *villa*.

35 On peut retenir ici, parmi des nombreux exemples, celui du musée du Bardo (A01) : une mosaïque de Sousse représentant le triomphe de Neptune, inséré dans une grande composition de médaillons figurant des Néréides chevauchant des monstres marins, des Ichtyocentaures et des Sirènes (Yacoub 1996: fig.84.).

On dénote aussi, le recours à une autre technique illusoire, à savoir la restitution des décors figurés avec de la peinture (Fig. 29). En l'absence d'indications précises sur les motifs d'origine, et surtout la multiplicité des formules iconographiques et la diversité des motifs et des éléments schématiques utilisés par les artistes de l'époque antique, toutes les restitutions demeurent arbitraires, voire futiles. On n'est plus certain de rien !

Sous prétexte de favoriser la lisibilité de la mosaïque, on oublie tout simplement que la mise en parallèle, ainsi que les rapprochements par analogie sont souvent trompeurs[36]. Sur certaines scènes, des motifs de remplissage, et parfois des personnages, réels et légendaires, réapparaissaient comme par magie ! Une pure fantaisie. De telles pratiques malhabiles rendent incompréhensible la mise en place de certains éléments graphiques et faussent la lecture générale de certaines scènes. Plus encore, ces restitutions hypothétiques, ébranlent l'authenticité archéologique de l'œuvre/témoin et altèrent ses dimensions documentaires, iconographiques et historiques et effacent toutes les empreintes de son vécu, de son histoire.

D'autres techniques de traitement des surfaces mosaïquées pourraient être évoquées. Habituellement, le problème de ternissement des couleurs est résolu par un ponçage abusif des tesselles. On a cru bon de rendre aux mosaïques leur aspect et leur éclat d'origine, mais en réalité on n'a fait qu'accentuer leur fragilité et accélérer leur dégradation d'une manière irréversible. Réduites en épaisseurs et en étendues, les tesselles ont perdu l'irrégularité de leurs modules et la variabilité de leurs sections. Plus grave encore, certaines mosaïques ont perdu leurs reliefs, leurs factures, ainsi que toutes les marques qui l'ont imprégnées durant les siècles, de leurs réalisations jusqu'au leurs découvertes.

La nature des éléments constitutifs du pavement n'est que rarement prise en compte. Ces derniers, indépendamment de leur composition minérale et cristalline, présentent parfois une ossature altérée ; des éléments rongés, brisés, délités, érodés, fendus et dans quelques cas réduits à des pellicules. Les altérations sont aggravées par l'utilisation des produits chimiques utilisés dans un seul but, faire briller les couleurs[37]. Des brillances apparentes se distinguant nettement des patines antiques.

Autre fait marquant, on refuse toujours de faire appel à des techniques, des technologies, et des matériaux non couteux et de changer des pratiques risibles par d'autres plus élaborées, utilisés depuis longtemps dans le reste du monde. Ceci nous paraît intriguant ! Ne serait-il pas dû à l'empirisme de certaines mentalités qui continuaient à négliger les exigences et les recommandations déterminées par les nombreuses chartes internationales ? Ou encore à la persistance d'une politique de restauration/conservation qui ne voyait en la mosaïque/document que ses aspects décoratifs et esthétiques, un bel objet à voir, un tape-à-l'œil, à présenter au grand public, sans se préoccuper des autres aspects pédagogiques, didactiques, historiques et scientifiques !

2- Exposition :

Les critères de présentation ou d'exposition des pavements/documents n'ont pas

---

36 On peut mentionner ici, entre autres, une mosaïque de *Thugga* figurant le mythe de Diane et Actéon, conservée au musée du Bardo. Les rajouts en peinture, plus précisément la restitution hypothétique de toute la partie centrale de la mosaïque, ont poussé certains chercheurs à l'erreur (Voir, Hajji 2009: 67-75).

37 Or de nombreux produits, composés d'ingrédients naturels, pourraient offrir de meilleurs résultats et garantir une meilleure préservation des tesselles.

évolué depuis des décennies. Généralement, on ne retient de ces derniers que leurs aspects décoratifs et spectaculaires, mais jamais leurs réalités fonctionnelles et techniques. Des beaux tableaux, accrochés aux murs des Musées, attirant la foule, c'est l'unique objectif à atteindre[38]. On continue à ignorer les principes qui véhiculent et conditionnent toute exposition et toute mise en valeur culturelle. Que présentons-nous ? Des objets tape-à-l'œil, des témoins de l'histoire, documents scientifiques, ou cautions du marché culturel-spectacle ? Dans quels buts et pour quels publics ?

Les concepts et les modalités de présentation ont beaucoup évalué au cours de ces dernières années dans le reste du monde. L'unité du style et l'uniformisation d'exposition sont complètement dépassées. Les empreintes du vécu de pavement/document et les traces de son histoire sont aujourd'hui préservées et exploitées. En revanche, dans les Musées tunisiens, les négatifs des tesselles imprimés dans le bain de pose sont toujours cachés sous une couche de plâtre. Ils ne sont jamais présentés avec les parties des pavements conservées. On ignore que ces détails, outre leurs valeurs esthétiques, archéologiques et historiques, peuvent être utilisés à des fins didactiques, voire même pédagogiques. Il s'agit de montrer aux spectateurs les parties invisibles d'un décor dont on ne voit souvent que la partie supérieure, la surface ; mettre en valeur les pratiques techniques et le savoir-faire des artisans mosaïstes durant les diverses périodes historiques de la Tunisie[39].

Certaines modalités d'exposition, horizontale d'œuvre, demeurent contestables. On voit, presque partout, des pavements, scellés au ciment, ornant le sol des musées ; quelques-uns sont rivés à des emplacements inadéquats[40] et d'autres, immobilisés dans une gangue trop épaisse, sont convertis en simples documents meubles. Plus encore, quelques mosaïques[41] ornent des espaces de transition, qui ne possèdent pas, à *priori*, une fonction expographique.

Quant aux pavements posés en applique contre les murs, les situations semblent variables d'un endroit à un autre. La technique, inchangée depuis les débuts du siècle dernier, consiste à dresser un socle vertical, composé de planches fixées au mur avec des structures métalliques, aux formes diverses. Une technique, dont l'innocuité est trop contestée, est souvent réalisée avec des moyens dérisoires et surtout dans des conditions pénibles.

L'élévation et le poids des charges rendent délicat l'ajustage des diverses parties du pavement, surtout celles à grande superficie, des défauts d'orthogonalité et

38 L'exposition n'est plus une simple mise de collection sous le regard du visiteur, exposer juste pour voir. Elle est devenue aujourd'hui le moyen le plus performant de communication, en terme sémiotique ; créer un système de langage basé à la fois sur la perception visuelle mais aussi sur l'interprétation réflexive. Voir et savoir constituaient ainsi la pierre angulaire autour de la laquelle devrait tourner toute la morphologie de l'exposition.

39 On dénote que tous les *emblemata* exposés dans les musées tunisiens sont collés contre murs et cloîtrés dans des encadrements généralement de plâtre ou de bois. Le visiteur ne voit jamais les caissons, habituellement en pierre ou en terre cuite. Un tel support amovible passe inaperçu ! Des pratiques artisanales et des données techniques, le rendu des diverses parties du support, la nature des matériaux ainsi que les modules et les formats, demeurent inexploitables scientifiquement, didactiquement et pédagogiquement. Comme exemples, on peut retenir ceux du Musée de Bardo ; d'*Uthina* (A150 à A152) et de *Thysdrus* (Inv.163).

40 Dans certains cas, les pavements sont défigurés. Celui des thermes de Sidi Ghrib, actuellement exposé au Musée de Carthage, offrirait le témoignage. Scellée dans une maçonnerie surélevée par rapport au niveau du sol, la mosaïque a été amputée de certaines de ses composantes structurelles et iconographiques ; plus précisément plusieurs parties des registres inférieurs sont sacrifiés, ils gisent par terre dans le jardin du musée.

41 Certaines sont dans un état de dégradation très avancé, affaissement, éclatement, soulèvement de tesselles, effritement du mortier des joints et des fissures, entre autres.

de symétrie pourraient survenir à tout moment. De surcroît, la charge pesante du socle rend définitive toute implantation et accrochage, aucun déplacement ne serait possible. On n'a jamais pensé à utiliser d'autres méthodes plus fiables, expérimentées depuis des années dans des nombreux pays ; comme le recours à des structures légères, faciles à manipuler, qui permettent de meilleures manutention et manipulation des pavements. Ils pourraient ainsi être déplacés aisément d'un lieu d'exposition à un autre, dans des Musées souvent confrontés à des problèmes d'espace[42].

Il serait intéressant de signaler d'autres pratiques, plus ou moins, insolites. Des panneaux d'un seul pavement sont dissociés et exposés séparément[43], parfois en discontinu, interrompus par d'autres œuvres, sur plusieurs murs d'un même Musée[44]. Plus étonnant, quelques-uns sont présentés à l'envers. Avec une telle transgression, le pavement/document est non seulement défiguré, mais désarticulé en pièces hybrides, incompréhensibles et insignifiantes. Le visiteur est privé d'une vision d'ensemble. La perception du document/ témoin est complètement faussée.

Des pavements/tableaux sont accrochés sur des anciens carreaux de céramique multicolore, transformés diligemment en simple arrière-plan insignifiant (Fig. 30). Ces derniers, dont la consistance physique est compromise, sont vidés de toute leur valeur artistique, archéologique, historique et devenus des simples accessoires. On dirait qu'ils ne constituent pas un témoin de l'histoire qui mérite d'être exposé et traité avec toutes les précautions nécessaires qui garantissaient leur authenticité, leur intégrité et leur polarité artistique et culturelle. De surcroît, du point de vue esthétique et visuelle, la surcharge, la condensation, des couleurs et des motifs dans un espace très réduit ne fait que dévaloriser les pavements/ tableaux. Toutes leurs particularités graphiques et chromatiques sont occultées.

Outre les salles d'exposition, certains emplacements, cours extérieures, portiques et façades sont utilisés parfois, sans que l'on ait pris les mesures de protection et de prévention nécessaires, comme supports pour présenter des pavements figurant de multiples sujets. Fractionnés en plusieurs panneaux, morceaux, et exposés, sans aucune précaution, aux variations climatiques et atmosphériques, certains sont dans un état critique. Des structures et des surfaces affectées par

---

42 Le recours à ces techniques permettrait de mettre en place une exposition dynamique des œuvres ; faire sortir des réserves certaines mosaïques conservées et les exposées suivant un programme prédéfini. Ceci permettrait de renouveler l'intérêt du public et redonner vie à des œuvres souvent oubliées.

43 La dualité contenant et contenu pose toujours problème ! La mise en forme de l'espace architecturale ne prend que rarement les spécificités volumétriques des pavements à exposer ; souvent c'est l'œuvre qui doit s'adapter, par force, à l'espace de l'exposition et non pas le contraire, quitte à amputer des nombreuses mosaïques de certaines de leurs composantes originelles. La conception des diverses parties de l'espace, qui devraient en principe servir comme écrins, sur mesure, à des œuvres ayant des dimensions et des formes variées, demeure méconnue.

44 De telles pratiques sont remarquables presque dans tous les musées tunisiens. Parmi les nombreux exemples, on peut mentionner quelques-uns ;

- Musée du Bardo : La mosaïque à scènes marines de *Karthago* (Inv.2772). Le tapis central du *triclinium* de la maison à colonnes rouges *d'Acholla* (Inv. 3609). Pavement d'un *triclinium* de *Thysdrus* (A268 à A284). Pavement d'*Utica* (Inv. 2763 à 2767). La mosaïque du triomphe de Neptune de *Maxula* (Inv. 2787). Scènes de pêche de *Thysdrus* (A 290).

- Musée de Sousse : deux fragments d'un pavement de l'église de Zaouiet Sousse exposés de part et d'autre de la mosaïque dite de Theodoulos. Aussi, la grande mosaïque du *frigidarium* des thermes de Chott Meriem figurant un paysage marin dominé au centre par l'imposante tête du dieu Océan.

- Musée d'Eljem : le pavement de la maison du dauphin (Slim et al. 1996: pl. XLVII). Une mosaïque provenant de la cour de la ferme de Ferjani Kacem figurant des scènes de combat d'animaux sauvages (Yacoub 1995: fig. 144). La plupart des tapis figurés ornant les deux maisons de Silène et de la procession dionysiaque.

- Musée de Nabeul : la mosaïque marine des thermes de Sidi Mahersi.

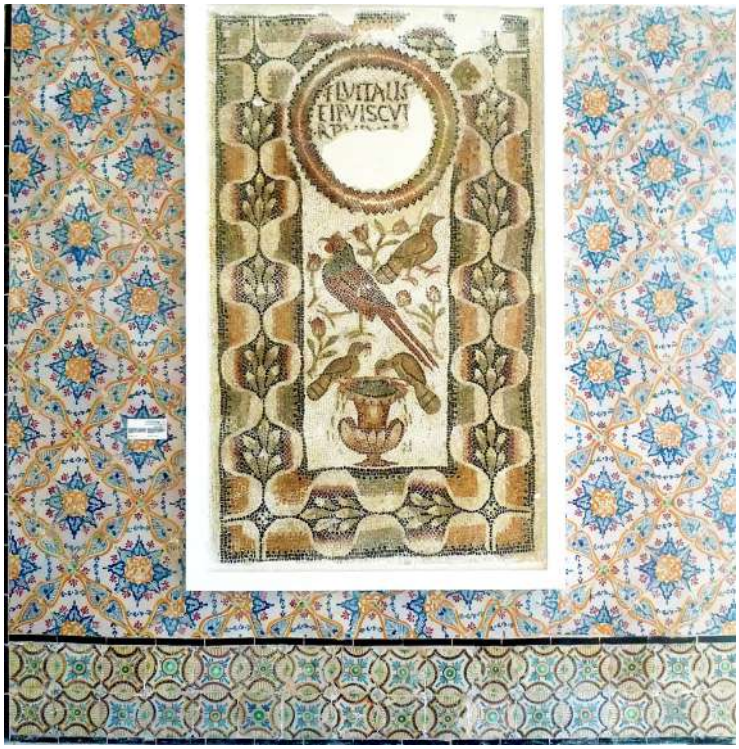


Figure 30
Bardo, musée (photo J.Hajji).

des multiples altérations, dues principalement à l'oxydation des structures métalliques et à la cristallisation des sels.

Les principes et les règles muséographiques, voire scénographiques, qui conditionnent généralement toute exposition artistique, culturelle, sont parfois négligés. Il suffit de voir comment sont assemblées les diverses parties des pavements pour s'en rendre compte. Aucune cohésion entre les plaques, des espaces vides défigurant les œuvres, des compositions désarticulées en pièces décalées et des éléments métalliques, pattes à scellement et clous, utilisés pour l'accrochage des panneaux, sont visibles à la surface (Fig. 31). À cela s'ajoute l'absence, dans la plupart des cas, d'un cadrage pour cacher les jeux entre les pavements et les socles, les éléments de scellement, ainsi que les irrégularités des bords de panneaux.

On dénote aussi l'inexistence d'un entretien régulier des pavements exposés. Sont nombreux ceux qui présentent des altérations de surface. Des lacunes laissant apparaître certaines parties du support, fibres de filasse et toile généralement (Fig. 32). Des sels se cristallisant dans la partie supérieure des tesselles, des concrétions (Fig. 33), décollement du mortier utilisé pour combler les lacunes, des peintures qui s'écaillent (Fig. 34), des éléments constitutifs du support qui se détachent. Pire encore, dans certains cas, des parties des pavements désolidarisées menacent de tomber[45] (Fig. 35).

3- Notices :

Les Musées doivent, théoriquement, veiller à ce que les informations qu'ils présentent dans leurs expositions, temporaires ou permanentes, soient fondées et exactes, conformément aux normes professionnelles admises. Mais qu'en est-il vraiment des pratiques adoptées dans les Musées tunisiens, le Bardo en particulier[46] ?

45 On peut retenir, parmi d'autres, la grande mosaïque dite de la rotonde de *Thaenae*, exposée au musée de Sfax.

46 Une telle focalisation d'attention est justifiée. Outre la place qu'il occupe sur l'échelle nationale, le Bardo possède la plus grande et la plus belle collection mosaïstique de toute la Tunisie.

Figure 31
Carthage, cour centrale du musée (photo J.Hajji).

Figure 32
Sfax, musée, détail de la mosaïque dite d'Aiôn (photo J.Hajji).

Figure 33
Sfax, musée (photo J.Hajji).

Figure 34
Bardo, musée (photo J.Hajji).

Figure 35
Sfax, musée, détail de la mosaïque dite d'Aiôn (photo J.Hajji).

La conception générale de la notice signalétique, un des éléments les plus signifiants de l'exposition, contenu et forme, est très discutable. On dénote l'absence d'une actualisation et d'une homogénéisation des informations qui accompagnaient les pavements. Les textes qui doivent fournir l'information, rendre les thèmes représentés accessibles ou orienter le visiteur, ne sont pas rédigés selon un plan, une hiérarchisation et une typologie préétablis[47]. Il n'est pas rare de voir des textes incomplets. Toutes indications relatives au cadre architectural du pavement/tableau, ainsi que la fonction utilitaire qu'il y remplissait font parfois défaut.

Certaines données concernant des sujets réels ou tirés de la mythologie gréco-romaine, représentés par de nombreux pavements/tableaux, sont imprécises, voire même erronées[48]. Il suffit parfois d'une simple confrontation entre l'image

47 Tout acte de communication doit non seulement attirer le regard du visiteur mais le pousser à la réflexion ; appréciation et interprétation sont deux notions, voire deux exigences, capitales qui doivent être respectées par toute pratique muséale ayant pour rôle la construction du savoir.

48 Les exemples sont assez nombreux. On se contente de signaler juste quelques-uns :

- Détail d'une mosaïque d'*Althiburus* : Notice (Amour pécheur et une Nymphe à demi-couchée sur une jarre). La description exacte (Une Nymphe à demi-étendue, appuyant l'avant-bras droit sur une cruche). Pour toutes informations complémentaires sur cette mosaïque, voir Ennaïfer 1976: 66 pl. XL.

- Mosaïque de *Thugga* (Inv. 3330) : Notice (Divers motifs à valeurs bénéfiques) ; une totale confusion entre symbolique et bénéfique !

- Mosaïque de *Thugga* (Inv. 3331) : Notice (Amours vendangeurs tenant en laisse un gecko). La scène contredit une telle description ! Les deux Amours tiennent, chacun, une serpette et non pas une corde. La façon dont sont rendus ces motifs et surtout leur configuration réfutent une telle allégation ; il faut vérifier comment sont rendus les contours de chaque détail, ainsi que les zones de marquage en blanc pour s'en rendre compte. Voir photo dans Yacoub 1995: 342 fig.170.

- Mosaïque de *Thuburbo Maius* (A 372) : Notice (Labyrinthe entourant la légende du héros Thésée en train de tuer le monstre Minotaure). Le labyrinthe n'entoure pas la légende. Dans la tradition littéraire, ainsi que dans l'iconographie classique, voire même moderne, le labyrinthe de Crète est l'élément central, voire l'assise autour de laquelle tournent toutes les péripéties de la légende. Ce n'est pas une simple structure architecturale, décorative, comme le prétende cette notice, mais c'est le lieu magico-légendaire dans lequel se déroule la lutte entre les deux protagonistes. La description exacte (Le héros athénien Thésée combattant le Minotaure dans le labyrinthe de Crète). Pour plus de détails, voir Hajji 2009: 83-94 fig. 1.

- Mosaïque d'*Acholla* (Inv. 3588) : Notice (Travaux d'Hercule avec des créatures humaines, animales et monstrueuses qu'il a vaincues). Où sont les créatures humaines ? Achéloos, le dieu fleuve, ou Géryon, le géant monstrueux ? De surcroît, on ne fait pas de distinction entre les douze travaux et les

ou la scène représentée et le texte pour se rendre compte du caractère fantaisiste de certaines descriptions et formulations[49]. Des figures légendaires confondues avec d'autres et des descriptions réductrices, pour ne pas dire aberrantes[50]. Plus encore, le maintien d'anciennes identifications et lectures erronées. Bizarrement toutes originalités iconographiques et thématiques passent sous silence ! En effet, on ne se rend pas compte de la singularité de certaines scènes. Plusieurs sont uniques dans l'art de la mosaïque[51] et d'autres inégalées non seulement dans la tradition picturale romaine[52] mais dans toute la tradition iconographique gréco-romaine[53] ; une vraie richesse qui passe inaperçue. Outre les imprécisions qui caractérisent la rédaction de certains textes, typographie et forme, on remarque que les traductions ne sont pas toujours réussies. Aucune attention pour vérifier l'exactitude des termes utilisés, certains génèrent l'embarras et la confusion et d'autres éveillent des doutes et l'on est inévitablement face à de effets inverses et une dévalorisation des œuvres.

---

exploits périphériques. Pour toutes informations complémentaires sur cette mosaïque, voir Gozlan et al. 2001: 40-48, pl. X.

49 On peut mentionner certains exemples provenant du Musée de Sousse :

- Mosaïque d'*œcus* d'une *domus* romaine (Foucher 1960: 47-48 N°57.099) : Notice (Le cortège triomphale de Dionysos : le dieu…il est accompagné…et de Dionysos enfant sur un lion…). Nous sommes en présence de deux séquences différentes du mythe de Dionysos, représentées sur deux registres. En bas, Dionysos, l'enfant maître des bêtes fauves, lion et panthère. En haut, c'est le triomphe indien du dieu. Il faut juste lire quelques travaux sur le cycle dionysiaque pour s'en rendre compte. Voir photo dans Yacoub 1995: fig.13.

- Mosaïque d'une *domus* romaine (Foucher 1960: 42-44 N°57.092) : Notice (Enlèvement de Ganymède… par l'aigle de Zeus). On ne fait pas de distinction entre l'aigle, l'avatar du dieu, et l'instant où le seigneur de l'Olympe s'est métamorphosé en aigle pour enlever son échanson. La description exacte (L'enlèvement de Ganymède par Zeus, métamorphosé en aigle). Voir photo dans Yacoub 1995: fig. 91.

- Mosaïque du *tepidarium* d'une *domus* romaine (Foucher 1960: 121-122 N°57.274) : Notice (…Tête de Gorgone…). De quelle Gorgone s'agirait-il ? Sthéno, Euryale ou Méduse ? La mortelle où l'une des deux immortelles ? C'est la confusion totale. La description exacte (Tête de Méduse). Voir photo dans Blanchard-Lemée et al. 1995: figs. 188-189.

50 Comme exemples, on retient les mosaïques suivantes, exposées au Musée du Bardo ;

- Panneau de seuil de la maison de Caton d'*Utica* (Inv.2891) : Notice (Vénus à moitié nue avec trois Amours). La composition générale de la scène et l'attitude des protagonistes contredisent une telle description. Nous sommes en présence d'une scène peu représentée dans l'iconographie gréco-romaine. La description exacte (La punition d'Eros en présence de la déesse Vénus). Voir photo dans Yacoub 1995: fig. 104.

- Mosaïque de *Thuburbo Maius* (Inv.2790) : Notice (La déesse Vénus nue avec un dauphin..). Tous les détails iconographiques contredisent une telle description. Le gouvernail autour duquel s'enroule un dauphin, l'autel, la couronne des fleurs et la mer ce sont des allégories et non pas des simples motifs. De surcroît l'attitude de la déesse, d'un geste pudique essaye de cacher son sexe, est révélatrice. Nous sommes face à une scène peu fréquente dans l'art de la mosaïque. Une séquence bien particulière du mythe ; Le débarquement à terre de la Vénus anadyomène. Voir photo dans Yacoub 1995: fig.102.

- Mosaïque d'*Acholla* (Inv.3594) : Notice (Buste de la déesse Minerve). Et le personnage, le géant Anguipède, qui tient au-dessus de la tête l'*imago clipeata* contenant le buste de la déesse ? Est-ce une allusion à un épisode de la gigantomachie ? Voir photo dans, Picard 1980: 97 fig.15 ; Slim-Fauqué 2001: 239.

51 La liste contient plus qu'une vingtaine de mosaïques mais on se limite à mentionner juste quelques-unes ;

- Dionysos et les pirates Tyrrhéniens, *Thugga*, (Musée du Bardo). Voir, Hajji 2009: 76-81.

- La fuite des Enéades (Maison de la volière à *Karthago*). Voir, Hajji 2013: 15-52.

- Le saut d'Ino dans la mer (Maison de la volière à *Karthago*). Voir, Hajji 2017: 135-146.

- Chrysès et Agamemnon, *Neapolis*, (Musée de Nabeul). Voir, Hajji 2011 : 93-102.

- Philoctète et l'ambassade des Grecs, *Neapolis*, (Musée de Nabeul). Voir, Hajji 2009: 28-40.

- Les Cyclopes dans la forge de *Vulcanus, Thugga,* (Musée du Bardo). Voir photo dans, Yacoub 1995: fig. 92.

52 On peut songer ici, entre autres, à une mosaïque exposée au musée d'Haïdra, figurant le mythe de Pélops, Hippodamie et Myrtilos. Pour plus de détails, voir Hajji 2009: 103-109.

53 À titre d'exemple, une mosaïque exposée au musée de Nabeul, figurant le cortège nuptial de Bellérophon et Philonoé. Voir, Hajji 2009: 142-153.

Il n'est pas inutile de dire quelques mots sur les modes de présentation de ces outils de communication. Cette opération est souvent traitée avec une fâcheuse indifférence. La quasi-totalité ou presque des pavements/tableaux qui ornent les sols des Musées ne semble venir de nulle part. Aucune indication sur les sujets qu'ils représentaient, aucune information ni sur les lieux de provenance ni sur les contextes archéologiques et historiques. Les mêmes remarques s'appliquent à d'autres pavements/tableaux fixés aux murs. De surcroît, on relève que les procédés techniques utilisés pour rendre plus accessible, voire plus lisible, les notices paraissent variables d'un endroit à un autre.

L'emplacement des notices pose parfois problème. L'adéquation texte explicatif et œuvre exposée n'est pas toujours respectée. Il n'est pas rare de voir des notices affichées à plusieurs mètres des tableaux qu'elles devaient clarifier. Parfois, des notices de plusieurs tableaux sont regroupées dans un seul espace, ou encore, placées à quelques dizaines de centimètres au-dessus du sol (Fig. 36). Ecrites en petits caractères, elles deviennent indiscernables, voire imperceptibles. De surcroît, certaines, réalisées depuis des décennies, sont devenues illisibles ; tachetées avec de la peinture ou encore altérées à cause de l'humidité (Figs. 37-38).

Figure 36
Bardo, musée, notice d'une mosaïque figurant Dionysos faisant don de la vigne à *Icarius* (photo J.Hajji).

Figures 37-38
Sfax, musée (photo J.Hajji).

4- Réserves : Modalités de stockage

Les Musées ne présentent dans les expositions permanentes qu'une partie de leur collection mosaïstique. Le reste est conservé ou entreposé, généralement, dans des réserves ou encore dans des locaux annexes. Inconnus du grand public, ces dernières, qui constituant parfois la partie cachée de l'iceberg, font l'objet de recommandations très spécifiques. Il suffit de se reporter aux principes, chartes et conventions universelles, sur la préservation des biens culturels pour s'en

convaincre[54].

Curieusement, contrairement à toute attente, on continue, dans la plupart du temps, à considérer les réserves, consacrées aux collections mosaïstiques, comme de simples lieux de stockage, voire des débarras[55] (Figs. 39-40). Les pratiques adoptées, les méthodes et les modalités poursuivies, par la direction de l'INP et les intervenants décideurs, depuis des décennies, montrent de véritables défaillances[56]. On se demande parfois comment des lieux ayant pour vocation première la conservation préventive de ce patrimoine culturel de tout type de danger soient aussi mal conçus. Au lieu de protéger des pavements amputés de leur contexte archéologique, on ne fait qu'amplifier leur précarité et les mettre ainsi en péril.

L'écart entre les principes universels et les pratiques actuelles paraît démesuré. Le problème majeur est avant tout d'ordre perceptif, voire conceptuel. Les visions minimalistes, qui réduisaient toute la procédure de préservation en quelques opérations de rangement, ne voyaient en les réserves que des simples dépôts (Fig. 41). Les principales fonctions muséographiques sont complètement ignorées. On oublie tout simplement que c'est dans les réserves que la dynamique du Musée puise ses sources et que s'effectue l'essentiel des travaux appliqués à la préservation de la collection mosaïstique[57].

La conception architecturale des locaux, même les plus récents, ne prend presque jamais en considération les spécificités, voire les contraintes et les précautions qu'impose la restauration/conservation des pavements. Bien plus, les questions de fonctionnalités et d'accessibilités ne figurent pas dans certains projets de rénovation et de réaménagement. Le cas du Musée du Bardo est à ce titre édifiant. L'emplacement architectural actuel des réserves et des ateliers ne répond pas aux normes élémentaires de conservation[58]. Situé au sous-sol, le local, mal isolé, est sujet aux multiples problèmes d'humidité. Aucune ouverture d'aération et de luminosité sur l'extérieur. À cela s'ajoute la totale négligence de toutes les mesures de sécurité, assurant la protection de la collection mosaïstique, ainsi que celles des intervenants. Plus intrigant encore, on ne peut accéder à ce local fermé des quatre côtés qu'avec un monte-charge ou par des escaliers, aucune ouverture sur l'extérieur. De telles conditions portent préjudice à l'état de préservation des pavements/documents, rendent difficile, voire dangereuse, toute intervention et compliquent le déroulement de l'opération conservative[59].

---

54 On peut aussi se reporter aux multiples versions du code de Déontologie définie par le Conseil International pour les Musées (ICOM), de 1986 au 2016. "L'autorité de tutelle d'un musée a le devoir éthique de maintenir et de développer tous les aspects d'un musée, ses collections et ses services. Surtout, elle a la responsabilité de veiller à ce que toutes les collections qui lui sont confiées soient abritées, conservées et documentées de façon appropriée". 20ème Assemblée générale réunie à Barcelone, Espagne, le 6 juillet 2001.

55 Ailleurs, les réserves sont devenues un moyen de base pour la conservation préventive et la gestion optimale des collections, un espace dynamique et multifonctionnel. Stockage, rangement, répartition et exploitation de la collection sont conçus suivant des principes scientifiques, culturels et patrimoniaux bien précis.

56 La réalité est tout à fait différente des discours et des images affichés ; depuis les années soixante-dix du siècle dernier le nombre des réserves construites ou réhabilitées sur l'échelle nationale se compte sur les doigts d'une seule main. Ce ne sont pas les fonds qui font défaut mais plutôt une réelle volonté pour changer la situation.

57 Aujourd'hui les réserves font partie du musée au même titre que les espaces d'exposition ; un élément de base dans le projet scientifique et culturel du musée.

58 "La politique du musée doit faire que les collections (permanentes et temporaires) et leurs informations associées, correctement consignées, soient transmises aux générations futures dans les meilleures conditions possibles". Code de déontologie de l'ICOM pour les musées, 2017.

59 En principe la conception des réserves doit obéir à un programme qui prend en compte non seulement la nature de toutes les composantes de la collection mosaïstique, leur diversité et leur état de

Figure 39
Carthage, réserves (photo J.Hajji).

Figure 40
Carthage, réserves (photo J.Hajji).

On voit souvent des piles de pavements, fractionnés en plusieurs morceaux et reposés sur du béton armé, dressées dans un désordre total contre les murs extérieurs des réserves, voire de certains locaux annexes (Fig. 42). Quelques-uns sont dans un état de dégradation très critique. Les variations climatiques, les intempéries et les fortes chaleurs, ont provoqué le gonflement des éléments poreux, l'éclatement des tesselles, la déformation de la surface, la dilation et le clivage des supports.

D'autres pavements sont rangés sous des abris dérisoires, aménagés avec des tubes métalliques et des plaques en zinc. On utilise parfois des entrepôts de fortune, sorte de cabanons, souvent mal conçus et mal entretenus (Fig. 43). Pire encore, dans plusieurs endroits on a l'impression d'être en face d'un dépotoir, pour ne pas dire une décharge ; des mosaïques endommagées, délaissées parmi des engins et des outils de manutentions, des caisses en bois abandonnées, d'anciennes vitrines et d'objets métalliques entre autres.

La négligence et la violation des normes de conservation et de préservation ont eu des conséquences désastreuses[60]. On voit presque partout des pavements se

Figure 41
Carthage, réserves (photo J.Hajji).

conservation, mais aussi certaines exigences et normes sécuritaires.

60 L'un des principes fondamentaux fixés par l'ICOM, " La mission d'un musée est d'acquérir, de

Figure 42
Carthage, réserves (photo J.Hajji).

Figure 43
Ksar Saïd, dépôt (photo J.Hajji).

Figure 44
Carthage, cour du musée (photo J.Hajji).

Figure 45
Carthage, réserves (photo J.Hajji).

détériorer en silence. Des œuvres disloquées et fractionnées en plusieurs pièces (Fig. 44). Des revêtements, dont la cohésion de leurs éléments constitutifs n'est plus assurée par l'entoilage effectué lors de la dépose, sont devenus illisibles. Ils sont parfois, réduits en amas de tesselles insignifiantes. Les dommages sont irréversibles ; non seulement des dégâts matériaux mais aussi une véritable perte de données historiques, archéologiques, techniques et patrimoniales.

Les modalités de stockage rendent délicate toute manipulation des pavements entreposés. La question de l'accessibilité n'est que rarement prise en compte. Il est souvent pénible, parfois impossible, d'effectuer des vérifications techniques ou scientifiques. De même, il est difficile de contrôler régulièrement l'état des œuvres. Une telle opération permet non seulement le repérage des récentes altérations, touchant à la fois la surface et le support, mais la prévision d'une programmation, à temps, d'interventions appropriées[61].

Il n'est pas inutile de mettre l'accent sur une autre déficience, des pavements confinés, depuis plusieurs années, dans des caisses en bois, souvent abandonnées en plein air (Fig. 45). Une telle anomalie passe inaperçue ! Après avoir été présentées, pendant un certain temps, à l'étranger, dans des expositions temporaires, ces pièces maîtresses sont délaissées comme telles, dans des annexes des musées, sous les intempéries et la chaleur. Généralement, ces caisses provisoires sont utilisées pour un but particulier, protéger les pièces d'éventuelles dégradations qui pourraient survenir lors du transport mais jamais comme structure de conditionnement permanent. Les conséquences pourraient être désastreuses et les dommages pourraient être multiples, matérielles et scientifiques. Il suffit que les caisses prennent feu et tous les revêtements sont mis en danger.

III- Gestion : Ressources humaines et financières.

La gestion des collections mosaïstiques doit se fonder sur une connaissance, la plus complète possible, des caractères spécifiques de ce patrimoine culturel si particulier, sa nature et son étendue. De même, toute stratégie ou politique conservative doit non seulement préserver les valeurs authentiques matérielles et immatérielles de chaque pavement/document, mais aussi de le considérer comme un héritage de l'humanité toute entière, non comme un bien d'une

préserver et de valoriser ses collections afin de contribuer à la sauvegarde du patrimoine naturel, culturel et scientifique''.

61 De tels dysfonctionnements montrent bien que l'activité muséale a été conçue autour des expositions d'objets, y compris la collection Mosaïstique, et non pas autour de la gestion du patrimoine.

quelconque institution.

Depuis la fin des années quatre-vingt-dix, l'Institut National du Patrimoine de Tunisie (l'INP) et certaines institutions internationales, le Getty Conservation Institut en particulier, ont mis en place quelques programmes de formation de techniciens capables d'entretenir et de restaurer des mosaïques *in situ* ou conservées dans des musées. Si l'idée générale, voire l'objectif affiché, paraît alléchant, les acquis sont aujourd'hui discutables, voire contestables.

Un grand nombre de techniciens, après avoir été formés, partiellement, dans quelques méthodes et pratiques de suivi et d'entretien de la mosaïque, s'est vu attribuer d'autres fonctions. Certains, par la force des choses, sont devenus de simples gardiens des sites. D'autres, se sont retrouvés comme chefs de chantiers, ayant la charge de superviser et contrôler des travaux quotidiens, gardiennage et désherbage, entre autres. On ne peut que rester dubitatif face à un tel dysfonctionnement, surtout lorsqu'on regarde de plus près les déplorables conséquences.

D'autres déficiences sont à noter. On a cru bon former quelques techniciens pour faire face à l'ampleur des dégâts mais on a occulté d'autres détails primordiaux. Il paraît que la formation en elle-même a été considérée comme un objectif en soi. Elle n'a jamais été considérée comme une étape parmi d'autres dans une stratégie plus vaste qui prend la question restauration/conservation dans toutes ces polarités.
On ne peut que déplorer l'absence d'une vision globale qui prend en considération tous les besoins du pays et non pas les nécessités de quelques régions. Outre le déséquilibre flagrant dans les choix, on distingue une mauvaise gestion des ressources humaines. Actuellement, l'intérêt se focalise sur quelques sites, moins d'une demi-douzaine. Plus surprenant encore, dans un grand nombre de gouvernorats, une telle nécessité d'avoir des techniciens sur place ne figure pas dans les priorités de l'INP ; la situation dans certains endroits est devenue incontrôlable.

Un décalage entre les moyens mis en œuvre et les réelles nécessités, voire les vrais besoins, pour une meilleure restauration/conservation des pavements/documents est manifeste. Une totale absence d'appréciation réfléchie ne fait pas l'ombre d'un doute. En réalité ce n'est pas le coût des matériaux appropriés et des équipements adéquats qui empêche l'adoption des nouvelles techniques, déjà utilisées dans le reste du monde depuis de nombreuses décennies, mais la persistance de certaines méthodes défaillantes de gestion et de supervision. On rencontre sur les sites des techniciens souvent sans moyens et mal équipés, pour ne pas dire complètement démunis. Les équipements et les outils utilisés dans les musées pour le remontage des pavements, ou encore dans le traitement de surface, paraissent souvent dérisoires ; de plus, ils présentent un réel danger non seulement pour l'intégrité des pavements, mais encore pour la santé et la sécurité des équipes intervenantes.

Il est toutefois curieux de constater qu'aujourd'hui on ne dispose pas encore d'une vraie stratégie nationale de gestion, d'entretien, d'intervention, de protection et de préservation des collections mosaïstiques, gardées *in situ*, exposées dans les Musées ou entreposées dans des réserves et des entrepôts[62]. On

62 Il semble que le favoritisme, le relationnel et le clientélisme ont pris la place des principes éthiques, déontologiques et professionnels : les volets formations et programmations des projets d'intervention, toutes opérations confondues, sont confiés à des personnes, diplômées en architecture, qui n'ont ni aptitude ni compétence professionnelle dans le domaine, voire dans toute la discipline archéologique. On reste sans voix face à un tel dysfonctionnement.

continue à appliquer la politique inconsidérée des petites tâches sans soucier de l'avenir et l'advenir de ce patrimoine. De surcroît, on ignore encore l'utilité d'un programme de suivi et d'évaluation périodique des procédés et des pratiques conservatives. D'où, la nécessité d'une planification à long terme qui détermine les axes à suivre, les buts à atteindre, les moyens financiers, matériels et humains nécessaires et les paramètres à prendre en considération.

Conclusion

L'enjeu entre l'évolution récente de la notion du patrimoine et la pratique restauration/conservation, résume à lui seul le dilemme entre des conceptions anciennes, souvent minimalistes, et d'autres plus récentes optant pour un pluralisme des pratiques et d'approches. L'établissement hiérarchique des valeurs, basé sur les notions artistiques, telles l'esthétique et la lisibilité, ne peut plus s'articuler avec le contexte actuel. Désormais, des nouveaux critères méthodologiques et déontologiques doivent être établis pour accompagner la patrimonialisation tant dans sa dimension culturelle que sociétale.

De la sorte, il est primordial de mettre fin à l'empirisme d'une mentalité déficitaire qui, se cachant derrière des prétextes futiles, des problèmes budgétaires (coût des matériaux et des équipements), réduit toute la procédure préservation et sauvegarde du patrimoine mosaïstique à quelques opérations techniques, à du rafistolage et du lifting dans la plupart des cas. Il serait temps de mettre en place une vraie stratégie basée sur des nouvelles approches techniques et scientifiques où le statut, les particularités matérielles et immatérielles de chaque pavement/ document doivent être prises en considération et mises en valeur par tous les intervenants, décideurs et praticiens.

Il est curieux de constater qu'aujourd'hui on ne dispose ni de base de données nationale[63] ni d'un inventaire complet de tous les pavements, tous types de revêtements confondus, découverts en Tunisie[64]. Il suffit de rappeler que le dernier recensement remonte au début de la deuxième décennie du siècle dernier[65]. On néglige tout simplement que toute politique ou stratégie de protection, préservation, mise en valeur et gestion doit se fonder sur une connaissance, la plus complète possible, de l'étendue de ce patrimoine archéologique/ culturel, sa nature, ses particularités et son état. De même, on continue, avec une totale indifférence, à ignorer l'utilité scientifique de cet instrument fondamental ; il constitue la première base de données qui pourrait fournir tous les éléments

63 Les inventaires de la Division du développement muséographique et de la Division de l'inventaire générale et de la recherche sont incomplets et conçus d'une façon assez rudimentaire ; les données ne sont pas actualisées, l'exhaustivité et la fiabilité des informations qui y sont répertoriées ne sont pas garanties. Les normes et les principes scientifiques qui organisent une telle activité patrimoniale demeurent méconnus.

64 Parfois, sur les catalogues de certaines galeries d'art ou de sociétés de vente aux enchères d'objets archéologiques, Gordian Weber kunsthandel et Christie's, entre autres, on trouve des mosaïques provenant de Tunisie, sans aucune autre information. L'absence d'inventaire général de tout le patrimoine mosaïstique empêche de vérifier d'où ces dernières viennent exactement, de quel site, de quelle région et de savoir si elles étaient volées ou pas ! Ceci va à l'encontre des initiatives internationales qui visent à combattre le commerce illicite des objets culturels. L'article 5 de la Convention de l'Unesco de 1970 concernant les mesures à prendre pour interdire et empêcher l'importation, l'exportation et le transfert de propriété illicites des biens culturels, demanda que des inventaires nationaux de biens culturels soient dressés et maintenus à jour. Ou encore, l'article N°4 de la Convention d'Unidroit sur les biens culturels volés ou illicitement exportés, Rome 1995. Pour plus de données sur ce problème, qui ne cesse de s'amplifier, voir parmi les récentes recherches, Marc-André 2018.

65 Seuls quelques inventaires ou catalogues, plus ou moins sommaires, de sites, voire de certaines localités, ont été réalisés. On peut mentionner, Foucher 1960 ; Bairem-Ben Osman 1980. De surcroît, les corpus des mosaïques de Tunisie paraissent limités ; seuls quelques sites isolés ou zones bien précises de certains sites ont attiré l'attention.

indispensables à toutes approches et études scientifiques[66].

Il est insensé de continuer à appliquer des méthodes et des techniques déficitaires dont les conséquences se sont avérées désastreuses, les errements et les trébuchements ont causé d'innombrables dégâts. La restauration/conservation des collections mosaïstiques ne peut plus se faire sans une véritable évaluation périodique des programmes de formation, des approches, des méthodes et des techniques appliquées en ateliers ou sur sites. Il est insuffisant de former quelques techniciens ou conservateurs, souvent abandonnés à leur sort, sans avoir une vraie stratégie nationale qui prend en compte les nouveaux paramètres scientifiques et techniques approuvés ailleurs depuis des décennies. De même, il est indispensable de mettre en place une véritable politique d'échanges, non pas quelques accords formels, inter-institutionnels entre l'INP et des organismes nationaux, en particulier, et d'autres étrangers. Une vraie politique institutionnelle où prime l'intérêt national, voire même universel, et non pas les petits intérêts de quelques-uns au détriment d'un héritage de l'humanité toute entière[67].

Enfin, Il serait primordial de rappeler que l'adhésion aux textes universels, chartes et conventions, relatifs au patrimoine vernaculaire, dans ces notions les plus vastes, suppose un engagement éthique, voire même déontologique, une réelle implication et une totale acceptation des obligations et des principes fondamentaux véhiculant et conditionnant l'opération restauration/conservation. Les seules conditions qui pourraient garantir une meilleure préservation et surtout la survie d'un patrimoine fragilisé et menacé, pour ne pas dire agonisant.

66 L'écart paraît démesuré par rapport aux principes fixés par la charte internationale pour la gestion du patrimoine archéologique, Lausanne 1990. Article. 4 '' l'inventaire doit être une obligation fondamentale dans la protection et la gestion du patrimoine archéologique. En même temps, les inventaires constituent une banque de données fournissant les sources primaires en vue de l'étude et de la recherche scientifique. L'établissement des inventaires doit donc être considéré comme un processus dynamique permanent''.

67 On peut reprendre ici quelques citations, du document NARA sur l'authenticité, 1994, ''une richesse intellectuelle et spirituelle irremplaçable pour toute l'humanité''. Ou encore, de la Charte internationale pour la gestion du patrimoine archéologique, Lausanne 1990, '' le patrimoine archéologique est l'héritage de l'humanité toute entière et de groupes humains, non celui de personnes individuelles ou de nations particulières''.

Bibliography – Kaynaklar

Bairem-Ben Osman 1980	W. Bairem-Ben Osman, ''Catalogue des mosaïques de Carthage'', Thèse de doctorat de 3ème cycle, Université d'Aix-en-Provence.
Blanchard-Lemée et al. 1995	M. Blanchard-Lemée - M. Ennaïfer - H. Slim - L. Slim, Sols de la Tunisie romaine, Paris.
Ennaïfer 1976	M. Ennaïfer, La cité d'Althiburos et l'édifice asclepieia, Tunis.
Foucher 1960	L. Foucher, Inventaire des mosaïques –Feuille n°57 de l'Atlas archéologique, Sousse, Tunis.
Gozlan et al. 2001	S. Gozlan - N. Jeddi - V. Blanc-Bijon - A. Bourgeois, Recherches Archéologiques franco-tunisienne à Acholla. Les mosaïques des maisons du quartier central et les mosaïques éparses, Paris.
Hajji 2009	J. Hajji, ''Conflits et Amours mythiques représentés sur des mosaïques de l'Afrique Proconsulaire au Bas-Empire (fin du IIIème - début du Vème siècle)'', Thèse de doctorat, Université-Lumière Lyon.II, Lyon.
Hajji 2011	J. Hajji, ''Chrysès et Agamemnon sur une mosaïque de Neapolis. Quelques réflexions Iconographiques'', MeditArch 24, 93-102.
Hajji 2013 (2017)	J. Hajji, ''La fuite des Enéades sur un emblema de Carthage'', Musiva 10, 15-52.
Hajji 2017	J. Hajji, ''Le plongeon d'Ino dans la mer sur un emblema de Carthage'', Africa (T) 24, 135-146.
Marc-André 2018	R. Marc-André, Le commerce légal et illégal de biens culturels vers et à travers l'Europe : faits, conclusions et analyse juridique, Genève.
Picard 1980	G. C. Picard ''De la Maison d'Or de Néron aux thermes d'Acholla'', Mon Piot 63, 63-104.
Slim et al. 1996	H. Slim - C. Duliere - M. A. Alexander - S. Ostrow - J. G. Pedley - D. Soren, Corpus des mosaïques de Tunisie. Vol.III-Thysdrus, Eljem, Fascicule 1, Quartier sud-ouest, Tunis.
Slim - Fauqué 2001	H. Slim - N. Fauqué, La Tunisie antique de Hannibal à Saint Augustin, Paris.
Yacoub 1995	M. Yacoub, Splendeurs des mosaïques de Tunisie, Tunis.
Yacoub 1996	M. Yacoub, Le musée du Bardo (Départements antiques), Tunis.

DOI: 10.26658/jmr.614865 JMR 12, 2019 107-118

The Third Dimension of the Magdouh Mosaic in Antioch

Antakya Magdouh Mozaiği'nin Üçüncü Boyutu

Hakan HİSARLIGİL * - Beyhan BOLAK HİSARLIGİL**

(Received 06 July 2019, accepted after revision 30 September 2019)

Abstract

This study investigates the complex geometry of the pattern of circles in the Magdouh Mosaic, which dates to between the fifth and sixth centuries, found in Antioch-on-the-Orontes (modern Antakya, Turkey). The mosaic has a complex pattern that is composed of tangent, overlapping and intersecting circles suggesting that it was worthwhile analyzing in 3D. Through such an analysis, it was observed that the extension of the pattern of circles into a third dimension looks like spheres packed together that intersect in three directions at right angles. This can also be demonstrated by packing octahemioctahedra, which are a cluster of eight regular packed tetrahedra contained within the spheres. In addition, the packing of octahemioctahedra in this way also suggests the packing of stella octangula contained within hemispheres that intersect each other. Furthermore, tracing the line segments that are emphasized in each circle in the Magdouh Mosaic in such a 3D structure turns them into space-filling rhombohedra that can be dissected into two tetrahedra and an octahedron. Thus, the result of this study shows that the Magdouh Mosaic in Antioch is the top view of a square-based pyramidal cluster of intersecting hemispheres that hold space-filling rhombohedra inside them.

Keywords: *Ancient mosaics, Antioch, geometry, cubic close packing, rhombohedron.*

Öz

Bu çalışma, Antakya'da bulunan, beşinci ve altıncı yüzyıllara ait Magdouh Mozaiğinin karmaşık geometrik düzeninin üç boyutlu içeriğini araştırmaktadır. Bunun nedeni, mozaik kompozisyonunu oluşturan geometrik düzenin yüzeyde oldukça güçlü bir derinlik etkisi oluşturmasıdır. Bu amaçla çalışma kapsamında bu mozaiğin geometrik dokusunu oluşturan elemanlar ile bunların arasındaki ilişkilerin üçüncü boyuttaki geometrik karşılıkları belirlenmeye çalışılmıştır. Bu kapsamda öncelikle mozaik bütününe bakıldığında görsel kompozisyon düzlemsel olarak dört katmandan oluşan daire kümelerinden oluşan kare tabanlı tepeler olarak görülmektedir. Bu tepelerde simetrik olarak dört farklı doğrultuda birbirine teğet olan, birbirleri üstüne binen ve birbirleri ile kesişen daireler bir arada görülmektedir. Üçüncü boyuta taşındığında da bu kümelerin dokusunu oluşturan dairelerin, dik koordinat sisteminde birbirleriyle kesişen kürelere karşılık geldiği belirlenmiştir. Kürelerin dik koordinat sisteminde bu oranda kesişmesi ile oluşan üç boyutlu ağ içerisinde her bir küre, bir küp sekizyüzlünün kenarlarını oluşturacak şekilde paketlenen sekiz adet düzgün dörtyüzlü bir küme içerirken, kesişen herhangi iki kürenin kesişen yarıları ise yıldızlaşmış bir düzgün sekizyüzlü içermektedir. Her bir yıldızlaşmış sekizyüzlü ise birbirleriyle kesişen dört adet rombik altı yüzlü birime ayrıştırılabilmektedir. Bu gometrik içerik bir bütün olarak değerlendirildiğinde, Magdouh Mozaik yüzeyi üçüncü boyutta uzayı boşluksuz doldurabilen eş altı yüzlü birimlerin paketlenmesi olarak karşılık bulmaktadır.

Anahtar Kelimeler: *Antik mozaikler, Antakya, geometri, sıkışık kübik paketlenme, rombohedron.*

* Hakan Hisarlıgil, İstanbul Rumeli University, Department of Architecture, İstanbul, Türkiye.
ORCID ID: https://orcid.org/0000-0003-0616-9539. E-mail: hhisarligil@gmail.com

** Beyhan Bolak Hisarlıgil, İstanbul Rumeli University, Department of Architecture, İstanbul, Türkiye.
ORCID ID: https://orcid.org/0000-0002-3343-0440. E-mail: bolakb@gmail.com

Introduction

Throughout history, the Ancient Greek and Roman mosaic pattern designs vary from lively scenes of everyday life or mythology to abstract geometric patterns. Compared to research into mythology and everyday life, studies on abstract geometrical patterns in ancient mosaics seem relatively limited (Parzysz 2009). Among geometrical mosaic patterns, the use of a circle – as a basic geometrical figure – is called a scale-pattern (imbrication), peltae or intersecting (interlacing or overlapping) circles in mosaic art found in various places. Among these, the Magdouh Mosaic is one that is especially investigated because it is a complex pattern that represents various patterns of circles as one, and also because it is a part of a rich collection of mosaics with geometrical patterns found in the same era and within the same geography.

For Levi (1947) – who catalogued the Antioch Mosaics chronologically – no other site has been so widely representative of a series with a chronology determined by stratigraphic evidence (Haynes 1951: 111). The Antioch mosaics demonstrate a remarkable continuity with the Hellenistic group artistic tradition (Cimok 2000: 15). The single city of Antioch – through a rich collection of material – is one of the few sites anywhere in the ancient world that have provided so long and continuous a series of mosaics from the eastern Roman Empire. Dating from the late first century or early second century AD to the mid-sixth century AD, the mosaics represent the crucial period spanning the classical to the medieval (Dunbabin 1989: 313). It is only Antioch that has a continuous series of mosaics of particular importance for those interested in early Christian art (Hopkins 1948: 91).

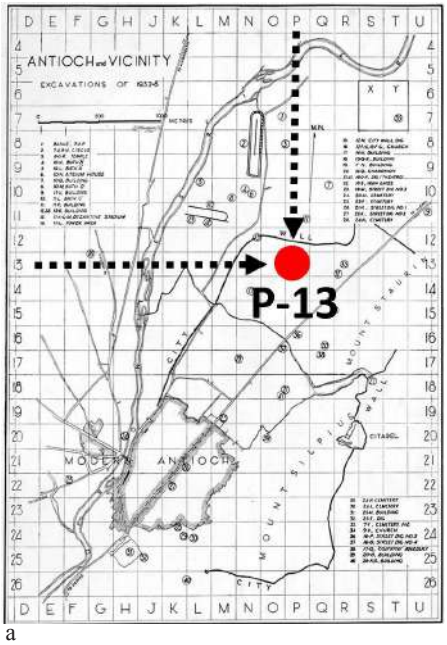
Within such a context, this study, by introducing the descriptions of the geometrical content of the patterns observed by some researchers, explains the geometrical construction of the circular patterns in the Magdouh Mosaic. Secondly, it looks at the 3D content of the planar composition that is a result of a comprehensive geometrical analysis identifying not just a number of polyhedrons, but also types of lattice coordinate axes that would explain the ultimate structure of the design.

The Magdouh Mosaic in Antioch

The excavation of Antioch-on-the-Orontes (modern Antakya, Turkey) from 1932– 1939[1] led to the landmark discovery of over three hundred mosaics dating from the first decades of the second century to the sixth century. Antioch-on-the-Orontes was founded in 300 BC as the capital of the Hellenistic Seleucid Empire, and later, the third most important city of the Roman Empire. The floor mosaics were uncovered from the houses of Antioch and its surrounding area, the nearby garden suburb of Daphne, and the port city of Seleucia Pieria. The mosaics found are kept in the Hatay Archaeological Museum in Antioch and scattered across the Louvre Museum in Paris and in various US collections (Campbell 1988; Barsanti 2012: 25). Doro Levi's (1947) "Antioch Mosaic Pavements" still serves as the most comprehensive study and analysis of the mosaics of Antioch uncovered by these excavations. Levi discusses the compositions of the figured scenes and the decorative pattern of the mosaics with the plans of the buildings

1 The history of the excavations began in 1932 and continued until 1939. With the start of the war in Europe it became impossible to carry out any further work. The mosaics were first published as three volume of reports in Elderkin 1934, Stillwell 1938, and Stillwell 1941.

they paved in chronological order[2]. The Magdouh Mosaic or Magdoue Mosaic is a floor mosaic dating to the sixth century (Levi 1947: 626) uncovered in 1937 from the land of Magdouh in Sector 13-P of the excavation area, which is a short distance from the inner face of the north wing of the town walls (Levi 1947: 357) (Fig. 1a[3], Fig. 1b[4]).



a

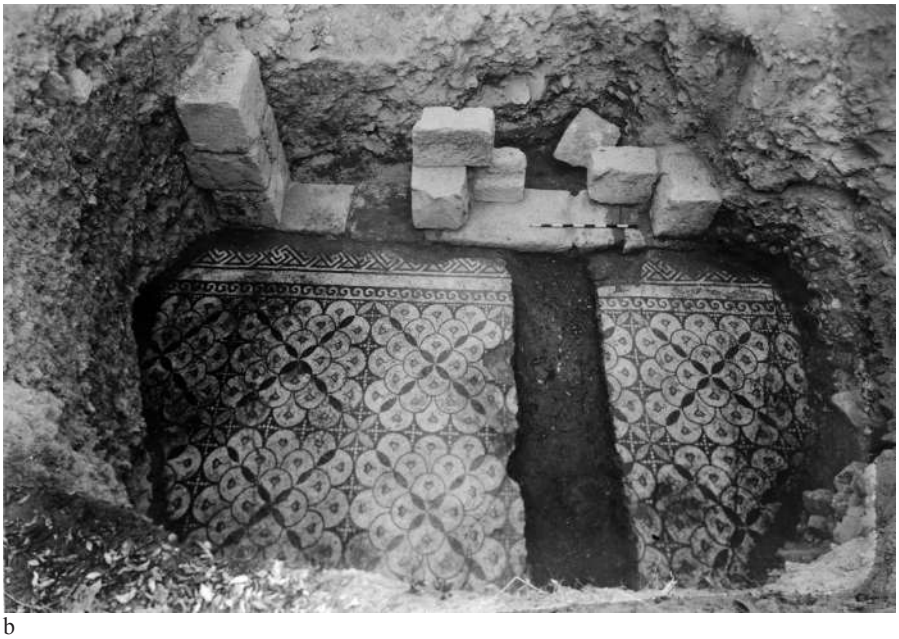

b

Figure 1
(a) Site plan of "Antioch and Vicinity" showing excavations and the location of Magdouh Mosaic.
(b) Excavation view of the mosaic floor, Magdouh Mosaic, View to North.

It has bisected panels; one half is displayed in the Hatay Archaeological Museum in Antakya, Turkey (Fig. 2a)[5] and the other half is in Princeton University Archaeological Archives in the USA. It is a type of pattern formed from intersecting circles and triangular parts of scale patterns. Although the circular pattern is common among mosaics worldwide, this particular pattern is unique to the Roman region of Syria, which partly includes the Mediterranean coastline from north to south (Fig. 2b). Almost all examples in this region can be found in different structures, such as synagogues, churches, baths and pavements dated to between the fifth and seventh centuries[6]. Although the patterns show differences in terms of color, size and structure, it keeps its unique circular design.

Similar specific patterns and simpler versions were also used over several decades. This pattern was used during the Hellenistic period and was a common design throughout the Roman period (Nassar 2010: 193). Compared to other circular patterns, the Magdouh Mosaic is more complex and has more visual

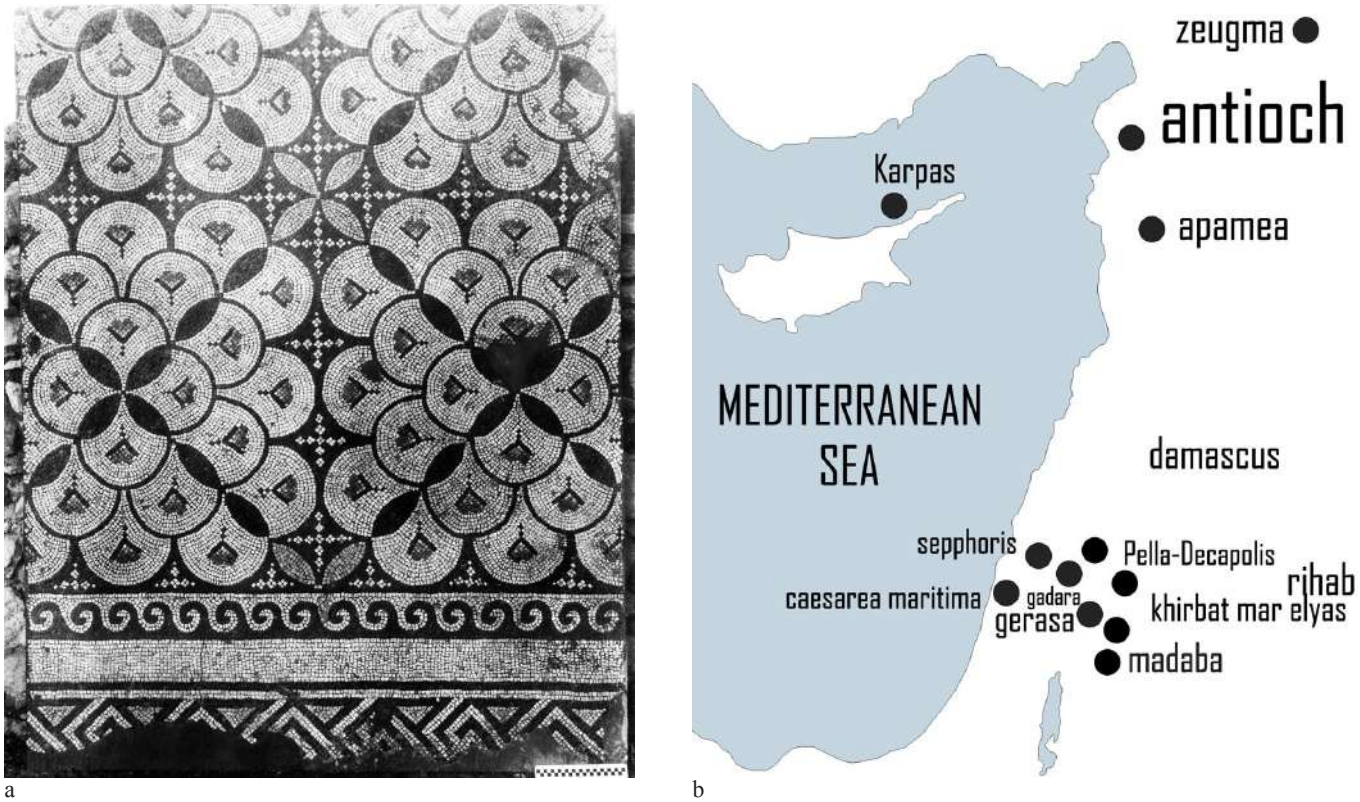
2 Campbell (1988), catalogued the whole Antioch Mosaics with some revised dating after Levi (1947), and Cimok (2000) presented mosaic pavements displayed in the Hatay Archaeological Museum, Turkey. Antioch mosaics were also studied by Kondoleon 2000; Becker - Kondoleon 2005, in general. Unless stated otherwise, the dates given in this study for Antioch mosaics are those of Levi 1947.

3 Princeton University Archaeological Archives, Antioch II, plan 1, accessed July 15, 2019, http://vrc.princeton.edu/archives/items/show/14543.

4 Levi II, plate CXXXVIIa, September 3 1937, Princeton University Archaeological Archives, accessed May 22, 2018, http://vrc.princeton.edu/archives/items/show/15522.

5 Antioch III, plate 47, September 22 1937, Antioch Museum Archives, accessed May 22, 2018, http://vrc.princeton.edu/archives/items/show/15849.

6 The same mosaic pattern is found in Zeugma, Apamea Synagogue, Hisham's Palace, House of Aion (500), Magdouh Mosaic (500–525), Diocaesarea or Sepphoris (Zippori), Caesarea Maritima, Basilica of Agias Trias, Karpas Peninsula, Cyprus 6th century, Khirbat Mar Elyas, Church of Saint George in Mount Nebo (535/6), Church of Dayr (557/8), Rihab in the Church of Saint Menas (635), Decapolis church at Pella, Baths of Herakleides at Gadara.

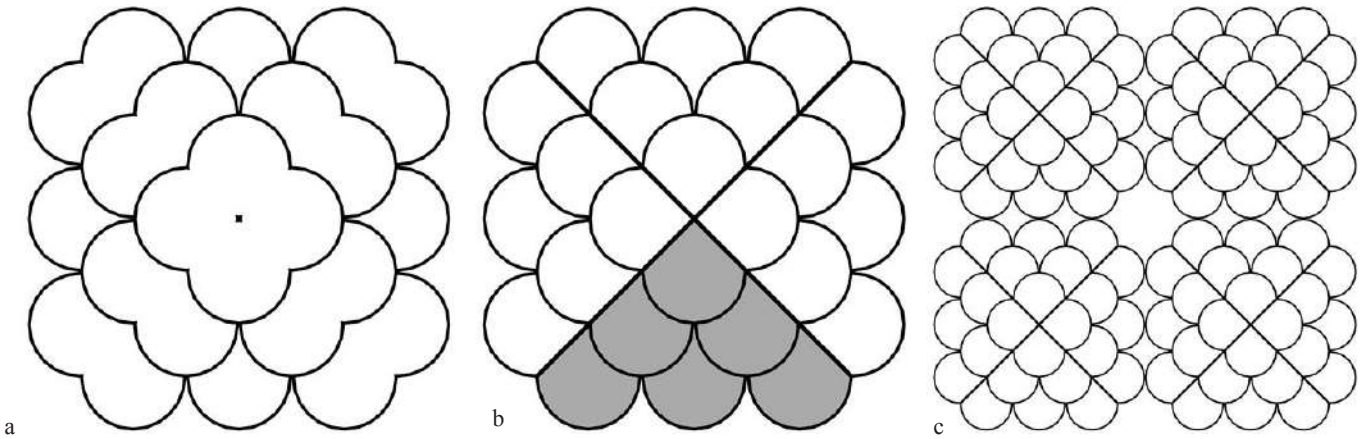


a b

Figure 2
(a) Raised mosaic panel A, Magdouh Mosaic.
(b) Map of locations that has the examples of the Magdouh Mosaic in the region.

content that make it hard to describe easily. At first glance, the clusters of circles in pyramid form come to the forefront and afterwards the whole pattern becomes an array of these clusters. For this reason, some researchers describe this as a single cluster, while others describe the pattern as a whole. For instance, borrowing Biebel's term "scalloped square" (Biebel 1938: 335), Levi describes the Magdouh Mosaic as a square of scales (Levi 1947: 444). Hachlili describes the Magdouh Mosaic as both a "scalloped square with a dot in its center" (Fig. 3a) and as "multi-lobed scales" (Fig. 3b) (Hachlili 1998: 202-203). Nassar and Sabbagh describe the overall pattern as "tangent multi-lobed scales" with spindles radiating in four directions from a central quadrilobe (Nassar - Sabbagh 2016: 548) (Fig. 3c). The pattern is also identified as "the scalloped square with floret pattern" (Balderstone 2009: 96).

Figure 3
(a) Magdouh Mosaic as a "scalloped square with a dot in its center".
(b) Pattern of "multi-lobed scales".
(c) Pattern of "tangent multi-lobed scales".



a b c

Figure 4
(a) "Quatrefoil petals" of four intersecting circles with the four lens-shaped regions. (b) Pattern generated by the four lens-shaped regions.

The simplest version of this pattern is also called "quatrefoil petals" with four intersecting circles forming a quadrilobe scale, where the small crosslets are placed in the spaces between the four petals (Nassar - Sabbagh 2016: 191) (Fig. 4a). Such a quatrefoil pattern is known to have been used over several decades. Moreover, there are type of mosaic patterns that are derived from the "cruciferous flower" using only the area of the four lens-shaped regions (Fig. 4b) as in Terrace House 2 at Ephesus in Turkey, which is dated to the late third / early fourth century AD (al-Muheisen - Nassar 2014: 98).

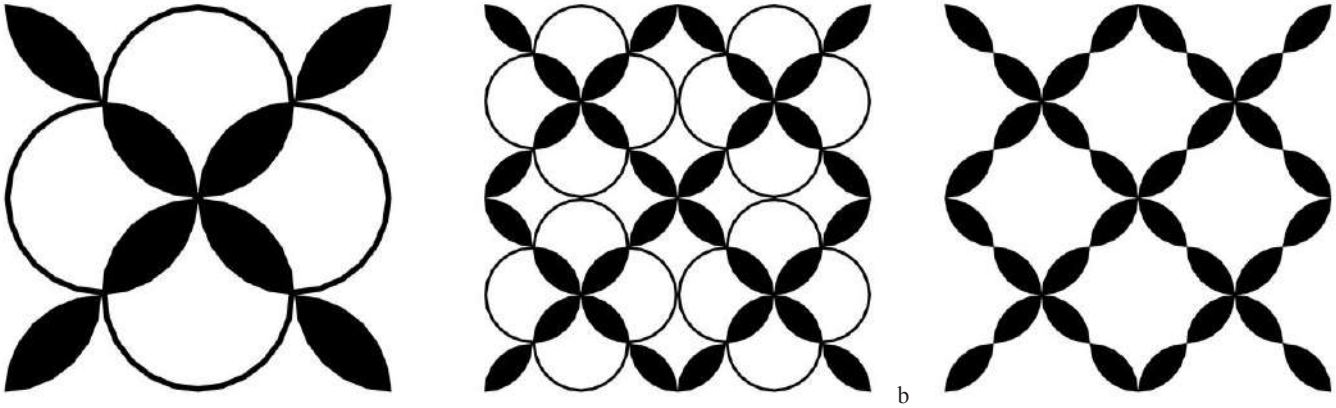
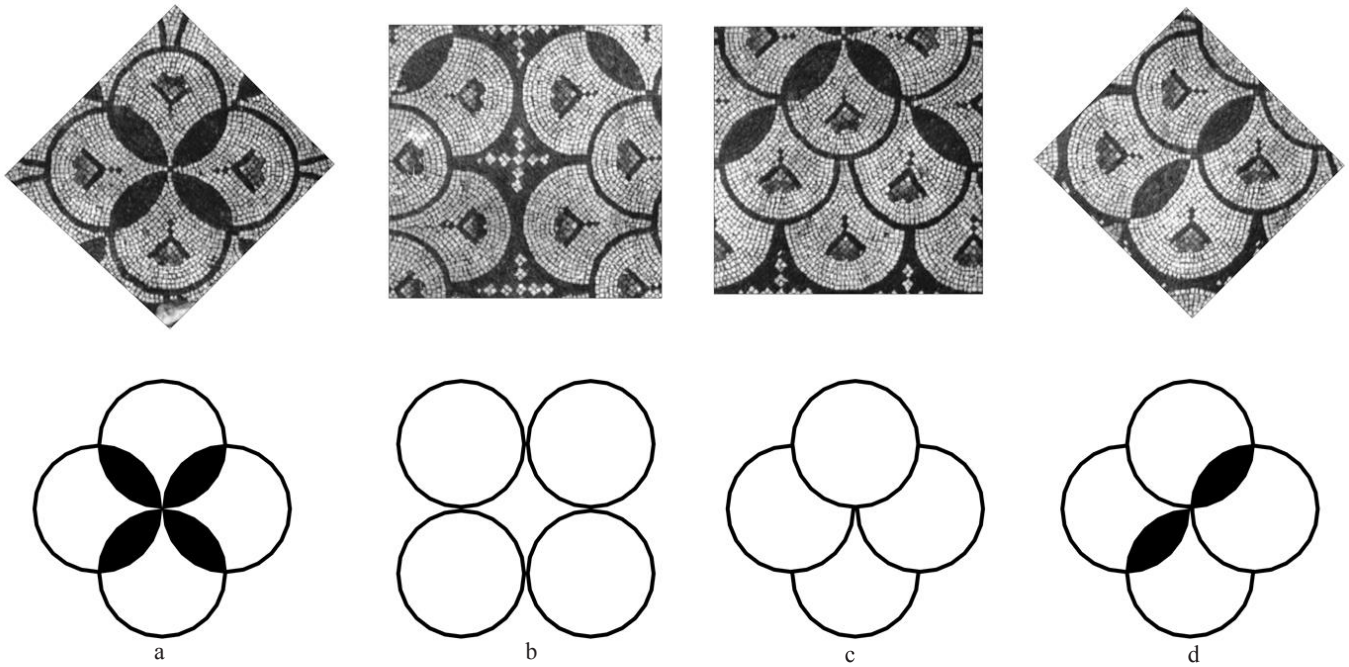


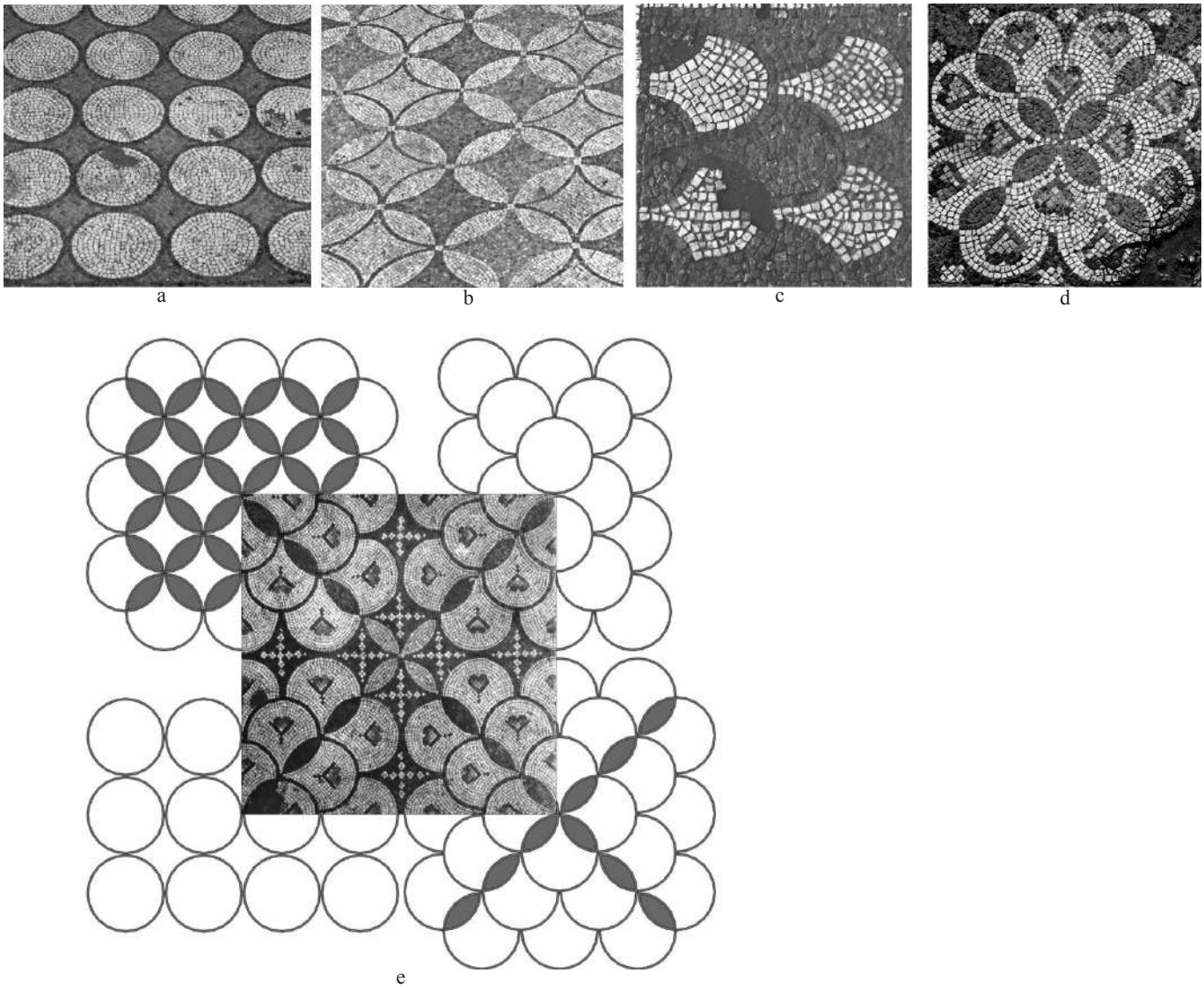
Figure 5
(a) Four intersecting circles at the top layer of the pattern. (b) Four tangent circles at the bottom layer. (c) Two tangent scales at the middle layer are tangent to the circles at the top and bottom layers. (d) Pairs of intersecting circles are tangent at different layers.

When the Magdouh Mosaic is observed in this context, it can be said that the greater the number of layers, the more the pattern becomes legible. The increasing number of layers makes the fourfold relationship of circles come to the fore in the pattern. While the first four intersect each other at the top layer (Fig. 5a), the other four become a tangent at the bottom layer (Fig. 5b). Furthermore, two tangent circles at the middle layer are tangent to the circles at the top and bottom layers (Fig. 5c) as well. In addition, the two intersecting circles at each layer are tangent to the other pairs of intersecting circles and likewise extend in four directions (Fig. 5d).



Such relationships suggested by layers in the Magdouh Mosaic can be distinguished by the broken and continuous curves of the circles. Mosaic examples using such effects can also be observed in other types of patterns of overlapping circles found separately in Antioch. The geometric pattern from the floor of Room 4 of the Barracks (Fig. 6a)[7] is an array featuring square packing of tangent circles, while the other one in Room 2 of the House of the Bird Rinceau (Fig. 6b)[8] gives the effect of intersecting circles. The pattern that is composed of fan-shaped motifs in the central field panel at the west edge of Bath C, Room 51 (Fig. 6c)[9] gives an effect of stacking circles, which is also known as imbricated scales in literature. To conclude, the complex pattern of overlapping circles in the Magdouh Mosaic is also a four-layer version of the one found on the floor of Room 2 of the House of the Bird Rinceau in Antioch (Fig. 6d)[10] suggesting a combination of each of the three patterns in one (Fig. 6e).

Figure 6
(a) Detail of geometric mosaic in Room 4, Barracks. (b) Mosaic floor of Room 2 with geometric overlapping circles, House of the Bird-Rinceau. (c) Central field panel at west edge, Bath C, Room 51. (d)Detail of geometric mosaic squares in Room 2, House of the Bird-Rinceau. (e) Magdouh Mosaic as a combination of each of the three patterns in one example.



7 Levi II, plate CXXIXc, November 27 1934, Princeton University Archaeological Archives, accessed August 2, 2018, http://vrc.princeton.edu/archives/items/show/14087

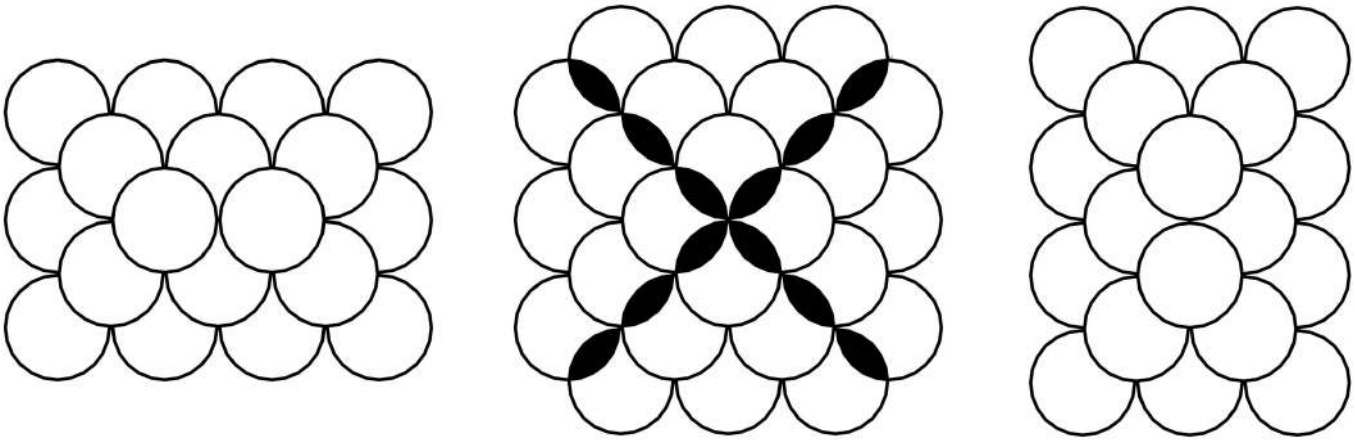
8 October 17 1934, Princeton University Archaeological Archives, accessed May 22, 2018, http://vrc.princeton.edu/archives/items/show/13963

9 Levi II, plate CXIXe, Princeton University Archaeological Archives, accessed May 22, 2018, http://vrc.princeton.edu/archives/items/show/13245

10 Levi II, plate CXXXVIIIa, September 28 1934, Princeton University Archaeological Archives, accessed August 2, 2018, http://vrc.princeton.edu/archives/items/show/13886

Figure 7
Intersection of a cluster of a three-layered rectangular array of square packed circles at 90 degrees.

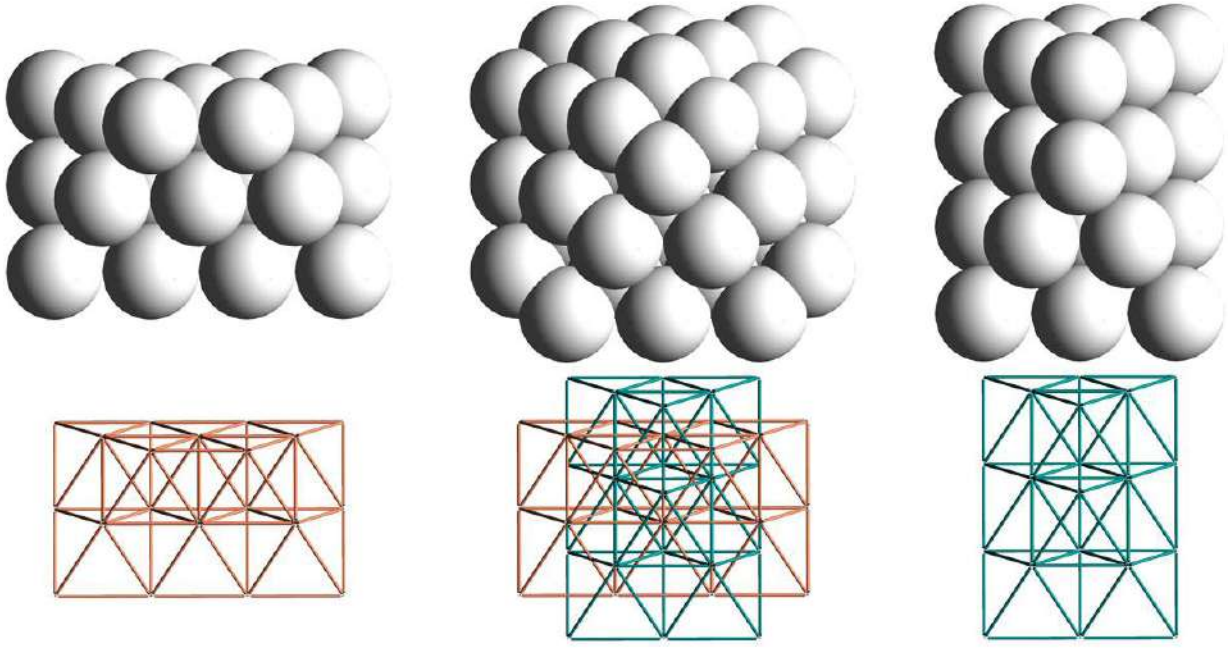
The plane geometry of the Magdouh Mosaic can be simply defined as the intersection of a multilayered, rectangular array of square packed overlapping circles where each one is centered right above the gap between the adjacent circles beneath. In the case of the Magdouh Mosaic, the layer at the bottom is an array of 4×3 tangent circles, while the middle one is a 3×2 array. The layer at the top is the intersection of two pairs of tangent circles at 90° at the tangent point (Fig. 7).



The 3D Geometry of the Magdouh Mosaic

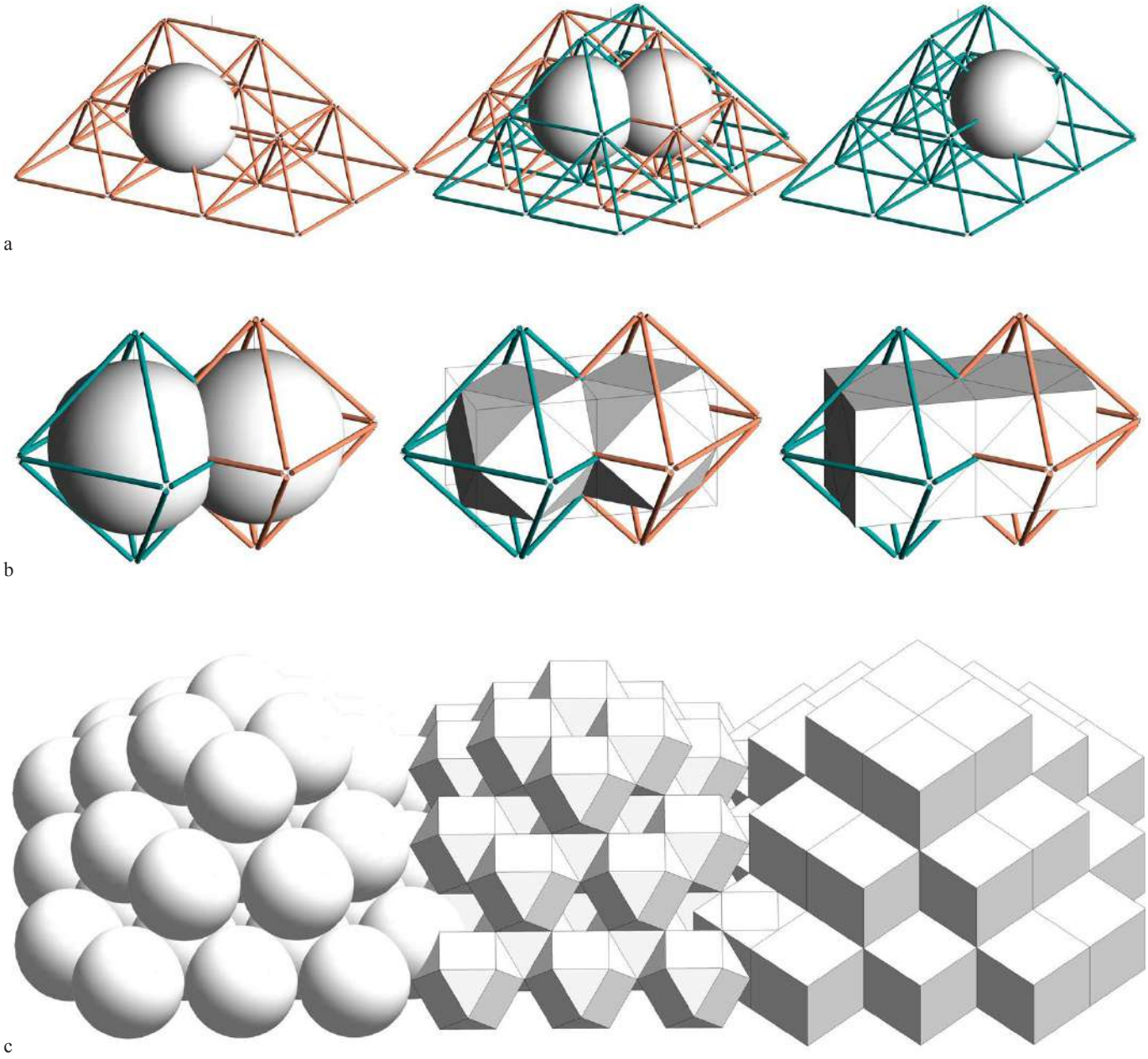
When both the content and configuration is extended into three dimensions, the intersection of both the packing of spheres or its lattice at 90 degrees gives the overall 3D structure of the Magdouh Mosaic. Here, the packing of spheres gives a cubic close packed structure, also known as face-centered cubic packing, in which each layer fits right into the gaps of the other layers both above and below it. Therefore, the coordination number of each sphere is 12 since it is tangent with 12 other spheres around it (Fig. 8). When the centers of the spheres are joined by lines, they constitute an array of equilateral triangles in four directions that would generate either a tetrahedron completely surrounded by four octahedra sharing their faces, or an octahedron completely surrounded by eight tetrahedra sharing their faces (Kappraff 2002: 350).

Figure 8
3D geometry of the Magdouh Mosaic as the intersection of identical clusters of spheres at 90 degrees and their space frame.



In close cubic packing of spheres, the spheres not only generate the lattice of a tetrahedron and an octahedron, but also bisect the edges of either, defining another cuboctahedron and octahedron lattice. In addition, the intersection of close cubic packing of spheres at right angles also gives the vertices of further cuboctahedra and octahedra. Therefore, either case suggests the packing of cuboctahedra with octahedral voids (Fig. 9a). Moreover, if the cuboctahedron is replaced by a sphere inside the cube, it becomes a union of a cube and a sphere. The intersection of both gives circles tangent at the midpoint of the edges of the cube that defines the vertices of a cuboctahedron (Fig. 9b). Thus, such a packing of intersecting spheres suggests not only the packing of cuboctahedra but packing of cubes as well. Thus, the cuboctahedron in the geometry of the Magdouh Mosaic can also be explained as a polyhedron that mediates between the sphere and the cube (Fig. 9c).

Figure 9
(a) Spheres bisecting the lattice and the pairs of spheres intersecting at 90 degrees in the intersecting lattice. (b) Packing of intersecting spheres that resembles the packing of both cuboctahedra and cubes. (c) Cluster of spheres that shows packing of both cuboctahedra and cubes in the Magdouh Mosaic.



The geometrical relationship among these solids can be explained best by the unique property of the cuboctahedron, which is the congruency of its edge length to its radius length. Since the radius of the cuboctahedron is also identical to the radius of the sphere circumscribed by it, the square root ($\sqrt{2}$) of the length of the diagonal gives the edge length of the cube in which it is imbedded. Moreover, if a cuboctahedron is replaced by a sphere inside the cube, the edge of the cube is the chord length of the intersecting spheres. In that case, the sagitta of a chord[11], which is perpendicular from the midpoint of the arc's chord to the arc itself – as the height of a minor arc or segment – is $(2-\sqrt{2})/2$. The multiplication of the length of the sagitta by two gives the length of the intersection of the spheres which is $2-\sqrt{2}$ (Fig. 10).

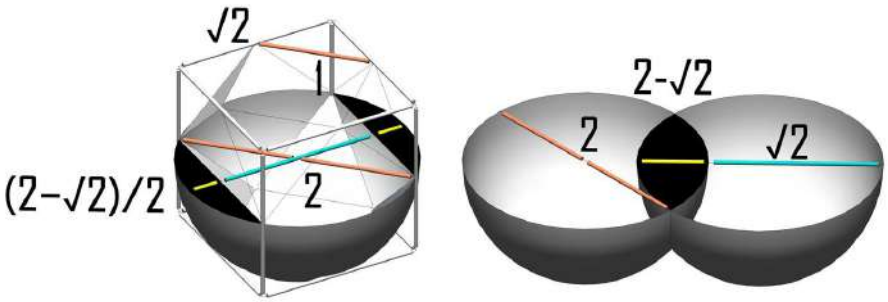


Figure 10
Dimensions showing the relationship between the sphere, cube and cuboctahedron.

The pattern of the Magdouh Mosaic is not just composed of overlapping circles, but also of the line segments that radiate from the centers of the circles through the layout of the pattern. The angle and direction of these lines match the orthogonal projection of the lattice generated by packing of tetrahedra (Fig. 11a). In other words, the hemisphere with four tetrahedra inside it represents a half of not only the octahemioctahedron, but the stella octangula as well. Therefore, the geometric content of the Magdouh Mosaic can also be explained as packing of stella octangula produced by the intersection of each pair of spheres in such a packing (Fig. 11b).

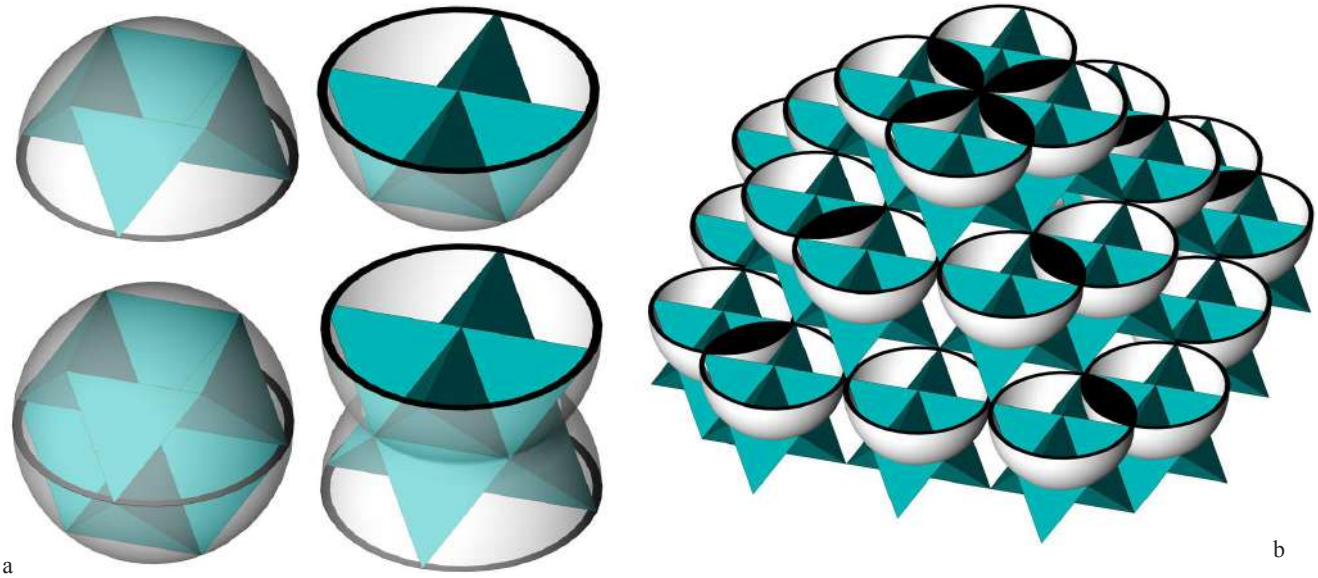
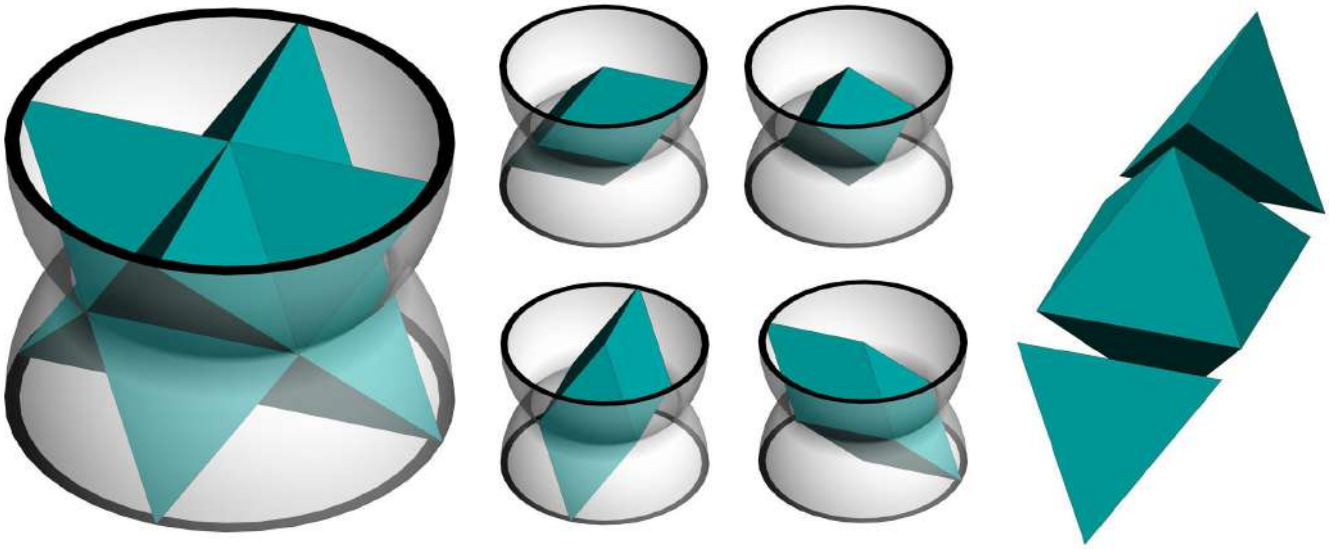


Figure 11
(a) Hemisphere with four tetrahedra inside it that represents a half of both the octahemioctahedron and stella octangula. (b) Packing of stella octangula inside the packing of hemispheres.

11 The sagitta is a line segment drawn perpendicular to a chord between the midpoint of that chord and the arc of the circle (Concise Dictionary of Mathematics 2013: 81).

In such a geometrical context, the Magdouh Mosaic also suggests the packing of rhombohedra, since the stella octangula can be dissected into four rhombohedra where an octahedron represents the region of intersection with eight regular tetrahedra attached on opposite faces (Fig. 12a). In that case, such a rhombohedron can be decomposed into two equal regular tetrahedra and a regular octahedron (Fig. 12 b).



a b

Figure 12
(a) Dissection of stellaoctangula into four rhombohedra four rhombohedra.
(b) Dissection of rhombohedron into an octahedron and two tetrahedra.

This rhombohedron, which is a special kind of parallelepiped, can fill a space represented by a tetrahedral–octahedral honeycomb, since the dihedral angles of both (70°32' and 109°28') are supplementary. In other words, it is a regular octahedron augmented by two regular tetrahedra to give a trigonal trapezohedron, which is formed by the six congruent 60-degree rhombic faces (Fig. 13a). Being the smallest possible basic three-dimensional unit cell, it can fill the entire space only by translation on three axes of the cubic closed packed spheres (Williams 1979: 133). Likewise, packing of 60-degree rhombohedra defines the three rotational symmetrical axes of the cube, which are the edge, face-diagonal, and body-diagonal directions (Fig. 13a). Here, the rhombohedron is the primitive-cell, which fills only one fourth of the conventional cubic cell that has a volume a^3 (Blakemore 1985: 27) (Fig. 13a). The geometric relation between the primitive cell and the conventional cell can be displayed by a rhombohedron inserted in a cubic frame. The intersection of this combination with the shell, which is generated by the union of two hemispheres, reveals the unit cell that would explain the geometry Magdouh Mosaic in third dimension further (Fig. 13b). In that case, each circle becomes a hemisphere containing a tetrahedron and a pyramid that is half octahedron. Furthermore, this geometric form appears as an oblique equilateral triangular prism inserted in a hemisphere. In addition, the "Y" figure at the center of each circle in Magdough Mosaic comes into view as the edges of this unit cell that meets at the vertex that sits right on the body center of the sphere (Fig. 13b). In this context, the cluster of packing of circles in the mosaic corresponds to the square-based pyramidal ball packing in which the top halves of the balls are removed (Fig. 13c). Corollary, the pattern of circles in the Magdouh Mosaic becomes the top view of this 3D structure (Fig. 13d)[12].

12 Raised mosaic panel B, Levi II, plate CXXXVIIb, September 22 1937, Princeton University Archaeological Archives, accessed July 18, 2019, http://vrc.princeton.edu/archives/items/show/15848

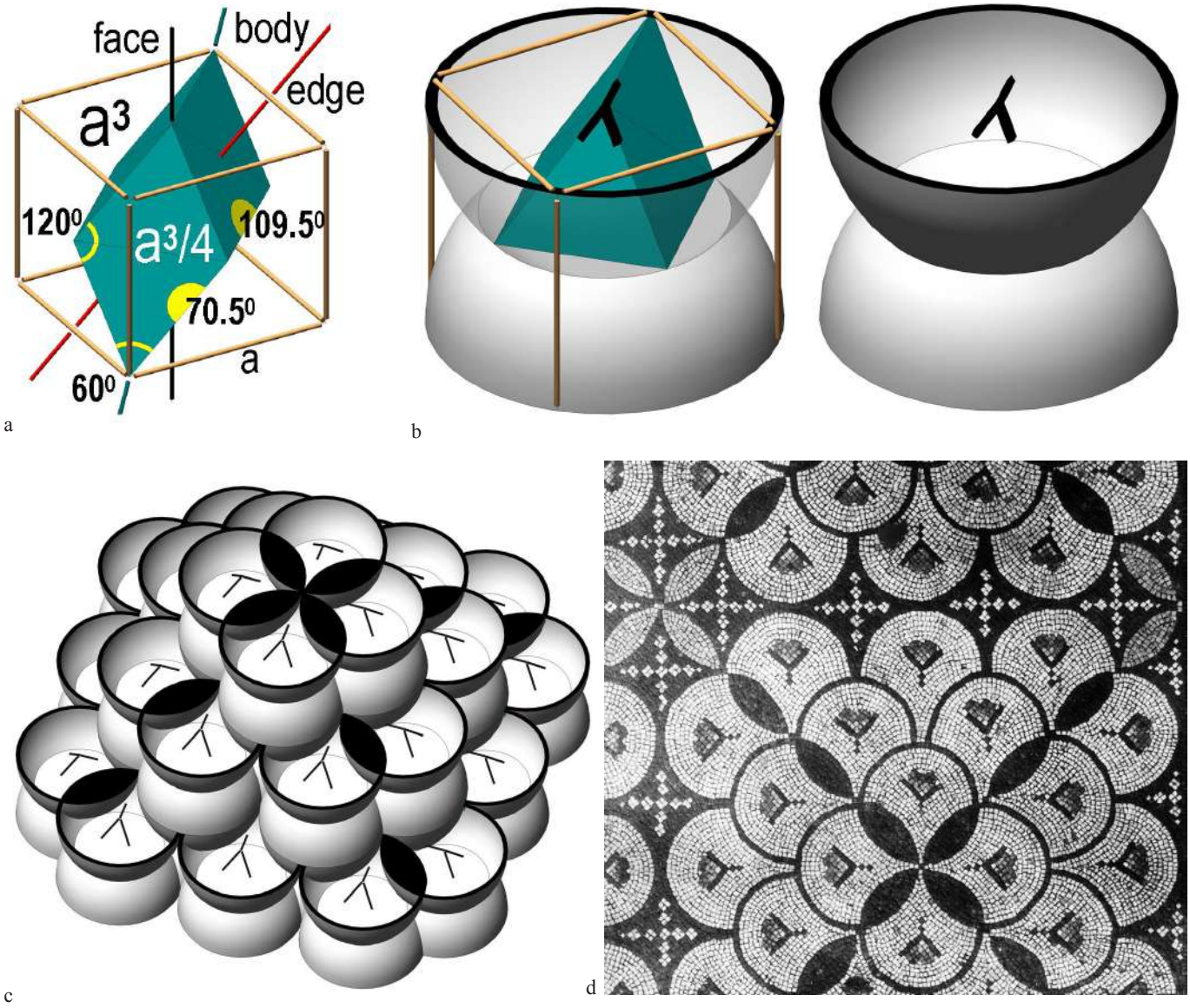


Figure 13
(a) Geometrical properties of a rhombohedron. (b) Unit cell of the mosaic pattern. (c) Square-based pyramidal unit cell packing. (d) Magdouh Mosaic as the top view of the unit cell packing.

Conclusion

In this study, the complex relations of overlapping circles in the Magdouh Mosaic are analyzed by extending them to three dimensions. In that case, the plane geometry of the Magdouh Mosaic produces a square-based pyramidal cluster of spheres generated by the intersection of the close packing of spheres at 90 degrees that defines space filling tetrahedral–octahedral honeycomb structure. In this structure, both octahemioctahedron and stella octangula appears as primary polyhedra that mediate between the sphere and the cube. The intersection spheres at 90 degrees in three directions, in which the length of the intersection is $2-\sqrt{2}$, produces hemispheres that contains four tetrahedra that appears as half of either octahemioctahedron or the stella octangula. Accordingly, the sphere contains an octahemioctahedron, while intersecting hemispheres cover the stella octangula in this structure. The latter configuration also suggests space-filling rhombohedra, since the stella octangula can be dissected into four rhombohedra. Moreover, bisection of rhombohedron gives an oblique equilateral triangle prism, which is a union of tetrahedron and half octahedron, inserted in each

hemisphere. This figure outlines the primary building block of the space filling structure that is represented by a square-based pyramidal cluster of intersecting spheres. The overall outcome of this study shows that examples of geometric mosaics are essential materials that could help to investigate the mathematical content of ancient mosaics further.

Acknowledgement

All photographs and images are by the authors except for the photos of the mosaics from Antioch published with the reprint permission kindly granted by Antioch Expedition Archives, Department of Art and Archaeology, Princeton University.

Bibliography – Kaynaklar

al-Muheisen - Nassar 2014 Z. al-Muheisen - M. Nassar. "Geometric Mosaic Pavements at Ras ed-Deir, Jordan", GrRomByzSt 54, 1, 87–104.

Balderstone 2009 S. Balderstone, "A New View of the Pella Churches in Terms of Dating and Analysis: The Typological Context", Levant 41, 1, 93-106.

Barsanti 2012 C. Barsanti, "The Fate of the Antioch Mosaic Pavements: Some Reflections", JMR 5, 25-42.

Becker - Kondoleon 2005 L. Becker - C. Kondoleon, The Arts of Antioch: Art Historical and Scientific Approaches to Roman Mosaics and a Catalogue of the Worcester Art Museum Antioch Collection, Worcester Art Museum, Worcester, MA.

Biebel 1938 F. M. Biebel, "Mosaics", C.H. Kraeling (ed.), Gerasa, City of the Decapolis, American Schools of Oriental Research, New Haven (CT), 297-352.

Blakemore 1985 J. S. Blakemore, Solid State Physics, Cambridge.

Campbell 1988 S. Campbell, The Mosaics of Antioch, Pontifical Institute of Mediaeval Studies, Toronto.

Cimok 2000 F. Cimok, Antioch Mosaics, İstanbul.

Concise Dictionary of Mathematics 2013 Concise Dictionary of Mathematics, New Delhi.

Dunbabin 1989 K. M. D. Dunbabin, "Roman and Byzantine Mosaics in the Eastern Mediterranean", JRA 2, 313-318.

Elderkin 1934 G. W. Elderkin, Antioch on the Orontes I: The Excavations of 1932, Princeton.

Hachlili 1998 R. Hachlili, Ancient Jewish Art and Archeology in the Diaspora, Leiden, Boston, Köln.

Haynes 1951 I. E. Haynes, "Antioch Mosaic Pavements by Doro Levi", Antiquity 25, 98, 111-112.

Hopkins 1948 C. Hopkins, "Antioch Mosaic Pavements", JNES 7, 2, 91-97.

Kappraff 2002 J. Kappraff, Connections: The Geometric Bridge Between Art and Science 2nd Edition, World Scientific, Singapore.

Kondoleon 2000 C. Kondoleon, "Mosaics of Antioch", C. Kondoleon (ed.), Antioch: The Lost Ancient City, Princeton, 63–77.

Levi 1947 D. Levi, Antioch Mosaic Pavements, Princeton.

Nassar 2010 M. Nassar, "Geometric Mosaic Pavements of Yasileh in Jordan", PEQ 142, 3, 182–198.

Nassar - Sabbagh 2016 M. Nassar - A. Sabbagh, "The Geometric Mosaics at Khirbat Mar Elyas: A Comparative Study", GrRomByzSt 56, 3, 528–555.

Parzysz 2009 B. Parzysz, "Using Key Diagrams to Design and Construct Roman Geometric Mosaics?", NNJ 11, 2, 273-288.

Stillwell 1938 R. Stillwell, Antioch on the Orontes II: The Excavations of 1933-1936, Princeton.

Stillwell 1941 R. Stillwell, Antioch on the Orontes III: The Excavations of 1937-1939, Princeton.

Williams 1979 R. Williams, The Geometrical Foundation of Natural Structure a Source Book of Design, New York.

DOI: 10.26658/jmr.614880

JMR 12, 2019 119-132

The Gold in the Mosaics of Ravenna

Ravenna Mozaiklerinde Altın

Cetty MUSCOLINO*

(Received 19 December 2018, accepted after revision 08 August 2019)

Abstract

Ravenna, early Christian monuments and wall mosaics express the new ideology of Christian art. The tessellatum reveal that a large variety of materials and colours were used for the execution of the mosaics: glass, glass paste tesserae including those with silver and gold leaf, stone, ceramic, marble, and mother-of-pearl.

The beautiful materials are combined with skill and surprising chromatic sensitivity. The tesserae are cut in regular and consistent sizes for the base and others shaped ad hoc as if they were brushstrokes of glass.

From the first monuments (Mausoleum of Galla Placidia, Battistero Neoniano) to the second (Battistero Ariano, Sant'Apollinare Nuovo, San Vitale) we can see a change significative and interesting, from the nature represented in all her splendor and naturalism, (acanthus plants, floral candelabras, gardens of plants and flowers, viridarium, (herbs garden), we step by step leave the azure and the blue of the sky to pass to mosaics with golden background. Because the tesserae in gold are the best way, in this period, to show the light of the transcendence, and to show the glory of Christ, the power of the church, and in the monuments of Ravenna we have the most important evidence.

In many mosaic representations we can see with great clearness the polemical spirit of anti-Arianism, and a clear affirmation of Catholic Orthodoxy in the town where the Aryan Teodorico, had reigned for thirty years.

Many monuments of the V-VI century in Orient were destroyed in the ancient time for ideological and political reasons for this reason Ravenna is a privileged place to follow the changes ideological and stylistic.

Keywords: *Gold, light, early Christian monuments, wall mosaic, God.*

Öz

Ravenna, erken dönem Hıristiyan anıtları ve duvar mozaikleri Hıristiyan sanatının yeni ideolojisini ifade etmektedir. Tessellatum, mozaiklerin yapımında çok çeşitli malzeme ve renklerin kullanıldığını ortaya koymaktadır: Gümüş ve altın varak, taş, seramik, mermer ve sedefli olanlar da dahil olmak üzere cam, cam macunu tesseraları.

Güzel malzemeler beceri ve şaşırtıcı derecedeki renk hassasiyetiyle birleştirilmiştir. Tesseralar zemin için düzenli ve uygun boyutlarda kesilir ve diğerleri sanki camdan fırça darbeleri gibi özel şekillendirilirdi.

İlk anıtlardan (Galla Placidia Mozolesi, Battistero Neoniano) ikinciye (Battistero Ariano, Sant'Apollinare Nuovo, San Vitale), tüm ihtişam ve doğallıkla gösterilen doğa tasvirinden (akantus yaprakları, çiçekli şamdanlar, bitki ve çiçek bahçeleri, viridarium/yeşil bahçe gibi) adım adım uzaklaşılarak mavi gökyüzünden arka planı altından oluşturulmuş mozaiklere doğru anlamlı ve ilginç bir değişikliğe uğradığı görülebilmektedir. Çünkü altın tesseralar bu dönemde üstünlüğün ışığını göstermenin, Mesih'in ihtişamını ve kilisenin gücünü yansıtmanın en iyi yoludur ve Ravenna'daki anıtlar bunun en önemli kanıtıdır.

Pek çok mozaik sunumunda, anti-Arianizm'in tartışmalı ruhu ve Aryan Teodorico'nun otuz yıl boyunca hüküm sürdüğü kentte Katolik Ortodoksluğunun açık bir ifadesi görülebilmektedir.

Doğu'da V-VI. yüzyıllar arasına tarihlenen pek çok anıtın, antik dönemde ideolojik ve politik nedenlerden dolayı yıkılması nedeniyle Ravenna ideolojik ve stilistik değişikliklerin takip edilebileceği ayrıcalıklı bir yerdir.

Anahtar Kelimeler: *Altın, ışık, erken Hıristiyanlık anıtları, duvar mozaiği, Tanrı.*

* Cetty Muscolino, Ph.D., Ravenna, Italy. ORCID ID: https://orcid.org/0000-0001-7349-605X. E-mail: cetty.mu@gmail.com

The representation of images for educational purposes, despite some Old Testament oppositions and prohibitions, has been typical of Christianity since its beginnings and related to this the Fathers of the seventh ecumenical council proclaimed:

> "The tradition of creating images […] has existed since the time of the Apostles' preaching. The painting of icons is not an invention of painters, but on the contrary, is an established rule and tradition of the Catholic Church"[1].

From as early as the 4th century some of the Fathers of Church, such as Basil the Great, Gregory the Theologian, Gregory of Nyssa, John Chrysostom, state in their writings that images are an institution accepted in the Church. The great ascetic of Sinai St. Nilus (who died in 430 or 450) wrote to the prefect Olympiodorus that having built a church he wanted to embellish with different scenes and ornamental motifs:

> "Allow the painter's hand to fill the church with representations of the Old and New Testament so that illiterate people who cannot read the divine Scriptures, looking at the paintings, can remember the actions of those who served God with honesty, and be encouraged to emulate the very glorious virtues of blessed memory that lead to heaven being preferred over earth and what is invisible to visible"[2].

The new thematic content of early Christian art had to reflect a new attitude, a fundamentally different understanding of reality, so it not could use the old forms of ancient times, but it was necessary to develop a style with precise rules and nature to better express the new ideals. The illusory three-dimensional space is replaced by the reality of level surface, the relation between the figures and the objects becomes conventionally and symbolic, the image is reduced to the bare minimum and the figures are mainly represented head-on, facing the believers, because the intention is to show their inner state.

Having to free itself from any sensory fascination in order to express not the visible world, but that of the spirit, a precise and rigorous language was required because spiritual reality can be transmitted only through symbols. This symbolism of Christian art welcomes and works on the legacy of ancient Greece, Egypt, Syria and Asia Minor, giving it a holy character.

Since "what words communicate through hearing, paintings show silently, through representation"[3] the artist has the task of transforming all sensory suggestions and adapting them to the needs of the Christian dogma. In this way a new art was born, new both from the point of view of the content and of the form, making the revelation of the divine world accessible to the believers for contemplation and participation. Architecture, painting and music become means of communicating the essence of the Church and knowing God: art within holy structures is liturgical art because it matches the liturgy perfectly.

Frequent reference is made, in the description of the Orthodox saint's lives, to the light they give out, represented in works of art by the halo, the sign of inner splendor achieved with supreme glorification.

All the holy characters are marked by ordered and quiet movements that create

---

1 Acts of the Seventh Ecumenical Council, 6th session (Russian trad.) Kazan 1873: 469.

2 Saint Nilus, Epistole, in *Patrologia Graeca*, 79, col. 577.

3 Saint Basilio, Omelia 19 sui quaranta martiri di Sebaste, in *Patrologia Graeca*, 31, col. 509a.

Figure 1
Detail of vegetal gazebo, vault, Neonian Baptistery, Ravenna.

a harmonious and rhythmical combination, that is not broken by high notes, a sort of figurative litany.

The same calm and quietness also represent the elements of the vegetables and animal world sharing the same transfiguration and projection onto a higher dimension, not conditioned by time-space coordinates. In Ravenna, in a relatively short but very intense period of time, thanks to the strategic location due to the leading role which it gained as the capital of the Roman Empire with *the Augusta Galla Placidia*, then the royal residence of the Goth kingdom of Theodoric, and finally the Byzantine exarchate, extraordinary construction developments took place that turned it into one of the most unusual concentrations of late-ancient art and architecture.

In the prodigious mosaic textures, carried out thanks to the productive flow of artistic experience of Eastern and local workers that operated in the city from the 5th to the 6th century, there was the astonishing development of a new language and subsequently this translated into increasingly adherent forms that were in line with the new requirements.

From the representation that remind to a supernatural world, but which is visually still pervaded by the throbbing breath of nature, starry vaults, flashing flames, quiet gushing water courses in the mausoleum of *Galla Placidia* (Fig. 1), airy vegetable gazebos in the Baptistery of Neon (Fig. 2) -we will arrive to the uncontaminated clarity of gold-plate backgrounds. From a *paradeisos* animated by the rustling of the leafy branches we'll arrive to the dazzling manifestation of the divine dimension presented completely out of any space-time references.

Figure 2
Detail of a deer drinking from a spring, western lunette, Mausoleum of Galla Placidia, Ravenna.

Since the most ancient times gold, by virtue of its stability and brightness, has always been the metal distinguishing of the divine and of power, because its material value was emphasized by the enormous symbolic value.

The affirmation of the divine in terms of light is inseparably connected to the Byzantine mosaics of Ravenna and the targeted use of golden and silver foil pieces confirm it.

Leaving on side the aspects closely related to jewelry and to sumptuary arts, we will focus mainly on the presence of golden tiles on the wall mosaics of

Ravenna, seeking to show the strong intention, care and research the workers of the time dedicated in striving to achieve highly excellent results.

In Saint Andrew's Oratory (today called the Archiepiscopal Chapel and originally perhaps dedicated to Christ) built in the Theodoric times towards the end of the 5th century at Bishop Peter II' behest, the mosaic cycle, entirely in glassy paste, is enhanced by background built in golden tiles. In the small barrel vault atrium, that is covered with a fascinating mosaic representing a gold-plated ornamental carpet strewn with stylized flowers and birds, you read the following verses (Fig. 3):

> *Aut lux hic nata est//Aut capta//Hic libera regnat*. "The sunlight caught by the pieces is not, in this place, that which we are talking about (as on the contrary many believe), but rather it is the transcendent light shed by the Redeemers[4] mosaic figure, represented with the cross on his shoulder in the lunette above the entrance, next to the poem that celebrates it" (Casavecchia 2011: 65-73).

Figure 3
Detail of Christ warrior, Archiepiscopal (St.Andrew's) Chapel, Ravenna.

The four Evangelists and the four angels who are mosaicked on the small square sacellum next to the atrium are depicted as they hold the central disk with Christ's acronym and they recall the words of the Book of Revelations:

> "After this, I saw four angels standing at the four corners of the earth,

4 Christ, represented as the winner, has his head surrounded by a cross-shaped halo, he wears soldier's armour, in his left hand he holds the cross and with his right hand the book opened at John's text *"ego sum via, veritas et vita"*; he steps on the lion and on the serpent, an explicit anti-Arian message possible thanks to the climate of tolerance in king Theodoric times.

> holding the four winds, so they did not blow on the earth, or on the sea, or on any tree. Then I saw another angel coming up from the east, having the seal of the living God. And he cried with a loud voice to the four angels who had been given power to devastate the earth and the sea, "Do not devastate either earth, or the sea, or the trees, until have put our God's seal on his servants' foreheads" (Apocalisse 7, 1-4.).

The seal we are talking about is nothing else than "the light of God, written in the middle of the vault on the disk held by the four angels placed in the four cardinals points of the room" (Casavecchia 2011: 67).

The central monogram is both a structural and a spiritual key to the mosaic decoration.

According to Saint Augustine man draws closer to God through an illumination, or through the help of a particular cognitive faculty, so light[5] is that *scintilla animae*, the divine element of each man.

The association between light and the divine is inherited by the Fathers of the Church from Greek philosophy, as Aristotle explains well in *The Treaty of the soul*, where he states that God is light and the source of light.

Moving on the gold–plated mosaic textures, and bearing in mind the considerations we have made so far, when the mosaic pieces were struck by the light and they refracted it, these reflections were interpreted as a spiritual essence penetrating the material.

The use of golden pieces gives the characters an appearance of transcendence and it expresses the concept of holiness and glory, as you can see in the processions of the Holy Martyrs and of the Holy Virgins (Fig. 4) in St. Apollinare Nuovo, where the use of gold in the background, in haloes and in clothes, together with the dematerialization of the figures due to the lack of features, assumes a transfiguring function.

Figure 4
Detail of the procession of the Virgins, dating to the period of Bishop Agnellus, north wall, Sant'Apollinare Nuovo, Ravenna.

5 Aristotle attributes light with the characteristic of being the fifth element, consisting of fluid and fine matter that surrounds and encompasses the universe of entitles made up of the four primordial elements: air, water, fire and earth.

The theory of the Virgins on the west wall is particularly striking, inserted in place of previous purified representations, which advance towards the Virgin on the throne coming out of the *Civitas Classis* (Fig. 5). The tender complexions, built on the outside with pinky limestone pieces become brighter toward the center thanks the presence of white glass pieces. The eyes, with pupils defined by a dark purple glass piece, are made of neat rows of light and white purple pieces and they flaunt amazing steadiness. The light tone variations allude imperceptibly to the plasticity of the faces, almost two-dimensional and defined more by the boundary lines of the drawing than by light and shade effects. The dark purple, yellow, gold and terracotta glass hair are adorned with precious jewels in golden pieces and orange and green glassy paste in line with what St. John of Damascene (675-741) stated about martyrs:" They are represented in the state of bliss, covered with the divine splendor which they have after martyrdom. Portraying them in the bodily state had on hearth means denying them this honor that they enjoy before God since they are dwelling near him" (Grabar 1946: 63) (Fig. 6).

Figure 5
General view of the north wall of Sant'Apollinare Nuovo, Ravenna.

Figure 6
Detail of St Daria, dating to the period of Bishop Agnellus, procession of the Virgins, north wall, Sant'Apollinare Nuovo, Ravenna.

So in the 6th century in Ravenna the golden pieces, which were a symbol of divine light, in addition to the large areas of the backgrounds, penetrate the characters and scenes to accentuate the transcendent character, because the gold reflects the light more than all the other metals (Fiorentini Roncuzzi 1993: 125-131).

In the main mosaic cycles of the city the change from backgrounds in blue glass pastes to those in golden pieces should be considered with particular attention, as it is an extremely significant and illuminating fact.

The two baptisteries, that of the Orthodox called the Baptistery of Neon for the important renovations in Bishop Neon times (450-475), and that of Arian, built at the behest of Theodoric (493-526), express in a clear manner the wind of change albeit in the tight dialectic continuity, the second one making inspiration from the first one both from a formal and iconographic point of view.

In addition to the mosaic, specific references and cross-references between the two monuments are also to be found in the frescoes of the windows arches that pretend to be precious marble, that are very abraded in the Neon Baptistery and almost completely lost in the Arian baptistery, with the exception of the few surviving vestiges which show exceptional quality of matter and denote the technical skill of the artists.

But what distance there is between the colloquial spontaneity of the Orthodox Baptistery and the imperturbable brightness of the second! (Figs. 7-8).

Figure 7
Detail of vault, Neonian Baptistery, Ravenna.

The tendency to represent absolute transcendence, completely uncontaminated by the impressionable world, was a strong incentive to improve the production technique of golden foil pieces that will determine aesthetically different results by showing different morphologies in the passing of time (Carbonara et al. 2000: 709-718).

In the most ancient monuments golden pieces used both for the background and for the holy characters' haloes and for many iconographic details, are of a particular typology that will then disappear as time goes by to leave way for a more intense shade of gold that is more satisfactory from an aesthetical point of view. This transformation-improvement, concerning both the structure of the pieces and the way they are cut, had already started and been put to us by the workers who worked in St. Apollinare Nuovo, Theodoric's palatine church, but was to reach its peak in the Justinianian factories in San Vitale and St. Apollinare in Classe.

Figure 8
Detail of vault, Arian Baptistery, Ravenna.

It should be immediately pointed out that unlike all other mosaic pieces consisting of a single element made from glass or stone material the metal foil pieces (both in gold and in silver) have a composite structure, almost like a sandwich, which includes basic transparent glass, metallic laminate and very thin upper glass, called thin card, which protects the metallic laminate.

During the many restoration works carried out from the 1990's the presence of three different types of golden pieces, was detected on the mosaic surfaces, which have been analyzed.

In all the most ancient architectures (Galla Placidia, Baptistery of Neon, Arian Baptistery, Archiepiscopal Chapel), the golden pieces are characterized by a transparent glassy paste support, of a cold tone verging on green and full of gaseous bubbles which tend to mat the glass, by a metallic laminate crossed by numerous clefts and by thin card with numerous microcrackings.

The first gold will be joined over time by another that will then replace it definitively. The latter is characterized by a transparent glassy paste support, of a warm tone virging on amber, crossed by very few bubbles, and metallic laminate homogeneously laid and a compact and transparent card. The transition from one kind of gold to the other can be found in a clear and unequivocal way in the Basilica of St. Apollinare Nuovo, which, in terms of golden textures, shares with the oldest buildings of Ravenna the gold with a green support but it also represents, due to the political events that involved it, the subsequent Byzantine phase characterized by gold pieces with an amber glass support (Fig. 9).

You can find this new gold, with its warmer effect, in all areas introduced in the Agnelliano mosaic purge-renewal that reconciles the Church with Orthodox worship, but it had already appeared in some inserts of the Theodoric Palatium depicted on the southern wall and it is always used in the *Civitas Classis* on the northern wall.

Considering that the realization of the mosaics occurred from the top to the bottom it can be assumed that these areas were carried out when the two upper registers with Christological scene and haloed figures had already been completed. Therefore the change of the kind of gold could be due to a new

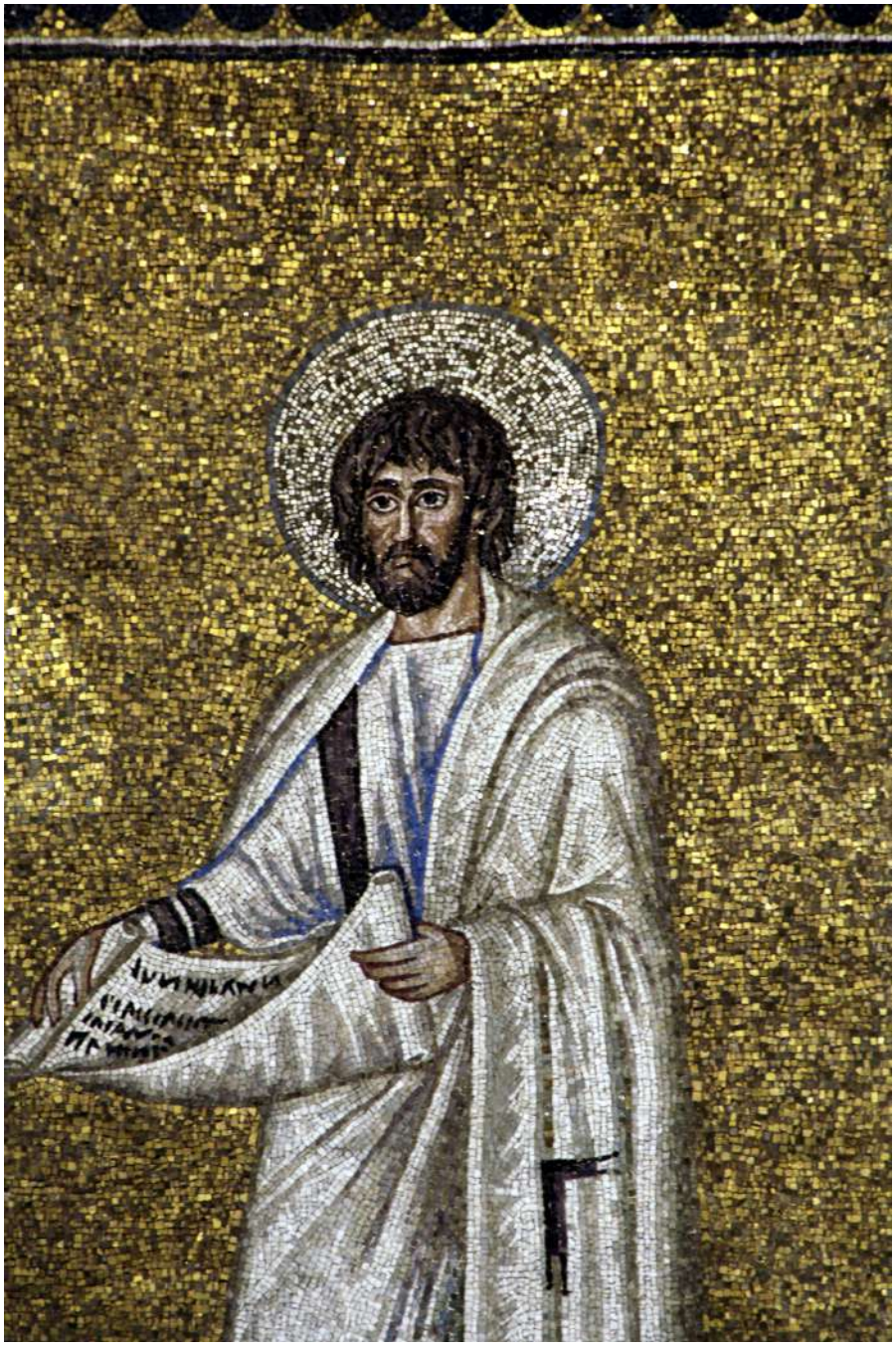


Figure 9
Detail of a prophet, dating to the period of Theodoric, south wall, second register, Sant'Apollinare Nuovo, Ravenna.

supply of materials that were aesthetically more appreciated[6].

Experimentation in the production of golden pieces will also create additional and third type of gold you can find in the Byzantine mosaic decorations of St. Vitale and St. Apollinare in Classe.

The Basilica of St. Vitale, where the sign of light-gold leads the faithful's gaze from the top of the presbyterial arch to the centre of the apsidal copper vessel, is

6 Recent studies on some samples of the mosaic tesserae of St. Apollinare Nuovo (Theodoric silver foil pieces, Theodoric golden foil pieces-Agnellian foil pieces) showed that while for the silver two glasses with different tones for the support (green) and for the card (yellow) were intentionally used, for the golden pieces colorless glass is better , and the golden leaf is in one case pure gold (Theodoric tesserae) and alloy with 3.7% of silver in one Theodoric sample and in one Agnellian sample. See Verità, Marco. Indagini analitiche delle tessere vitree a foglia d'oro e d'argento dai mosaici teodoriciani e agnelliani di Sant'Apollinare Nuovo (Muscolino et al. 2012: 128-134).

one of the most intact examples, a kind of pictorial demonstration of this theology of light.

This is the monument that defines par excellence the Byzantine identity in Italy, even beyond its chronological terms, as it summarizes the overall ideological and cultural situation.

At the entrance of the great presbyterial arch the austere, solemn and sometimes inviting Apostles' faces invite silence, but from the *Christ Pantocrator*, placed on the top, a gold plated line begins. The line crosses the presbytery vault and leads to Christ-Lamb who with his sacrifice deletes the darkness of sin and brings light, as John's Book of Revelation states:

> "Then he showed me a river of vivid water, clear as crystal, that came from God's throne to the Lamb. In the middle of the town square and on either side of the river there is a tree of life that gives twelve harvests and produces fruit every month; the leaves of the tree help to heal the nations. And there will be no more curses. The throne of God and the Lamb throne will be in the middle of it and his servants will worship him; they will see his face and will carry his name on their foreheads. There will be no more night and they will no longer need either the light of a lamp or sunlight, because the Lord God will give them light and they will reign forever and ever" (Apocalisse 22, 1-7.).

The starry disk of the *Agnus Dei* is supported by four angel caryatids that stand on tiptoe on sky-blue globes towered over by four peacocks and held by pairs of saving dolphins. In the four sails of the vault, two on a gold plated background and two on a green background, the celestial bestiary is placed divided by four pillars of luxuriant greenery.

The gold-plated fields facing the apse and the green ones in the opposite directions specify and qualify the gold-plated line as the direction of the light which, starting from the central medallion of the presbyterial arch, leads to Christ who is seated on the big globe. And the four fields of the sails come alive with heavenly and earthly creatures, birds and mammals in the green fields and in the gold-plate ones only birds that for their aerial nature have always enchanted and fascinated mankind, as is testified by Ambrose, who dedicated one of his writings to bird song.

After crossing the vault of the presbytery the line of light continues to the thin cross in the middle of the apsidal triple lancet window, then it drops and is visually captured by the lily white radial Alpha, it enters the soffit of the apsidal arch, it dwells in the thriumph of the mother of pearls of *Chi Rho* and finally it drops into the majestic figure of the young *Christ Kosmokrator*, who has the scrolls of the seven seals in his hands, on the globe shaded in many blue nuances, with at his foot the four rivers of paradise.

> "In Him the life was and that life was the light of man" (John, 1, 4-5).

So in the three representations of Christ the complex iconographic plan is summarized, which is regularly articulated in the Old Testament scenes of the presbytery showing salvation through sacrifice and culminating in the triumphant theophany of the apsidal vessel, where Christ offers the crown of martyrdom to San Vitale, titular of the church.

Within the vaste and cultured program, that is always extremely consistent and rigorous, even in the different versions due to the participation of many workers (Alberti - Muscolino 2000: 595-600), the analysis of the materials used shows a

clear although imperceptible division between the area of the presbytery and that of the apse, almost if an invisible barrier separates the two areas.

The selection of the most precious and qualitatively brighter materials in the apsidal area is a precise and determinate choice, because in this area of excellence there can be no place for the light and shade shadowiness of the stone materials.

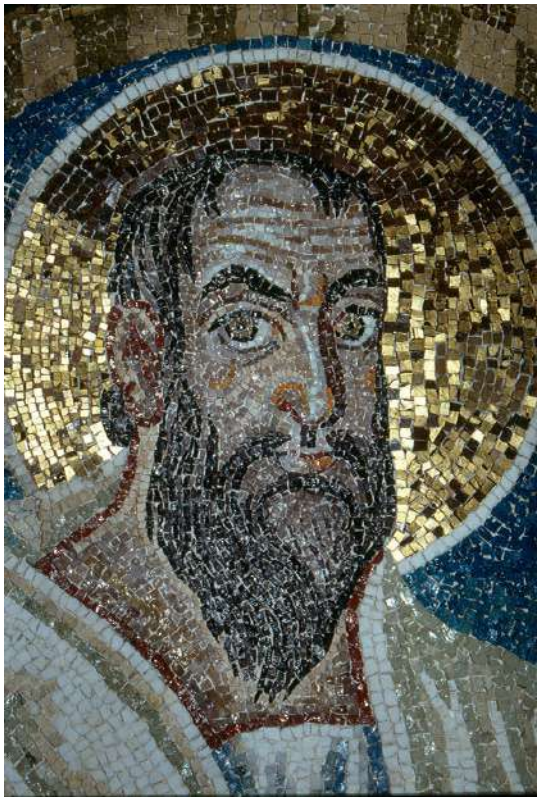
Where the hierarchy is at the highest levels, where you complete the journey that began in the presbytery with offerings of Abraham and Melchizedek, with the *oblatio Augusti et Augustae* at the feet of Christ, Lord of the World, and the faithful can contemplate the theophanies of heaven and hearth, the dazzling splendor of brightest glass and of precious stone, gold silver and mother of pearl triumphs.

The golden metallic foil pieces used for the holy characters haloes in the presbytery, to realize the backgrounds of the apsidal vessel, on the panels with Justinian and Theodora and for all characters haloes, except for the angels, flanking Christ and San Vitale, who are haloed wit silver pieces.

In the apse exclusively golden pieces with the red background amber support are used, while in the presbytery area, in particular on the right wall in the haloes of the evangelist Mark and Matthew of the Prophet Isaiah this gold appears along with the gold with the green background.

On the left wall also the haloe of the Evangelist Luke is made with the two kinds of gold mixed, while the Evangelist John's nimbus is made with the first circles of pieces close to the face in amber gold, which is warmer, to give the figure more luminosity, and then in the outer rows gold on a green glass support, colder, similarly to the Prophet Jeremiah.

On the entrance arch to the presbytery all the Apostles' haloes are made with the best quality gold, except for the last three lower medallions, both on the right and on the left side (Figs. 10-11).



Figures 10-11
Detail of St Paul, presbytery arch, San Vitale, Ravenna.

It was therephore found that when the most precious and warm gold began to be scarce (the same applies for the glassy materials) the mosaicists, having to make choices, reserved it for the most important characters from an iconographic pint of view. It is therephore no coincidence that Moses (depicted on the south wall while he is grazing his flock and the hr prepares to enter the burning bush, and on the north wall where he receives the scroll of the law from God's hand) always has halo with the qualitatively more shining gold, like the three angels, who foreshadow the Trinity in the representation of Abraham hospitality and Melchisedeck the high priest who offers sacrifice at the side of the altar with Abel, in the facing lunette (Muscolino 1997b: 111-121).

So while in the presbytery the narration of the holy stories that occurred over time takes place in a very rich natural setting, the sparkling of the gold plated background of the apse shows in a clear way that the characters belong to the world of transcendence.

Similarly in the apse of St. Apollinare in Classe you can see the transition from living in history to going beyond this.

So from the verdant landscape of the lower area of the apsidal vessel, where "the precious glassy pieces of an infinity of colors, the shapes and the mosaic designs reproduce, with elegant details, the ancient vegetation and its wealth of trees that by now have definitively disappeared" (Pezzi et al. 2008: 28)[7] you pass on to the uncontaminated brightness of the upper part where the transfiguration of Christ on Mount Tabor is represented.

While the first bishop Apollinare, covered with a dalmatic interwoven with golden bees, is in a praying position in the midst of the flock of his faithful in a verdant plain "showing the greenness of all the grass, of all the leaves at any time of the year" (Pezzi et al. 2008: 24), at the top there are no more time-space coordinates, but everything is bathed in Tabor sunlight and the representation culminates in the dazzling bejeweled cross in the center of which the perfect jewel is set, Christ's face.

This short journey through the wall mosaics of Ravenna showed us the experiments aimed at improving the golden pieces, at perfecting their constitutive nature and consequently the aesthetic effect.

In the light of what we have observed from now on we will no longer talk about gold, but of golds, bearing in mind that in the 6th century in Ravenna unprecedented splendor was achieved.

7 "here are represented plants that have a symbolic meaning, others typical of the ancient environmental area and plants with only a decorative function. You can see olive trees, stone and cluster pines, junipers, holms, lichens, ferns, little bells, Saint Pancras lilies, daisies".

Bibliography – Kaynaklar

Alberti - Muscolino 2000 — L. Alberti - C. Muscolino, "Il catino absidale di S. Vitale a Ravenna, Uno sguardo sulla tecnica di esecuzione: i materiali utilizzati ed una ipotesi sulle maestranze", F. Guidobaldi – A. Paribeni (eds.), Atti del VI Colloquio dell'Associazione Italiana per lo Studio e la Conservazione del Mosaico, Venezia 20-23 gennaio 1999, Ravenna, 595-600.

Alberti - Muscolino 2005 — L. Alberti - C. Muscolino, "The conservation of the mosaics of San Vitale in Ravenna, Italy 1989-1999", VIIIth Conference of the International Committee for the Conservation of Mosaics (ICCM), 29 october-3 November 2002, Thessaloniki, 169-180.

Bandini 1987 — B. Bandini, Alla luce del mosaico, Ravenna.

Carbonara et al. 2000 — E. Carbonara - C. Muscolino – C. Tedeschi, "La luce nel mosaico: le tessere d'oro di Ravenna, Tecniche di fabbricazione e utilizzo", F. Guidobaldi – A. Paribeni (eds.), Atti del VI Colloquio dell'Associazione Italiana per lo Studio e la Conservazione del Mosaico, Venezia 20-23 gennaio 1999, Ravenna, 709-718.

Casavecchia 2011 — C. Casavecchia, "Fiat lux: un viaggio tra architettura e mosaico alla ricerca della luce", L. Kniffitz (ed.), Architettura e Mosaico, Atti della Giornata di studi, Ravenna, Museo d'Arte della città, 9 ottobre 2010, Ravenna, 65-73.

Fiorentini Roncuzzi 1993 — I. Fiorentini Roncuzzi, "L'effetto oro sulle pareti musive", Atti del 1° Colloquio dell'Associazione Italiana per lo Studio e la Conservazione del Mosaico, Ravenna, 29 aprile - 5 maggio 1993, Ravenna, 125-131.

Fiori - Muscolino 1990 — C. Fiori – C. Muscolino, Restauri ai mosaici nella basilica di S. Vitale a Ravenna, L'arco presbiteriale, Faenza.

Grabar 1946 — A. Grabar, Martyrium, II, Parigi.

Iannucci - Muscolino 2002 — A. M. Iannucci – C. Muscolino, La Scuola per il Restauro del Mosaico a Ravenna, Ravenna.

Muscolino 1997a — C. Muscolino, "Restauri ai mosaici parietali nel presbiterio di S. Vitale", Quaderni di Soprintendenza 2, 16-21.

Muscolino 1997b — C. Muscolino, "I restauri musivi", La Basilica di S. Vitale a Ravenna, Mirabiliae Italiae, Modena, 111–121.

Muscolino 2006 — C. Muscolino, "Continuità e innovazione negli apparati decorativi da Teoderico a Giustiniano", A. Augenti - C. Bertelli (eds.), Santi Banchieri Re, Ravenna e Classe nel VI secolo, San Severo e il tempio ritrovato, Milano, 37-42.

Muscolino 2007 — C. Muscolino, "Il mosaico parietale bizantino fra tecnica e restauro", C. Spadoni – L. Kniffitz – C. Balsamo (eds.), San Michele in Africisco e l'età giustinianea a Ravenna: atti del convegno "La diaspora dell'arcangelo, San Michele in Africisco e l'età giustinianea", Giornate di studio in memoria di Giuseppe Bovini, Ravenna, Sala dei Mosaici, 21-22 aprile 2005, 297-309.

Muscolino 2013 — C. Muscolino, "The Observation and Conservation of Mosaics in Ravenna in the 5th and 6th Centuries", C. Entwistle - L. James (eds.), New Light on Old glass: Recent Research on Byzantine Mosaics and Glass, London, 42-52.

Muscolino et al. 2008 — C. Muscolino - E. Carbonara - E. R. Agostinelli, Il leone di Bisanzio a S. Apollinare in Classe, Una nuova pagina d'arte bizantina dai mosaici dell'arco trionfale, Ravenna.

Muscolino et al. 2011 — C. Muscolino - A. Ranaldi - C. Tedeschi, Il battistero Neoniano, Uno sguardo attraverso il restauro, Ravenna.

Muscolino et al. 2012 — C. Muscolino – F. Cavani– E. Grimaldi (eds.), Sant'Apollinare Nuovo, Un cantiere esemplare, Ravenna.

Pezzi et al. 2008 — E. Pezzi – I. Fiorentini Roncuzzi – A. Roncuzzi, Sant'Apollinare in Classe di Ravenna e il suo bosco perduto, Ravenna.

Rizzardi 2010 — C. Rizzardi, Ravenna, Otto Monumenti Patrimonio dell'Umanità, L'iscrizione di Ravenna nella World Heritage, Ravenna.

Uspenskij - Losskij 2007 — L. Uspenskij – V. Losskij, Il senso delle icone, Milano.

DOI: 10.26658/jmr.614897

JMR 12, 2019 133-148

Roman Villa of Rabaçal, Penela, Portugal

A Mediterranean Production Centre and Palatial Home with Mosaic Floors from the Late Antiquity in the Territory of the Ciuitas of Conimbriga and the Lands of Sicó

Rabaçal Roma Villası, Penela, Portekiz

Conimbriga Kentleri ve Sicó Toprakları Bölgesinde Geç Antik Dönemden Bir Akdeniz Üretim Merkezi ve Mozaik Tabanlı Saray Evi

Miguel PESSOA[*] - Ana Luísa Ravara MENDES[**] - Elsa SIMÕES[***] - Sónia VICENTE[****]

(Received 30 October 2018, accepted after revision 02 October 2019)

Abstract

Considering that the word Villa at the same time designated an architectural structure and a land structure, at least three architectural types of Farm House or Pars Rustica are known in western Roman Villae (LEVEAU, BUFFAT, 2008, pp. 134- 135). The first type presents a previously established and highly architectural regular plan, with the buildings dedicated to production contiguous to the house, which was built with a centred plan. This type is traditionally considered as characteristic of the Mediterranean area, as it is the case of the Villa of Torre de Palma, Monforte, in the south of Portugal, dating from the beginning of the fourth century AD. This Villa is organized around three courtyards (one, integrating the pars urbana, another, connecting with the pars rustica, which is implemented around a third larger courtyard). The second type, also considered as a work of architecture and used as a model for in rure constructions in North Gaulle, presents non-contiguous agricultural buildings, although these are arranged in a regular form along a wide rectangular courtyard, with the palatial house of the Villa, normally integrating the baths, erected on one of the smaller sides of the rectangle, in an axial position. Thus, if on one hand the non-contiguous distribution of the constructions that integrate the components of the Villa of Rabaçal (palatial house with mosaic floors, baths, spring nucleus, farm house and workshops of several professions), dated from the middle of the fourth century AD, is similar to the pars rustica model of the second type, on the other hand it seems to be mainly related with what will be mentioned next, since it is a joint plan of constructions that, despite being very organized, is not confined to a geometrized design. In this third type, constructions are divided, in different planes, without regularity, in a space that is not clearly delimited and to which converge alternative paths and different crossings. This provisional classification of the type of location and distribution of farm and residential houses originates from the fact that, in many cases, the Villae have been transformed into luxurious houses without agricultural production facilities.

Keywords: *Roman Villa of Rabaçal, Conímbriga, Late Antiquity, architecture, mosaics.*

[*] Miguel Pessoa, Archaeologist, Coordinator, Museum of the Roman Villa of Rabaçal, Municipality of Penela, Portuguese Museum Network, Curator of the Monographic Museum of Conímbriga, General Management of Cultural Heritage, Portugal.
ORCID ID: https://orcid.org/0000-0001-8077-1654. E-mail: pesmig@sapo.pt

[**] Ana Luísa Ravara Mendes, Conservation and Restoration Technician in the Museum of the Roman Villa of Rabaçal, Portugal.
ORCID ID: https://orcid.org/0000-0001-8979-9856. E-mail: ana.ravara@cm-penela.pt

[**] Elsa Simões, Archaeologist, Museum of the Roman Villa of Rabaçal, Municipality of Penela, Portuguese Museum Network, Portugal.
ORCID ID: https://orcid.org/0000-0002-1057-1662. E-mail: caluchasimoes@sapo.pt

[****]Sónia Vicente, Senior Technician of Archaeology in the Municipality of Penela, Portugal.
ORCID ID: https://orcid.org/0000-0002-7264-1451. E-mail: sonia.vicente@cm-penela.pt

Translation: Ana Marília Gonçalves Ferreira, E-mail: anamariliaferreira@gmail.com

Öz

Villa kelimesinin bir mimari yapı ve aynı zamanda bir arazi yapısı olarak tanımlandığı göz önünde bulundurulduğunda, batı Roma Villası'nda en az üç mimari tipte Çiftlik Evi veya Pars Rustica olduğu bilinmektedir. İlk tip, daha önceden belirlenmiş ve son derece düzenli bir plan sunmakta olup, merkezi bir plan çerçevesinde evlerin bitişiğindeki üretime tahsis edilmiş binaları olan yapılardır. Bu tip, Portekiz'in güneyinde Monforte'de, MS 4. yüzyılın başlarından kalma Torre de Palma Villası örneğinde olduğu gibi, geleneksel olarak Akdeniz bölgesinin karakteristik villa tipi olarak kabul edilmektedir. Bu villa üç avlu etrafında düzenlenmiştir (biri pars urbanaya bağlanan, diğeri ise üçüncü büyük avlu etrafında konumlandırılan pars rustica ile birleşen). Kuzey Galya'daki kırsal yapılarda model olarak kullanılan ve bir mimarlık eseri olarak da kabul edilen ikinci tip, bitişik olmayan tarımsal yapılar sunar; ancak bunlar, geniş bir dikdörtgen avlu boyunca düzenli bir biçimde düzenlenmiş olsalar da, normalde dikdörtgenin küçük yanlarından birine konumlandırılmış olan hamamları eksenel bir pozisyonda birleştiren villa tipidir. Bu nedenle, bir yandan, MS dördüncü yüzyılın ortalarından kalma Rabaçal Villası'nın bileşenlerini oluşturan yapıların bitişik olmayan dağılımı (mozaik zeminli saray evi, hamamlar, pınar kaynağı çiftlik evi ve çeşitli işlikler), ikinci türün pars rustica modeline benziyorsa da, daha sonra anlatılacağı gibi, temelde çok organize bir şema sunsa da geometrili bir tasarımla sınırlı olmayan ortak bir yapı planını göstermektedir. Bu üçüncü tipte, yapılar farklı düzlemlerde, düzenli olmadan, açıkça sınırlandırılmayan ve alternatif yolları ve farklı geçişleri birleştiren bir alanda bölünmüştür. Çiftlik ve konut evlerinin konum tipine ve dağılımına ilişkin bu geçici sınıflandırma, birçok durumda Villa'nın tarımsal üretim tesisleri olmadan lüks evlere dönüştürülmüş olmasından kaynaklanmaktadır.

Anahtar Kelimeler: *Rabaçal Roma Villası, Conímbriga, Geç Antik, mimari, mozaikler.*

Figure 1a
Corner mosaic floor, between the north-west and west corridors from the *peristylum* of the *Pars urbana* of the Roman *Villa* of Rabaçal, with a pitcher and two dolphins. Drawing: José Luís Madeira 2005.

Some Considerations about the Farm House and the Architecture of the Components of the Roman *Villa* of Rabaçal

A Production Centre and Palatial House with Mosaic Floors of the Late Antiquity in the Territory of the *Ciuitas* of Conímbriga

Introduction

The Roman provinces of Hispania *(Lusitania, Tarraconensis, Baetica, Gallaecia, Carthaginensis, and Mauretania Tingitana)* are undoubtedly those in which a greater number of rural sites were catalogued and registered as *Villae*. The data for the Iberian Peninsula is mainly related to the *pars urbana*. The chronology of these *Villae* extends from the end of the Republican Era, in the first century BC,

to the beginning of the fifth century AD (Alarcão 1998: 107-110; Gorges 2008: 28). There are about 300 *Villae* registered in Portugal and Spain (Gorges 2008: 28). In addition, according to recent data, the inventory number of sites where Roman mosaics were identified (symptomatic of the presence of a seigniorial residence in the city or in the countryside) is, only in Portugal, of more than 254 sites (Abraços 2005: 15).

"It is possible to observe that the *Villae*, built or remodelled from the end of the third and beginning of the fourth centuries AD, despite being less numerous than in the preceding period, are in most cases larger and richer due to their dimension, a consequence of the continuous phenomenon of land concentration. This "Constantinian Renaissance" sporadically extended to the first decades of the fifth century. These "late" *Villae*, some with a very short life, despite the material and artistic luxury of their installations, are one of the most original phenomena of the late Roman colonization.

The Late *Villae* of the Peninsula escape in many cases the stereotype and present a great diversity, taking life forms and elements typical of a certain lifestyle in the Imperial Court (*Aula*), whose archetype it is possible to find in the Sicilian *Villa* of Piazza Armerina. These (sometimes excessively monumental) country half-palaces, half-farms are not separated from the world. On the contrary, they are the reflection of a new "socio-economic" typology linked to typical Roman art forms and lifestyles. They are also a reflection of the economic and political power of the upper social classes that ensure or seek to ensure the continuity of Rome in the provinces, at a time when it starts to be outlined, after the German invasions of 409, the agrarian and political system that will succeed the Roman model and which will be that of the High Middle Ages" (Gorges 2008: 29).

Types of *Villae*

The Late Roman *Villa* of Rabaçal, in the territory of the *Ciuitas* of Conímbriga, *Conuentus Scallabitanus*, province of Lusitania, is presented, according to the typology table introduced by Gérard (Gorges 2008: 31 fig. 1), not as an example of a linear *Villa*, nor of a block *Villa*, with a *peristylum*, but rather as a type of palatial *Villa*, a monumental and complex sub-type. It is a radial construction, around a central *peristylum*, with the development of several architectural sets with mosaic floors (Figs. 1a-c).

Figure 1b
Mosaic floor in the central panel from the *triclinium* of the *Pars urbana* of the Roman *Villa* of Rabaçal. It contains stone and glass and it is a pioneer of the use of stained glass. Photography: Delfim Ferreira 1990.

Figure 1c
Mosaic of Autumn from the west corridor from the *peristylum* of the *Pars urbana* from the Roman *Villa* of Rabaçal. It includes stone and glass tesserae, particularly used in the jewellery representation, perhaps to suggest its value.
Photography: Delfim Ferreira 1990.

This model was implemented particularly during the period of the tetrarchy and subsequent periods (Figs. 2-6).

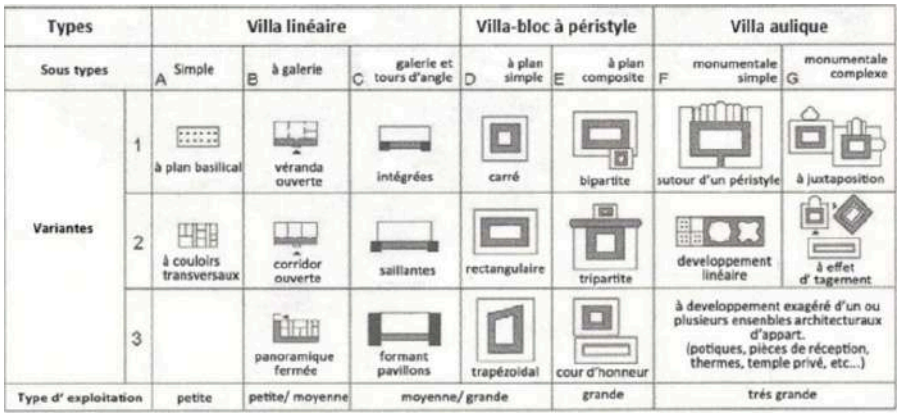


Figure 2
Layout plan typology: linear *Villa*, block *Villa*, with *peristylum*, and palatial *Villa* (Gorges 2008: 31 fig. 1).

However, although it incorporates a palatial house, this *Villa* is like all the others, bringing together in its various components the function of (temporary) home and (permanent) production centre (Figs. 7-11).

"In addition to a fashion phenomenon, inspired by the Imperial Court (*Aula*), this type of *Villa* can be considered as a greater illustration of the competition to which the elites of the Low-Empire dedicated themselves, through the luxury display of their homes. Faced with the decline of municipal life, it is in the halls, in the courtrooms, in the *triclinia* and even in the thermal baths of the large private residences that, at various levels, a large part of the businesses are conducted. This model is present, for example, in Italy, Hispania, South Gaul and Sicily" (Gorges 2008: 33).

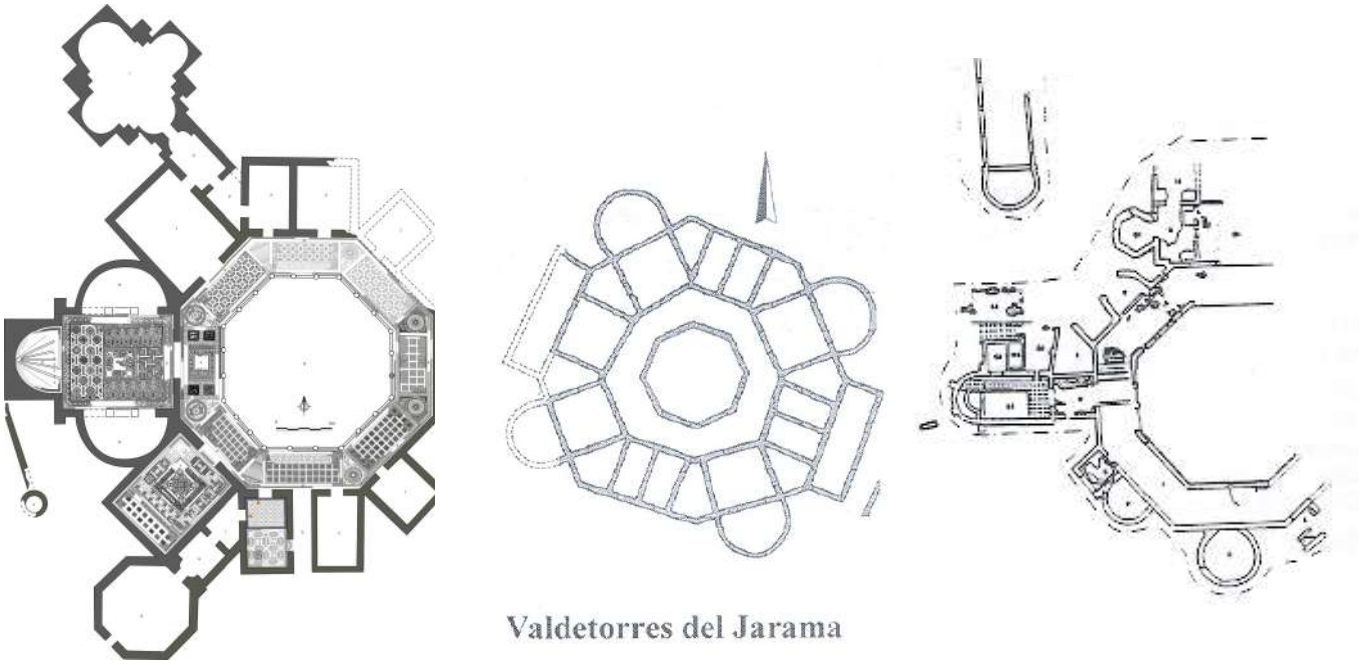


Figure 3
Octagonal layout plan of the *Villa* of Rabaçal, Penela (Portugal), Valdetorres de Jarama, Madrid (Spain) and Palazzo Pignano, Cremona (Italy) (Gorges 2008: 43 fig. 6a).

The elaborate construction plan of the *pars urbana* of Rabaçal, in interconnection with the various components of this *Villa*, makes it, like its counterparts of Valdetorres de Jarama[1] (Madrid, Spain), and of Palazzo Pignano (Milan, Italy), a symbol of possession, source of income and a place of retreat (*recessus*) dedicated to relaxation and pleasure, within the framework of the new manifestations of artistic expression that were developed during the fourth century AD (Maciel 1996: 157).

In the eyes of the owner, the pride of displaying in the centre of the property the luxury of the residential and baths area would be equated with the pleasure of showing the logical disposition of the places dedicated to agricultural and livestock production, as well as those related with metallurgy, textile, the production of building ceramics and regional crockery, dairy products and other activities.

"But the attention has been essentially devoted to the *pars urbana* or the palatial house of the *Villae*, and the constructions devoted to agricultural activities, which give importance to the former, are the least known component. In fact, the word *Villa* designated at the same time an architectural and land structure" (Leveau - Buffat 2008: 134).

There is little left of the *pars rustica*[2] of the Villa of Rabaçal from the middle of the fourth century (whose archaeological discovery began in 1987, continued in 1989 and 1996, and resumed between 2002-2013 and then between 2014-2017, according to Component 4 of the Safeguard Plan (Pessoa et al. 2008: 676-679)).

1 Some authors interpret this octagonal structure as belonging not to the *pars urbana* of a *Villa* but to a *macellum, mansio* or *hospitium*. It is also important to note the similarity of this octagonal architectural with that of the *pars urbana* of the Roman *Villa* of Can Farrerons (Premià de Mar, Maresme) (Cf. Doria – Monteagudo - Piqueras s. d.: 171 fig. 2; 182)

2 It was not possible, during the useful time defined for the delivery of this work, to consult Alexandra Chavarría Arnau's monograph, (Arnau 2007), " El final de las "villae" en Hispania, siglos IV-VII D.C.", with structure examples of the *pars rusticae* of late *Villae* from Hispania (also containing the site inventory); the same occurred with Chris Wickham's work, *Framing the Early Middle Ages,* (Wickham 2005), considered fundamental for the vision of the social relations between the workers and the *dominus*. We put them together in bibliography.

As mentioned, the excavation revealed evidences of what was interpreted as being the north extension of the Agricultural Courtyard. This space could include corrals – for example, sheep and goats are adapted to the *pastio agrestis* and do not need quality constructions. It is also possible to state that very little remains of the Roman agricultural installation, rustic propriety or farm type, implemented in this same place, perhaps in the middle of the third century AD (Pessoa 2011: 177).

It should be noted that the Emperor Décio's milestone, dated from 250-252 (Mantas 1985: 159-179), in the Permanent Exhibition on the ground floor of the Museum, and discovered along the Roman road (connecting *Sellium*, Tomar, to *Aeminium*, Coimbra, while going through *Conímbriga*, Condeixa- a-Velha), on the east side of the Rabaçal Valley, more than 500 metres from the *Villa*, can correspond to a road improvement and to the recognition of the potential of the local agriculture that, at the same time, resulted in the improvement of the economic conditions in this area (Mantas 1985: 179). The implementation model of dispersed settlement type (Alarcão 1998: 92), used in the *Villa* of Rabaçal and in the territory of the *ciuitas* of Conímbriga, was elaborated in Italy at the beginning of the Imperial Period and spread throughout the west provinces (Alarcão 1998: 107-110; Gorges 2008: 137) until Late Antiquity. This last period was, for a long time, presented as a phase of settlement decline and production disorganization in the fields. In this period, it is included the fourth century, which was considered, for a long time, as one of decadence of the Roman Empire. And if, for the State, it was undeniably a period of political and financial crisis, the truth is that there must have been great and solid private fortunes. This is deduced from the architectural and decorative richness of many of the *Villae* built in the second half of the fourth century (Alarcão 2003)[3].

Types of *pars rusticae*

At least three architectural types are known of the Farm House or *Pars Rustica* for the western Roman *Villae* (Leveau - Buffat 2008: 135). The first type presents a previously established and highly architectural regular plan, with the buildings dedicated to production contiguous to the house, built with a centred plan. This type is traditionally considered as characteristic of the Mediterranean space, as it is the case of the *Villa* of Torre de Palma, Monforte, in the south of Portugal, dating from the beginning of the fourth century AD. This *Villa* is organized around three courtyards (one, integrating the *pars urbana*, another, connecting with the *pars rustica*, which is implemented around a third larger courtyard) (Fig. 7).

The second type, also considered as a work of architecture and used as a model for *in rure* constructions in North Gaulle (Leveau - Buffat 2008), presents non-contiguous agricultural buildings, although these are arranged in a regular form along a wide rectangular courtyard, with the palatial house of the *Villa*, normally integrating the baths, erected on one of the smaller sides of the rectangle, in an axial position (Fig. 8).

3 Opinion regarding the application to international institutions.

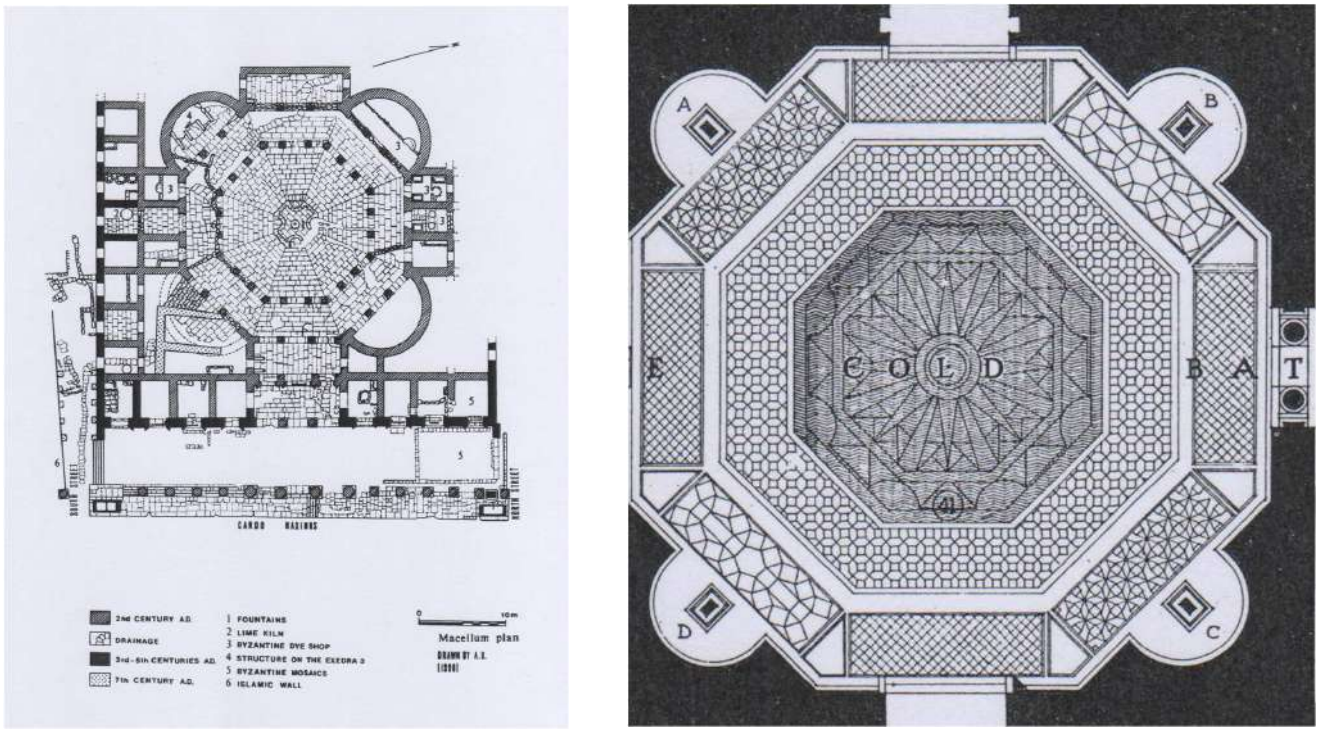


Figure 4
Polygonal Roman constructions. a) Market of Jerasa, Jordan, from the second century AD (Uscatescu - Bueno 1997: 67-88); b) Hall of the *Frigidarium* of Bath C of Antioquia, Turkey, with mosaics of the fourth century AD (Levi 1947: 190 pl. 118).

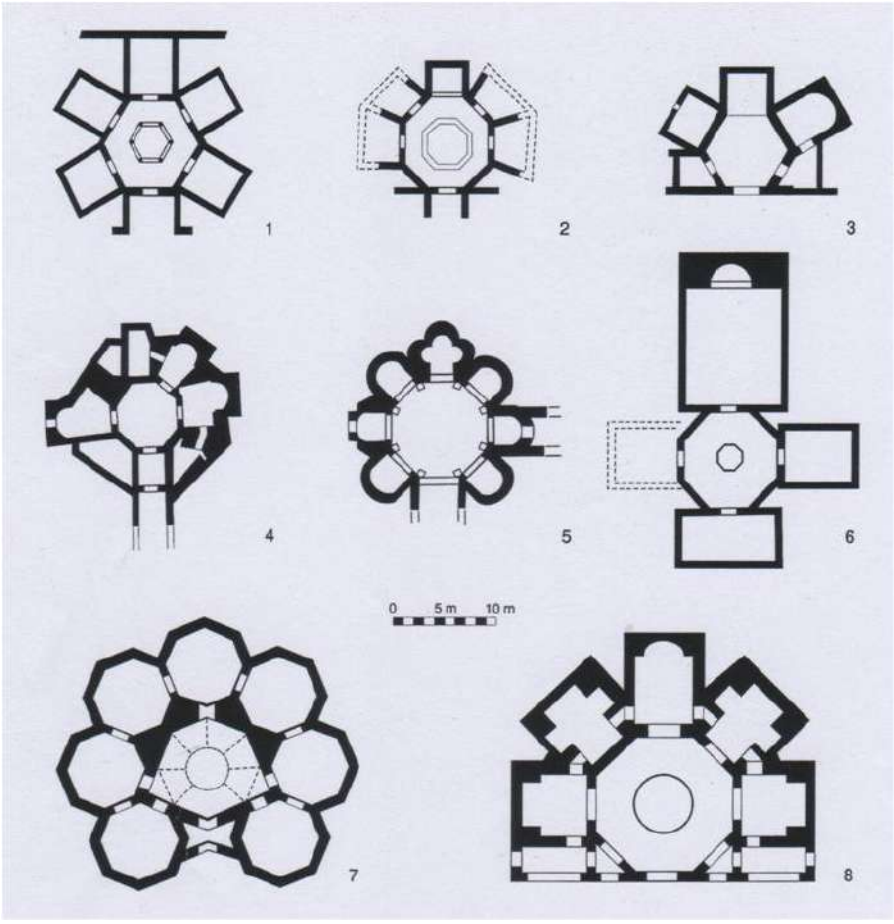


Figure 5
Roman polygonal constructions. List 9 (Teichner 2008: 481-482 Abb. 272) - 1) Abicada, Mexilhoeira grande, Portimão, Algarve, Portugal; 2) Lufton, Somerset, England; 3) Keynsham, Somerset, England; 4) Holcombe, Devon, England; 5) Piazza Armerina, Sicily, Italy; 6) Villa of Santa Rosa, Cordoba, Andalusia, Spain; 7) Las Bovedas, Marbella, Malaga, Andalusia, Spain; 8) Domus Aurea, Rome, Italy.

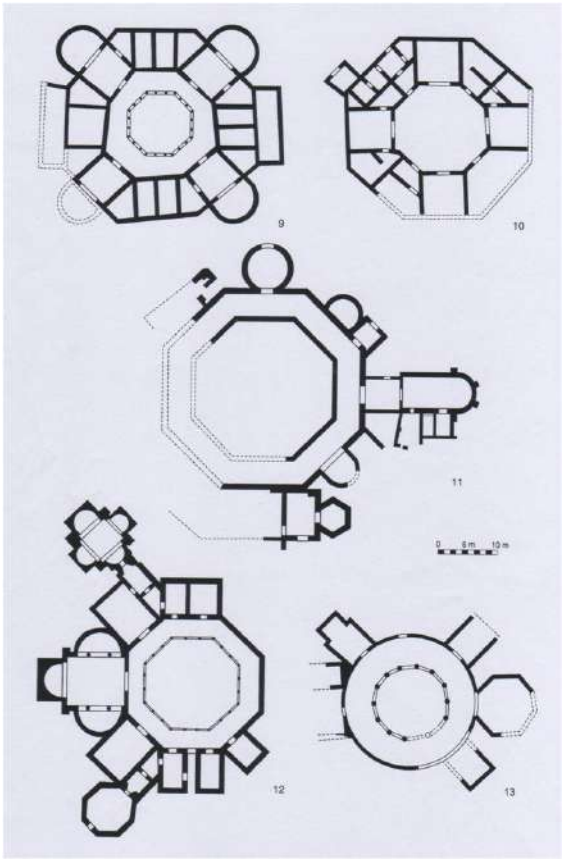


Figure 6
Polygonal Roman constructions. List 9 (Teichner 2008: 481-482 Abb. 273) - 9) Valdetorres de Jarama, Madrid, Castile-Leon, Spain; 10) Can Farrerons, Maresma, Catalonia, Spain; 11) Palazzo Pignano, Cremona, Italy; 12) Rabaçal, Penela, Coimbra, Beira Litoral, Portugal; 13) Los Baños de la Reina, Calpe, Alicante, Spain.

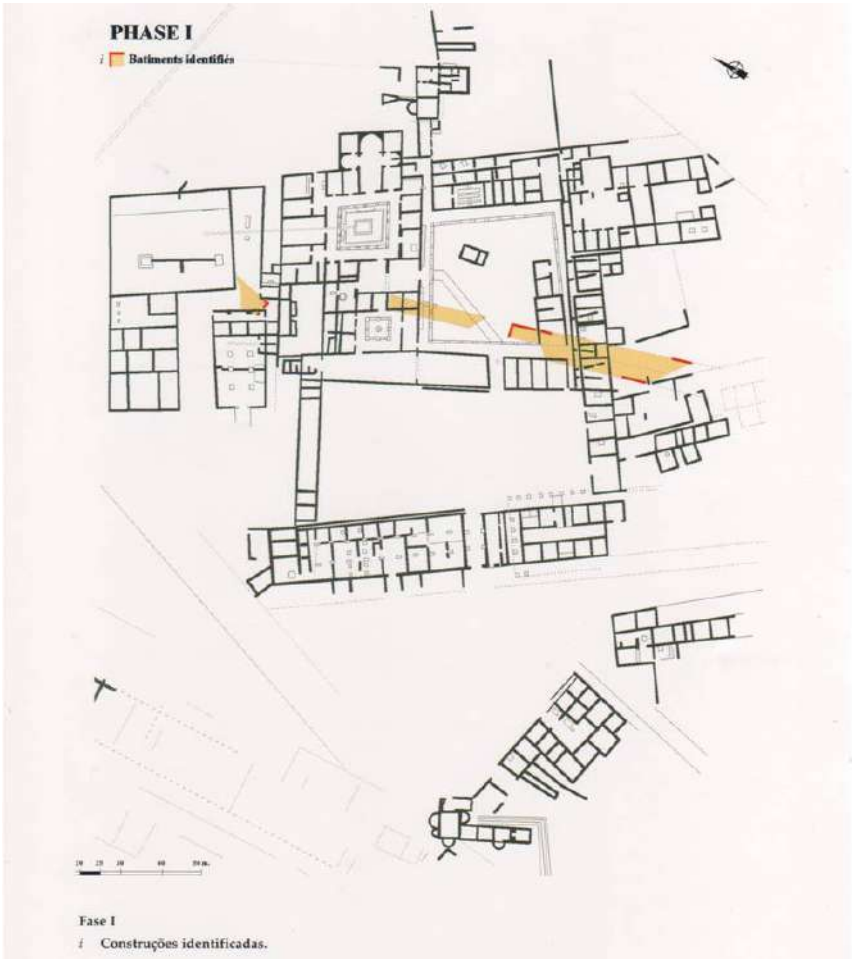
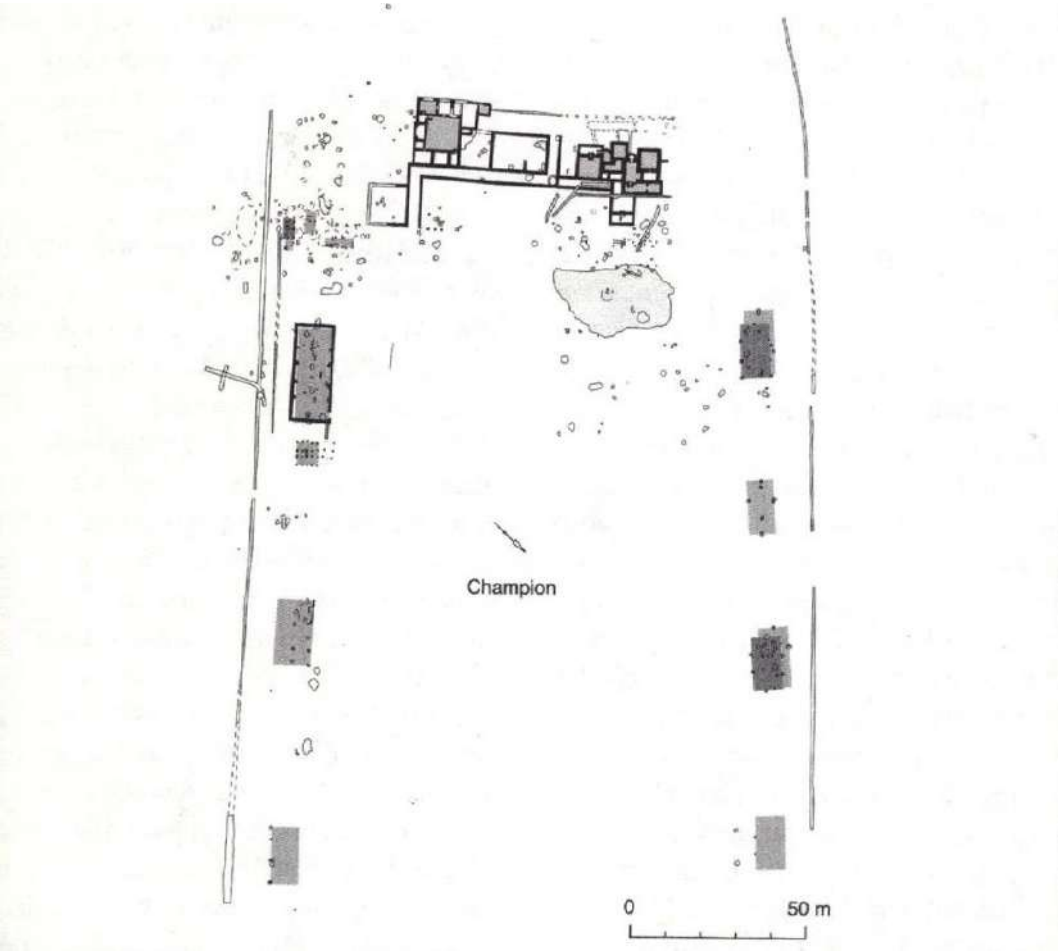


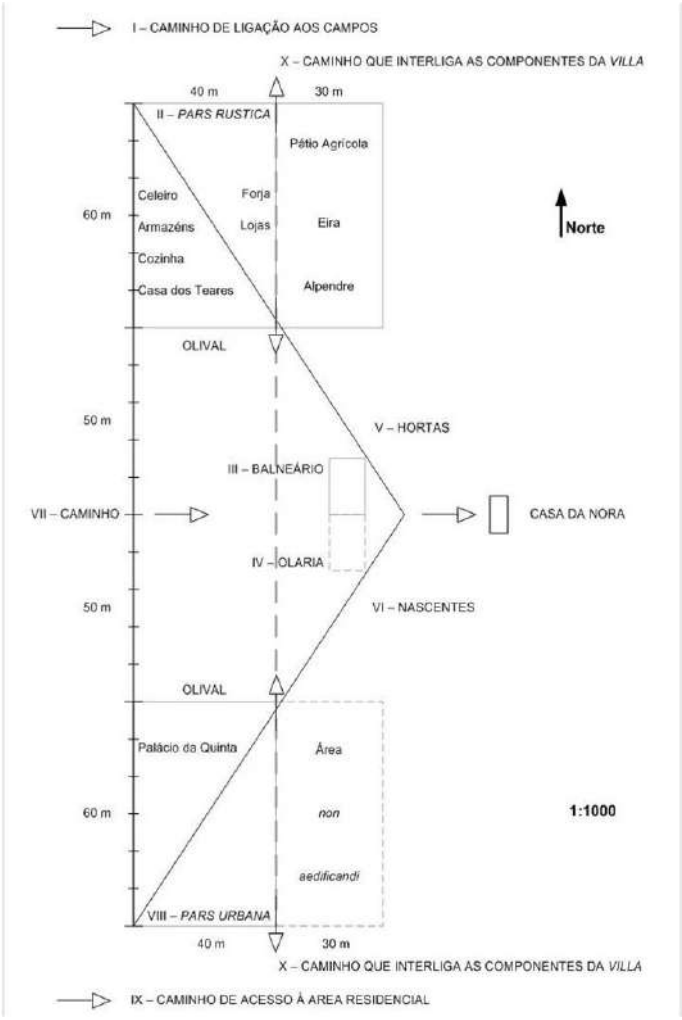
Figure 7
Layout plan of the *Villa* of Torre de Palma, Monforte, Alentejo, Portugal (Lancha - André 2000).

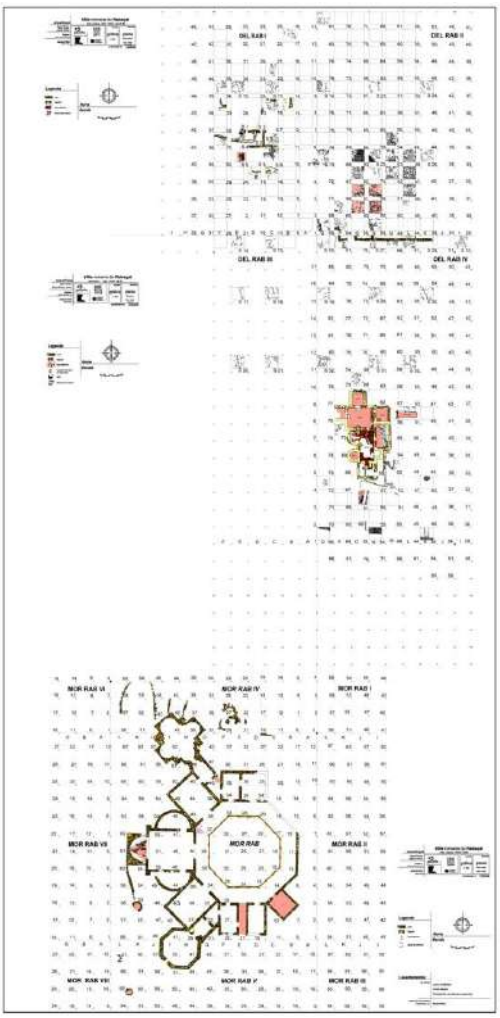
Figure 8
Layout plan of *Villa* of Champion, Belgium (Leveau - Buffat 2008: 141 fig. 5).

Therefore, if on one hand the non-contiguous distribution of the constructions that integrate the components of the *Villa* of Rabaçal (palatial house, baths, spring nucleus, farm house and workshops of several professions) is similar to the *pars rustica* model of the second type, on the other hand it seems to be mainly related with what will be mentioned next, since it is a joint plan of constructions that, despite being very organized, is not confined to a geometrized design. In this model-type, constructions are divided, in different planes, without regularity, in a space that is not clearly delimited and to which converge alternative paths and different crossings (Figs. 8-11).



In these situations, as it seems to be the case of Rabaçal, the distribution of these constructions may have resulted from both an original choice (Palatial House and Baths) and successive construction plans (Farm House). In this case, the establishment of the chronological data was fundamental for this realisation as the discovery of coins from the third century and, the majority, from the middle and the end of the fourth century, in the 2013 campaign (Report, 2011, Chapter I – Excavation: most representative assets) sustains the interpretation that a farm-type installation or agricultural propriety from the middle of the third century preceded the construction of the palatial house and baths in the beginning of the second half of the fourth century. Therefore, the enlargement or restructuring of the *pars rustica*, equipped with a large agricultural courtyard, a threshing floor, a porch, a kitchen, a barn, a mill, a metallurgy workshop, a loom house and a pottery workshop (this one next to the baths) must be contemporary to the implementation of the *pars urbana* in the middle or second half of the fourth century.





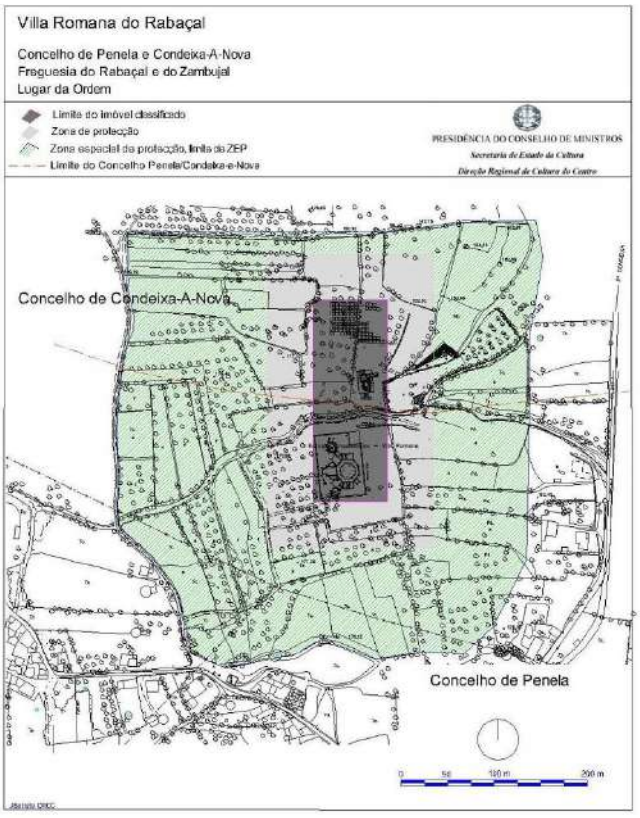


Figure 9
Schematic proposal with the approximate distribution of the various components of the Roman *Villa* of Rabaçal, clearly visible to each other, since they are close and in different planes, within the same unit: I - Pathways to the property fields or fundus; II – Farm House or *pars rustica*; III - Baths; IV – Pottery workshop; V – Vegetable gardens and irrigation tanks; VI – Springs and watermill house; VII - Connection path from the Baths to the Pottery workshop, the vegetable garden and the springs; VIII – Palatial house of the farm or *Pars urbana*; IX - Connection path to the residential area or *pars urbana*; X - Path that linked the components of the *Villa* (Pessoa 2011: 24 fig. 5g).

Figure 10
General plan and archaeological square of the Roman *Villa* of Rabaçal. Drawing: José Luís Madeira. 1998. Computerisation: Daniel Pinto. 2010. José Augusto Dias. 2011 (Pessoa 2011: 22 fig. 5e).

Figure 11
Location plan. Classification process of the Roman Villa of Rabaçal as National Monument. Limit of the classified property, Protection Zone and Special Protection Zone. Author: J. Baptista. Regional Management of Culture of the Central Region 2011.

This temporary classification of the type of location and distribution of agricultural and residential constructions (Leveau - Buffat 2008) originates from the fact that, in many cases, the *Villae* were converted into luxurious houses, without facilities for agricultural production.

It seems to be a fact that the property organization in the Roman Empire suffered, during the second century, modifications (Leveau - Buffat 2008: 142), which were displayed in two very distinct ways. "The first is that the *Villa* becomes central for the purpose of rent payments and on the censuses. The fact that servile labour decreases in favour of settlers is translated, as seems to be proven, by the multiplication of sites. The second modification results from a classic process of property concentration for the benefit of the great landlords, who divide their *Villae* into two categories: the *Villae urbanae*, where the lords and families can live, and the *Villae rusticae*, the most numerous, entrusted to a *procurator*, who was assisted by *actores* (replacing the old *Vilicus*, who was assisted by a *Subuilicus*). This way, *Villae* of settlers start to exist in the *fundus* of a *Villa*." (Leveau - Buffat 2008: 142).

Considerations

Therefore, regarding the constructions related to the agricultural component or *pars rustica* of the Roman *Villa* of Rabaçal, it is important to highlight the fact that here it is possible to observe its continuity and the amplification of its use, while in its proximities, in the *pars urbana* or the lord's house, in the middle of the fourth century, it is also possible to observe the establishment of places assigned to the administration. This evolution of the *Villa* during Late Antiquity, in the sense of its monumentalization, leads to the removal of the agricultural and artisanal facilities of the house. The equipment connected to various production activities (viticulture, olive oil production, cereal farming, livestock, textile, building ceramics and regional crockery, forestry, metallurgy) is installed at some distance from the residential centre and constituted as satellite facilities, ensuring the exploration of the *fundus*.

It is important to note that, in the *Villa* of Prés-Bas from Loupian (Narbonne), its monumentalization led to the disappearance of agricultural and artisanal installations (the separation between production and recreational facilities is already evident in maritime *Villae* in the first century BC) (Leveau - Buffat 2008: 160). The production equipment seems to have been installed on the outside of the residential centre, at about a kilometre away. Even a paleo-Christian church was found, inside the sphere of the property of the *Villa* of Loupian, supposed to have belonged to the same domain (Leveau - Buffat 2008: 143). On the other hand, in Aquitaine, the dissociation of the residential component, reaching the status of a palace, and the component that brings together the production constructions, seems to be, according to Catherine Balmelle, the most frequent case (Balmelle 2001).

As a final point, it is possible to state that the present cycle of archaeological campaigns under way in the Roman *Villa* of Rabaçal focuses on the lesser known component of *Villae* from Late Antiquity. On one hand, these constructions on their own, regardless of the other components to which they are attached, are an objective testimony of the agricultural activity, the basis of the Roman economy in a territory; on the other hand, the way they integrate into the architectural set of Rabaçal can be revealing of the evolution of each of the elements, implemented throughout the *Villa*, and considered an example of *a posteriori* planning,

integrating constructions of previous centuries, and an indicator of the potential and use of the local resources. Therefore, given the advance of the study of the archaeological collections, or of those that allow an objective dating, such as the imported crockery (Quaresma 2011: 96-108), the amphorae (Buraca 2011a: 153-159), the lucernes (Ponte - Miranda 2011: 131-137), the glass (Ferreira 2011: 170-182) and the coins (Pereira et al. 2012), or through the representative collection of pieces, more or less common to all periods of Roman times, such as loom weights, local and regional crockery (Vicente - Simões 2011: 109-121), metal tools (Ponte 2011: 122-130), metallurgical remains (Vieira -Osório 2011: 50-63), as well as through the study of faunal remains (Deus 2011: 39-40; Valente 2011: 36-38), it is possible to discern the type of economic activities present here, focused in two directions. Some of the activities are aimed at collecting products from which the owner obtains income. The other activities concern the service of the *Villa* and the occupation of its inhabitants (who are not all agricultural workers), since the maintenance of the buildings and utensils, the table service of the lord, and the feeding of the labour force needed a large number of staff to whom it was necessary to provide food (Leveau - Buffat 2008: 159-160). Thus, the Roman *Villa* of Rabaçal exhibits an architectural plan only apparently dispersed or multi-nucleated. Its *pars rustica* (Fig. 12) presents itself not only

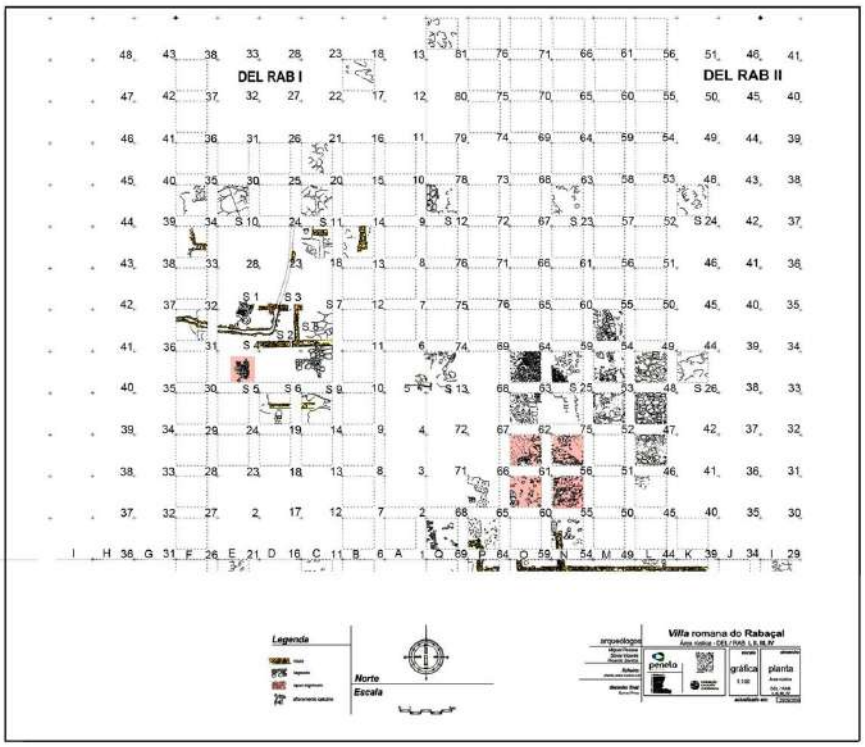


Figure 12
Pars rustica layout plan of the Roman *Villa* of Rabaçal. Archaeological square. Design: José Luís Madeira, 1998. Computerisation: Daniel Pinto, 2010; José Augusto Alves Dias, 2011.

as a centre for agricultural and livestock activities, but also as a centre for various professions (metallurgy, pottery, textiles) and storage of products. Here we find the area where the threshing floor (a) and its porches (b) were installed; the agricultural courtyard (c); the granary (h); the grinding mill; the bread oven; the kitchen (g); the firewood house; the cellar to store wine and oil (h); the salting facility; the loom house (e) and basketry; the annexes of the pottery workshop (i), these next to the Baths; the metallurgy (f); the possible common meal place and the foreman's home (g); the farm workers and servants' quarters (d); the stables and the pens (Figs. 13-15). And, very briefly, it is possible to state this because,

Figure 13
Aerial view of the constituent parcels of the *Villa*. In the foreground, an open archaeological square on the pars rustica, where it is possible to observe the area where the threshing floor (a) and its porches (b) were installed; the agricultural courtyard (c); the granary (h); the grinding mill; the bread oven; the kitchen (g); the firewood house; the cellar for wine and olive oil storage; the salting facility; the loom house (e) and basketry; the pottery complex (i), south of the Baths; metallurgy (f); the possible common meal place, the foreman´s house (g) and warehouse (h); the craftsmen, agricultural servants and servants' quarters(d); the stables and the pens. Author: Francisco Pedro. 2008 (Pessoa - Rodrigo 2011: 52 fig. 22).

Figure 14
Reconstitution hypothesis of the *Pars rustica* of the Roman *Villa* of Rabaçal, Penela, Portugal. Author: Pedro Madeira 2011.

as far as the present excavations are concerned, the majority of the concrete structures mentioned have not been uncovered, only some material evidence was found that constitute a clear proof of their existence and the effect of the activities carried out on these infrastructures. And as it is possible to infer, yesterday and today, in the rural world, men and women went out, fulfilling the tasks of the agricultural cultures of the Mediterranean world. And they left the *pars rustica*, taking the nearby or pernicious paths, which led them, far from the Palace, to the

vineyard, the olive grove, the cereal field, the brushwood, the vegetable garden, the beehives, the orchard, the linen field, the willow grove and to the meadow, accompanying the flocks.

Incidentally, all these activities would bring wealth, later embodied in the sumptuousness of the Palace, creator of the aura of power, an essential asset in an exquisite environment of Imperial Court (*Aula*), of eastern influence (Pessoa - Rodrigo 2011: 53-56).

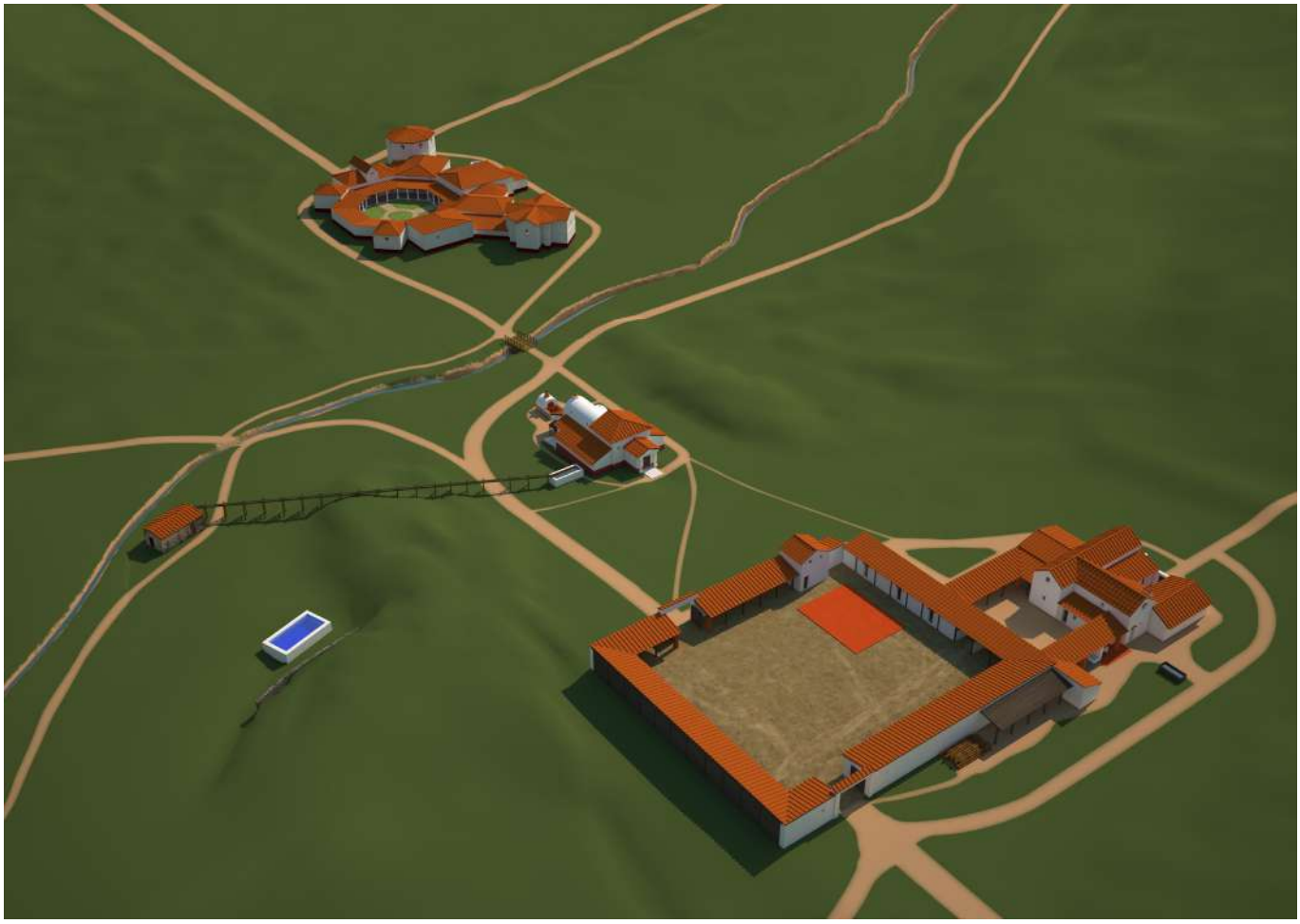


Figure 15
Reconstruction hypothesis of the Roman *Villa* of Rabaçal, Penela, Portugal. *Pars rustica*, in the foreground; Baths, Aqueduct and Watermill House, in the middle; *pars urbana* in the background. Author: Pedro Madeira 2011.

Acknowledgments

A word needs to be said about the thousands of hours of volunteer work in the archaeological field and in the office that have been dedicated, for decades, to discover and study the conservation of this heritage. Without them, certainly the present reflections would be very limited.

Bibliography – Kaynaklar

Abraços 2005 — M. de F. Abraços, Para a História da Conservação e Restauro do Mosaico Romano de Portugal, Tese de Doutoramento, Faculdade de Letras, Universidade Nova de Lisboa (Inventário do Mosaico Romano em Portugal: Anexo I – Inventário por Sítios; Anexo II – Catálogo dos Mosaicos Romanos das Colecções de Museus em Portugal).

AEIVRR — Actas do Encontro Internacional sobre Ciência e Novas Tecnologias Aplicadas à Arqueologia na Villa Romana do Rabaçal - 2009 - AEIVRR, Câmara Municipal de Penela, 2011.

AIVCIAG — Actas do IV Colóquio Internacional de Arqueologia en Gijón – Las Villae tardorromanas en el occidente del Império. Arquitectura e función, 2006, Ayuntamiento de Gijón, Universidad Autónoma de Madrid, Gijón, 2008.

Alarcão 1998 — J. de Alarcão, "A Paisagem rural romana e alto-medieval em Portugal", Conimbriga 37, 91-119.

Alarcão 2003 — J. de Alarcão, "Parecer", Plano de Salvaguarda da „Villa" romana do Rabaçal, Penela, Portugal, 141.

Arce et al. 1979 — J. Arce - L. Caballero Zoreda - M. A. Elvira, Valdetorres del Jarama, Madrid, Informe preliminar de las escavaciones arqueológicas, Primera Campaña 1978, Diputation Provincial de Madrid.

Arnau 2007 — A. C. Arnau, "El final de las „villae" en Hispania, siglos IV-VII D.C.", Bibliothèque de l'Antiquité tardive 7, Villas romaines -- Espagne -- Jusqu'à 711, Turnhout, 13-29.

Balmelle 2001 — C. Balmelle, Les Demeures Aristocratiques d'Aquitaine – Société et Culture de la l'Antiquité Tardive dans le Sud-Ouest de la Gaule, Illustrations Graphiques principalement par Marie – Pat Raynaud et Raymond Monturet, Bordeaux – Paris.

Buraca 2011a — I. Buraca, "A colecção de ânforas da Villa romana do Rabaçal", AEIVRR, Câmara Municipal de Penela, Museu do Rabaçal, 153-159.

Buraca 2011b — I. Buraca, "Estudo dos materiais cerâmicos de construção na Villa romana do Rabaçal", AEIVRR, Câmara Municipal de Penela, Museu do Rabaçal, 138-152.

Deus 2011 — M. de Deus, "Estudo preliminar das faunas malacológicas da Villa romana do Rabaçal. Campanhas 1984-1998", AEIVRR, Câmara Municipal de Penela, Museu do Rabaçal, 39-40.

Doria – Monteagudo - Piqueras s. d. — M. B. de Doria – R. C. Monteagudo – J. F. (Actium) Piqueras, La Villa romana de Can Farrerons (Premià de Mar, Maresme), Resultats de les darreres intervencions, Institut del Patrimoni Cultural de la Universitat de Girona.

Ferreira 2011 — M. A. Ferreira, "Vidro da Villa romana de Moroiços: escasso espólio, muito razoáveis certezas", AEIVRR, Câmara Municipal de Penela, Museu do Rabaçal, 170-182.

Gorges 2008 — J. G. Gorges, "L'Architecture des Villae romaines tardives: la creation et le développement du modèle tétrarchique", Actas do IV Colóquio Internacional de Arqueologia en Gijón – Las Villae tardorromanas en el occidente del Império. Arquitectura e función - AIVCIAG, 2006, Ayuntamiento de Gijón, Universidad Autónoma de Madrid, Gijón, 28-48.

Lancha - André 2000 — J. Lancha - P. André, Corpus dos Mosaicos Romanos de Portugal II, Conventus Pacensis 1, A Villa romana de Torre de Palma, Instituto Português de Museus, Lisboa.

Leveau - Buffat 2008 — P. Leveau – L. Buffat, "Les bâtiments agricoles et l'architecture des villas de la fin de l'Antiquité", AIVCIAG, 2006, 134-165.

Levi 1947 — D. Levi, Antioch Mosaic Pavements, Vol. 2, Princeton.

Maciel 1996 — J. Maciel, Antiguidade Tardia e Paleocristianismo em Portugal, E. A., Colibri, Universidade Nova, Lisboa.

Mantas 1985 — V. G. Mantas, "Dois novos miliários do território de Conímbriga", Biblos, 61, Faculdade de Letras, Universidade de Coimbra, 159-179.

Pereira et al. 2012 — I. Pereira - M. Pessoa - T. Silva, Moedas da Villa romana do Rabaçal (1984-2009), Penela, Portugal, Município de Penela (Catálogo de 1 a 377).

Pessoa 2011 — M. Pessoa, Villa romana do Rabaçal, Penela, Portugal - Um centro na periferia do Império e do Território da Ciuitas de Conímbriga, Função e contexto no âmbito da Arte e Sociedade da Antiguidade Tardia, Estudo de Mosaicos, I.H.A., Faculdade de Ciências Sociais e Humanas, Universidade Nova de Lisboa.

Pessoa - Rodrigo 2011 — M. Pessoa - L. Rodrigo, Guia. Villa romana do Rabaçal - um objecto de arte na paisagem serrana, Programa Promuseus, Rede Portuguesa de Museus, Câmara Municipal de Penela, Museu do Rabaçal.

Pessoa et al. 2004	M. Pessoa - L. Rodrigo - S. Steinert Santos, Villa romana do Rabaçal. Era uma vez..., Catálogo da Exposição Permanente do Espaço-museu do Rabaçal, Câmara Municipal de Penela e Terras de Sicó, Penela.
Pessoa et al. 2008	M. Pessoa - L. Rodrigo - J. L. Madeira - J. Burrows, "Villa romana do Rabaçal (Penela, Portugal): Plano de Salvaguarda 2007-2009. Dados e sugestões para a elaboração do Projecto de Coberturas e programa de musealização", AIVCIAG, 2006, Gijón, 661-679.
Pitcher 1997	L. P. Pitcher, "La Villa tardoantica du Palazzo Pignano", Projecto Europeu de Cooperação: Rabaçal, Penela (Portugal), Palazzo Pignano, Cremona (Itália), Valdetorres del Jarama, Madrid (Espanha), Eurocultures, Bruxelles, 27-29.
Ponte 2011	S. da Ponte, "Os instrumenta metálicos da Villa romana do Rabaçal (Moroiços-Penela)", AEIVRR, Câmara Municipal de Penela, Museu do Rabaçal, 122-130.
Ponte - Miranda 2011	S. da Ponte - J. Miranda, "Lucernas da Villa romana do Rabaçal, Penela, Portugal", AEIVRR, Câmara Municipal de Penela, Museu do Rabaçal, 131-137.
Quaresma 2011	J. C. Quaresma, "O quadro de importações de Terra Sigillata e de cerâmica de cozinha africana na Villa do Rabaçal, Penela (século IV a inícios do VI d.C.)", AEIVRR, Câmara Municipal de Penela, Museu do Rabaçal, 96-108.
Silva 2011	A. M. Silva, "A necrópole do século XVI instalada na Villa romana do Rabaçal: dos ossos aos indivíduos", AEIVRR, Câmara Municipal de Penela, Museu do Rabaçal, 28-35.
Teichner 2008	F. Teichner, Entre Tierra y Mar. Zwischen Land und Meer Architektur und Wirtschaftsweise ländlicher Siedlungsplätze im Süden der römischen Provinz Lusitanien (Portugal), Studia Lusitania, 3, Museo Nacioanal de Arte Romano, Mérida, Pórtico Librerías S. A., Zaragoza, 666p.
Uscatescu - Bueno 1997	A. Uscatescu – M. M. Bueno, "The Macellum of Gerasa (Jerasch, Jordan): from a market place to an industrial area", BASOR 307, 67-88.
Wickham 2005	C. Wickham, Framing the Early Middle Ages. Europe and the Mediterranean, 400-800, Oxford.
Vieira - Osório 2011	T. Vieira - A. B. Osório, "Poderá a Engenharia de Materiais contribuir para a «datação» de produtos siderúrgicos arqueológicos?", AEIVRR, Câmara Municipal de Penela, Museu do Rabaçal, 50-63.
Valente 2011	M. J. Valente, "Análise preliminar da fauna mamalógica da Villa romana do Rabaçal. Campanhas 1984-1998", AEIVRR, Câmara Municipal de Penela, Museu do Rabaçal, 36-38.
Vicente - Simões 2011	S. Vicente - E. Simões, "Cerâmica Comum / Louça de Cozinha, Mesa e Armazenamento da Villa romana do Rabaçal", AEIVRR, Câmara Municipal de Penela, Museu do Rabaçal, 109-121.

DOI: 10.26658/jmr.614902

JMR 12, 2019 149-160

Republikanische und kaiserzeitliche Mosaike im südlichen, küstennahen Latium. Ein quantitativer Analyseansatz

Latium'un Güney Kıyılarındaki Cumhuriyet ve İmparatorluk Dönemi Mozaikleri. Nicel Bir Analiz

Michael TEICHMANN*

(Received 28 February 2019, accepted after revision 01 October 2019)

Abstract

Republican and Imperial Mosaics in Southern Coastal Latium. A Quantitative Approach

This present paper aims at the distribution of mosaics in southern coastal Latium in Roman Republican and Imperial times. Data on extra-urban and rural settlement sites were gathered from publications and archives in a Geographic Information System.

Results of quantitative, GIS-based analyses (kernel-density-estimations) are presented for the respective areas. The analyses are not only based on the better preservered mosaics, which are of iconographic interest, but comprise all sites, where mosaic tesserae were observed. The absolute density of sites with mosaics is compared between different research areas. The validity of the results is assessed and methodological limitations of the interpretations are considered. The chosen approach regards mosaics primarily as indicators of wealth. Therefore it might be interesting in a broader methodological sense beyond the presented case study.

Keywords: *Central Italy, Mosaics in Southern Latium, kernel-density-estimation, spatial analyses, GIS.*

Öz

Bu makale, Roma Cumhuriyet ve İmparatorluk dönemlerinde Latium'un güney kıyılarında bulunan mozaiklerin dağılımını ele almaktadır. Şehir dışı ve kırsal yerleşim yerlerine ait veriler yayınlardan ve arşivlerden elde edilerek Coğrafi Bilgi Sistemine toplanmıştır.

İlgili alanlar için kantitatif, CBS tabanlı analizlerin sonuçları (öz yoğunluk değerlendirmesi) sunulmuştur. Analizler sadece ikonografik olarak ilgi çeken daha iyi korunmuş mozaiklere dayanmamakta, aynı zamanda mozaik tesseraların gözlemlendiği tüm alanları içermektedir. Mozaikli alanların mutlak yoğunluğu farklı araştırma alanları arasında karşılaştırılmıştır. Sonuçların geçerliliği değerlendirilmiş ve yorumların metodolojik sınırları dikkate alınmıştır. Seçilen yaklaşım mozaikleri öncelikle zenginlik göstergesi olarak değerlendirmektedir. Bu nedenle, sunulan vaka incelemesinin ötesinde daha geniş bir metodolojik yaklaşım için ilginç olabilir.

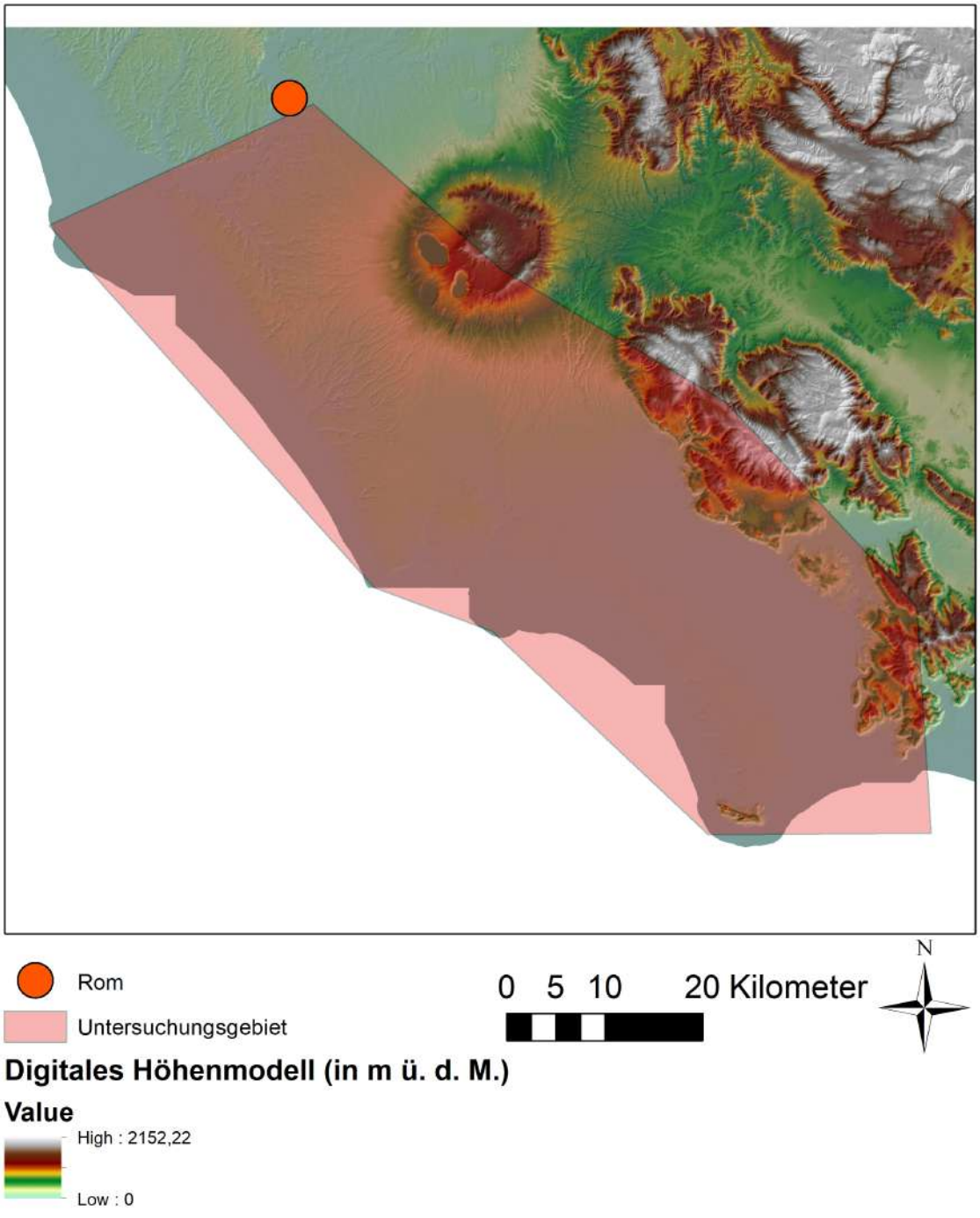
Anahtar Kelimeler: *Orta İtalya, Güney Latium Mozaikleri, öz yoğunluk değerlendirmesi, mekânsal analiz, CBS.*

* Michael Teichmann, Kirchbachstraße 35, 65191 Wiesbaden, Germany. ORCID ID: https://orcid.org/0000-0001-8073-4300. E-mail: mbwteichi@web.de

Introduction / Einleitung

Im Rahmen von Projekten an den Universitäten Kiel (Teichmann 2017) und Bonn (Teichmann 2018) wurden landschafts- und siedlungsarchäologische Fragestellungen im südlichen küstennahen Latium im Raum zwischen Rom und dem Tiber im Norden, den Albaner, den Ausoner und Lepiner Bergen im Osten und dem Tyrrhenischen Meer im Süden und Westen untersucht (Fig. 1). Im Zuge dieser Arbeiten wurden mehr als 6000 publizierte und in Archiven dokumentierte extraurbane und rurale archäologische Fundstellen aus der Zeit vom späten 4. Jh. v. Chr. bis zum frühen 4. Jh. n. Chr. in einem Geografischen Informationssystem aufgenommen (Fig. 2).

Figure 1
Überblick über das Untersuchungsgebiet.



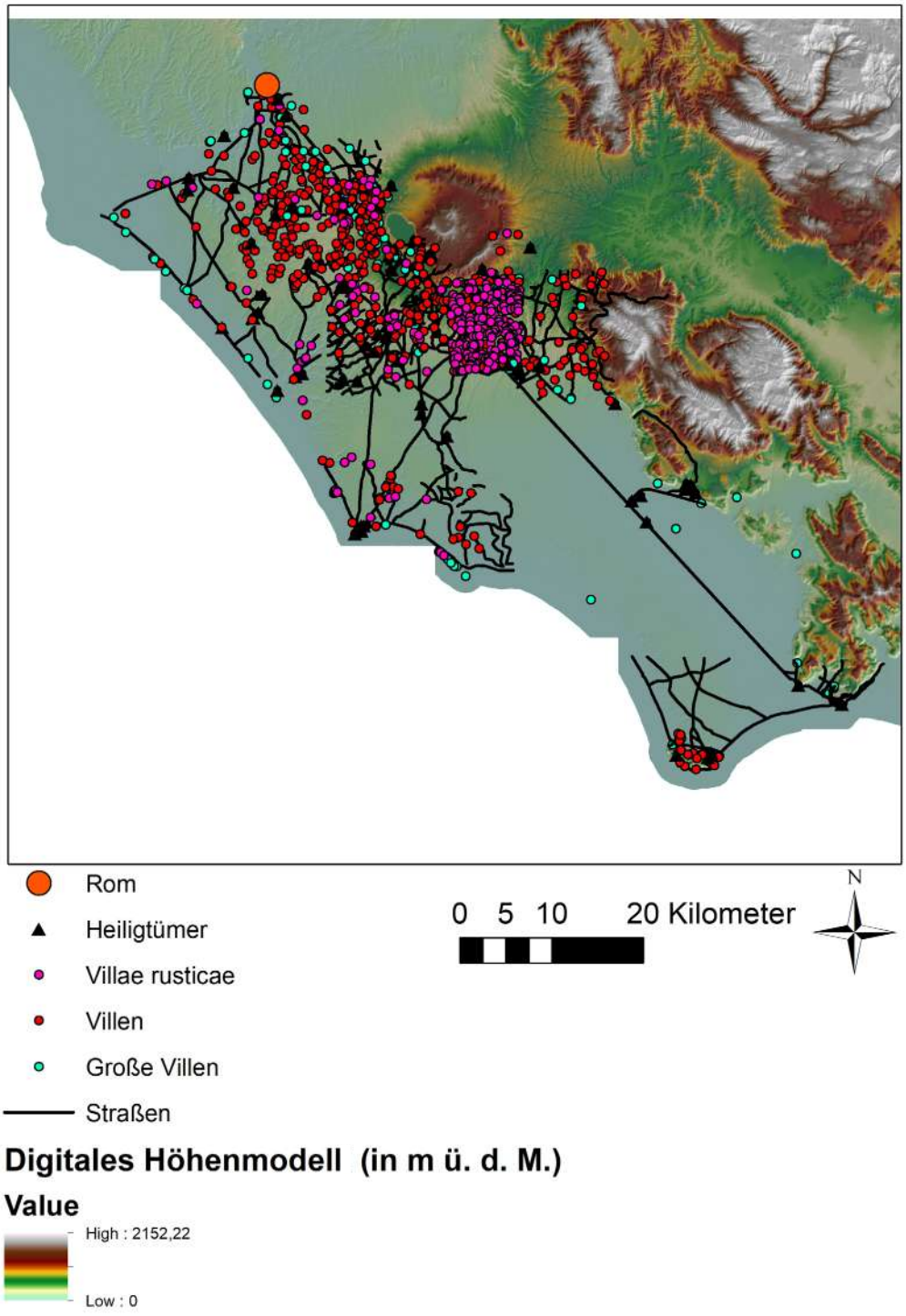


Figure 2
Siedlungsfundstellen, Heiligtümer und Straßen im Untersuchungsgebiet.

Da im südwestlichen Latium der Forschungs- und Publikationsstand für unterschiedliche Räume stark differiert, wurden Untersuchungsräume, für die eine flächige Datenaufnahme in Form einer archäologischen Karte vorliegt, separat analysiert (Fig. 3). Die Grenzen der Karten folgen keinen natürlichen Einheiten, sondern dem Blattschnitt der italienischen Militärkarten (im Maßstab 1: 25.000) oder modernen Verwaltungsgrenzen. Aufgrund dieser Datenlage können nicht alle Daten des südlichen Latiums für räumliche Analysen zusammengefasst werden. Stattdessen kann ein Gesamtbild lediglich durch Einzelanalysen für die jeweils besser erforschten Räume gewonnen werden.

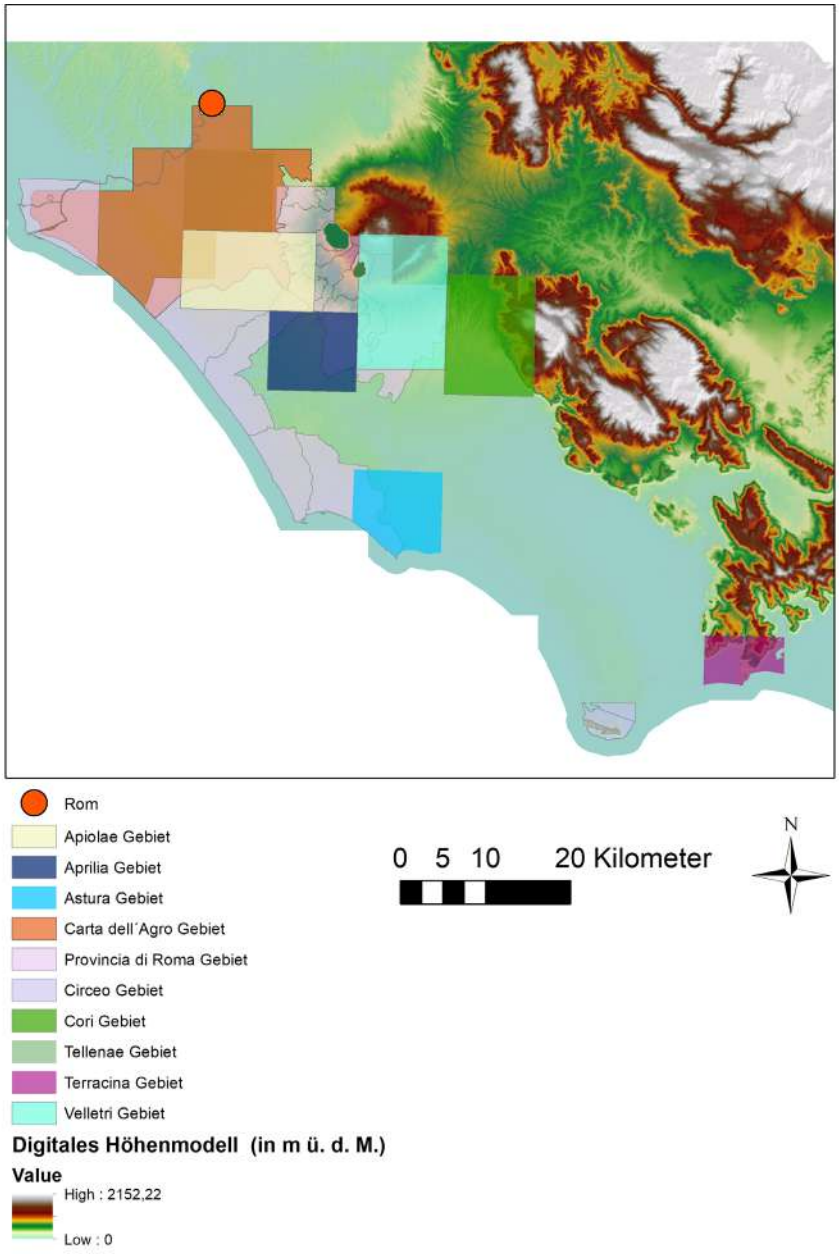


Figure 3
Untersuchungsräume im Untersuchungsgebiet.

In der Wahrnehmung der Mosaike im südlichen Latium dürften besonders gut erhaltene Einzelbefunde dominieren, die von ikonografischem Interesse sind. Zahlreiche Fundstellen, von denen lediglich einzelne, meist bei Oberflächenbegehungen entdeckte Mosaiktesserae bekannt sind, wurden hingegen abgesehen von ihrer Auflistung in archäologischen Überblicksberichten bisher wenig gewürdigt. Um diese Mosaike geht es in diesem Beitrag. Die Präsenz von Mosaiksteinen wird hier als elitärer Luxusindikator betrachtet, da Mosaike repräsentativen Charakter in Wohnbauten, Gräbern oder öffentlichen Gebäuden besaßen. In Zentralitalien fanden Bodenmosaike im privaten und öffentlichen Kontext im Laufe von Hellenisierungsprozessen Verbreitung, vornehmlich ab dem 1. Jh. v. Chr. (Bianchini 2010: 341). Glastesserae waren abgesehen von *opus vermiculatum* in Bodenmosaiken in Italien stets selten. Ihre Verwendung nahm für Wandmosaike zu bis sie letztlich vornehmlich verwendet wurden (Boschetti et al. 2011; Boschetti 2011). Ihre frühe Nutzungsphase begann im späten 2. Jh. v. Chr. und dauerte bis zum späten 1. Jh. v. Chr.

Forschungsfragen und Methoden

Im Zentrum der Untersuchungen standen folgende Forschungsfragen:

1. Wo treten Mosaikfundstellen in den einzelnen Untersuchungsräumen in größter Dichte auf?

2. Wie hoch ist die absolute Dichte von Tesserae-Fundstellen in den einzelnen Untersuchungsräumen?

Zur Beantwortung der ersten Frage wurden Kerndichteanalysen in einem Geografischen Informationssystem durchgeführt. Bei diesen wird das Gebiet mit Isolinien markiert, in dem eine untersuchte Stichprobe in der größten räumlichen Dichte beieinanderliegt. Die Untersuchungen wurden mit einem Werkzeug aus den GIS-Analyseinstrumenten ‚Hawth Tools' durchgeführt, das in der ESRI-Software ArcGIS 9.3.1 integrierbar ist. Die hier gezeigten Isolinien markieren das Gebiet, in dem jeweils 60 Prozent der Fundstellen von Mosaiken in größter räumlicher Dichte beieinanderliegen.

Zur Beantwortung der Frage nach der absoluten Dichte der Fundstellen mit Mosaiksteinen wird die Fläche der einzelnen Untersuchungsräume durch die Anzahl der Fundstellen geteilt. Eine entsprechende Berechnung ist sinnvoll, da sich die Untersuchungsräume in ihrer Größe deutlich unterscheiden. Durch die Betrachtung von Untersuchungseinheiten derselben Grundfläche sind absolute Unterschiede deutlicher erkennbar. Die Zuverlässigkeit der Analyseergebnisse und methodische Grenzen werden im Zuge der abschließenden Diskussion behandelt.

Ergebnisse

Kerndichteschätzung

Nun folgt eine Betrachtung der einzelnen Untersuchungsräume.

Südliche Provincia di Roma

Für die südliche Provincia di Roma wurden 237 Fundstellen erfasst, von denen Tesserae stammen (Amendolea 2004). In diesem Untersuchungsraum gibt es mehrere Verteilungslinsen:

In größter Dichte treten die Tesserae-Fundstellen in den Albaner Bergen auf (Fig. 4), wo zahlreiche Villen gelegen waren. Hier sind im Norden das Marcandreola-Gebiet, das Umland von Albano Laziale und das Gebiet vom Nemi-See bis nach Velletri zu nennen. Im küstennahen Gebiet und in der Ebene finden sich bis auf eine Ausnahme beim Fosso dello Sbirro nördlich von Antium keine Dichtecluster von Mosaiken.

Carta dell´Agro Romano

Im südlichen Bereich der Carta dell´Agro Romano wurden 76 Fundstellen von Mosaiktesserae (Fig. 5) aufgenommen (Comune di Roma 1988). Hierfür wurde die Originaldokumentation zur Carta dell´Agro Romano bei der Sovrintendenza Capitolina gesichtet, da die archäologische Karte selbst ohne Metadaten zu den vor Ort beobachteten Funden und Befunden publiziert wurde.

Die größte Dichte weisen Mosaikfundstellen südlich der Via Appia, in einem von der antiken Via Ardeatina erschlossenen Gebiet und in einer Dichtelinse um Trigoria und die Tenuta di Porta Medaglia auf. Somit sind sie besonders im östlichen Teil der Ebene und im Vorland der Colli Albani dicht beieinander gelegen.

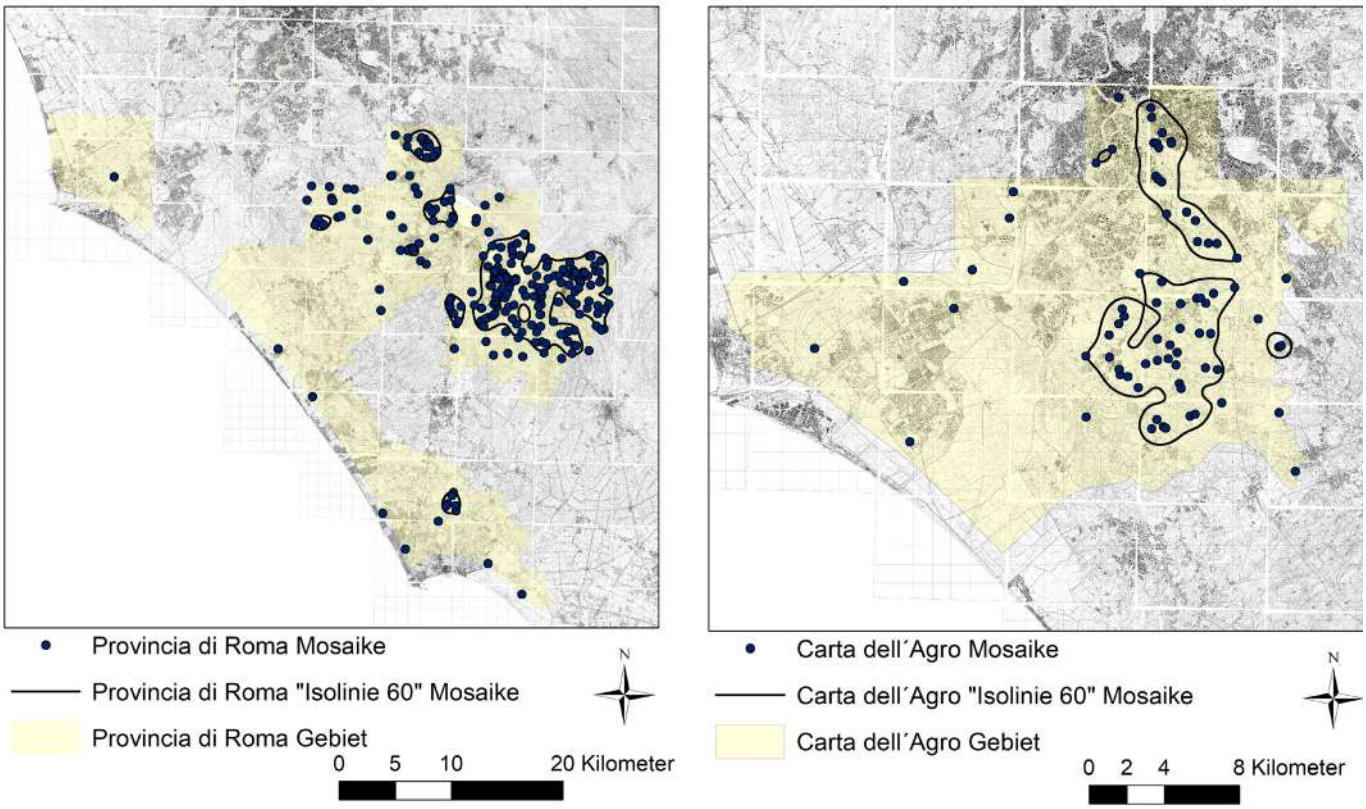


Figure 4
Verteilungsbild der Mosaike: Südliche Provincia di Roma.

Figure 5
Verteilungsbild der Mosaike: Südliche Carta dell´Agro Romano.

Weitere Mosaikfundstellen gab es nahe der Via Ostiense (Serra 2007) als zentraler Verkehrsachse zwischen Rom und Ostia, im Umfeld von Ostia als wichtiger Hafenstadt und nahe der meist als Via Severiana angesprochenen Küstenstraße (Westphal 1829: 16–17; Cassatella 2004; Fogagnolo – Valenti 2005: 7).

Tellenae, Apiolae und Velletri

Neben dem Überblickswerk zum gesamten Agro Romano erlauben einzelne kleinräumigere archäologische Karten zu Tellenae (De Rossi 1967), Apiolae (De Rossi 1970) und Velletri (Lilli 2008; Strini et al. 2001; Vinciotti 1999–2000) einen kleinräumigeren Blick auf Ausschnitte des Gesamtgebiets.

Im Gebiet von Tellenae wurden insgesamt 31 Mosaikfundstellen dokumentiert (Fig. 6), die mit größter Dichte in drei Dichtelinsen im Nordosten (um Tor Carbone), der größten Linse im Südosten (um Castel di Leva) und einer weiteren im Südwesten (südlich der Tenuta di Tor Pagnotta) auftreten. Das Fehlen von Mosaikfundstellen im Nordwesten der archäologischen Karte, dürfte auf die Bebauungsdichte zurückzuführen sein, die dort deutlich höher ist als in anderen Bereichen des auf der Karte dargestellten Gebiets.

Um Apiolae (Fig. 7) gibt es 36 Fundstellen von Mosaiken, die im Norden und Osten des Gebiets in größter Dichte auftreten.

Die Verteilung der 177 Mosaikfundstellen um Velletri (Fig. 8) folgt der natürlichen Topografie. Die dominante Dichtelinse im Zentrum der archäologischen Karte spiegelt vornehmlich Villenstandorte an den Ausläufern der Albaner Berge wider. Die Mosaikfundstellen im Süden der Karte, darunter die Standorte in der Dichtelinse im Südosten, sind bereits in der Ebene gelegen.

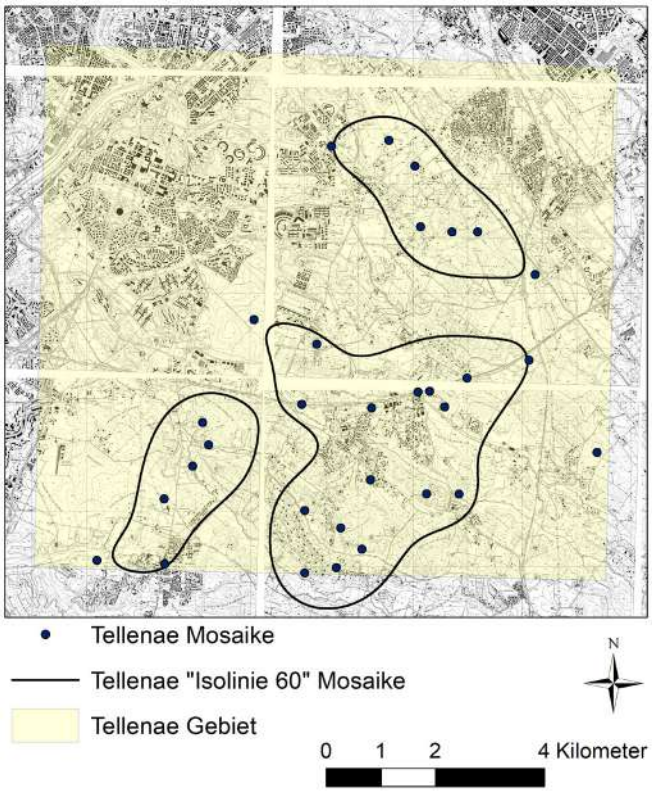


Figure 6
Verteilungsbild der Mosaike: Tellenae Gebiet.

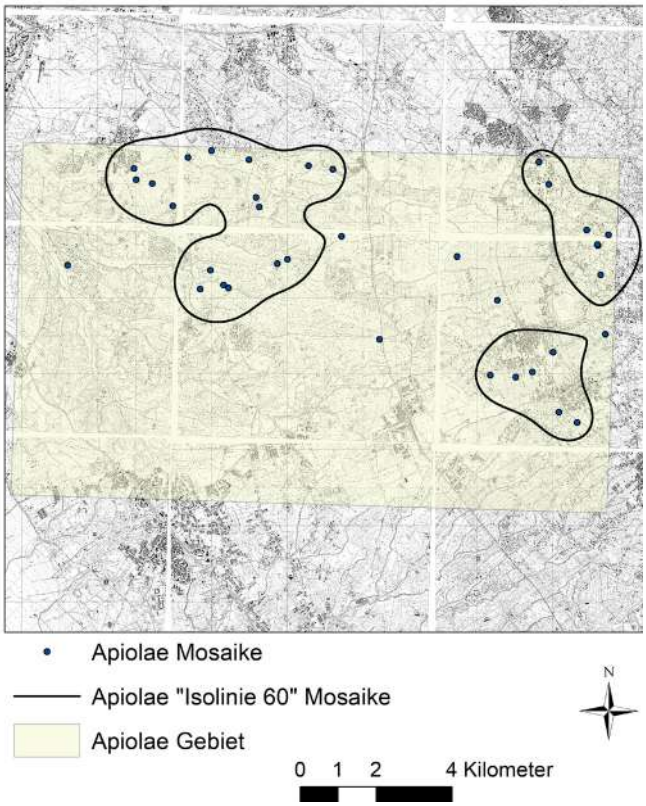


Figure 7
Verteilungsbild der Mosaike: Apiolae Gebiet.

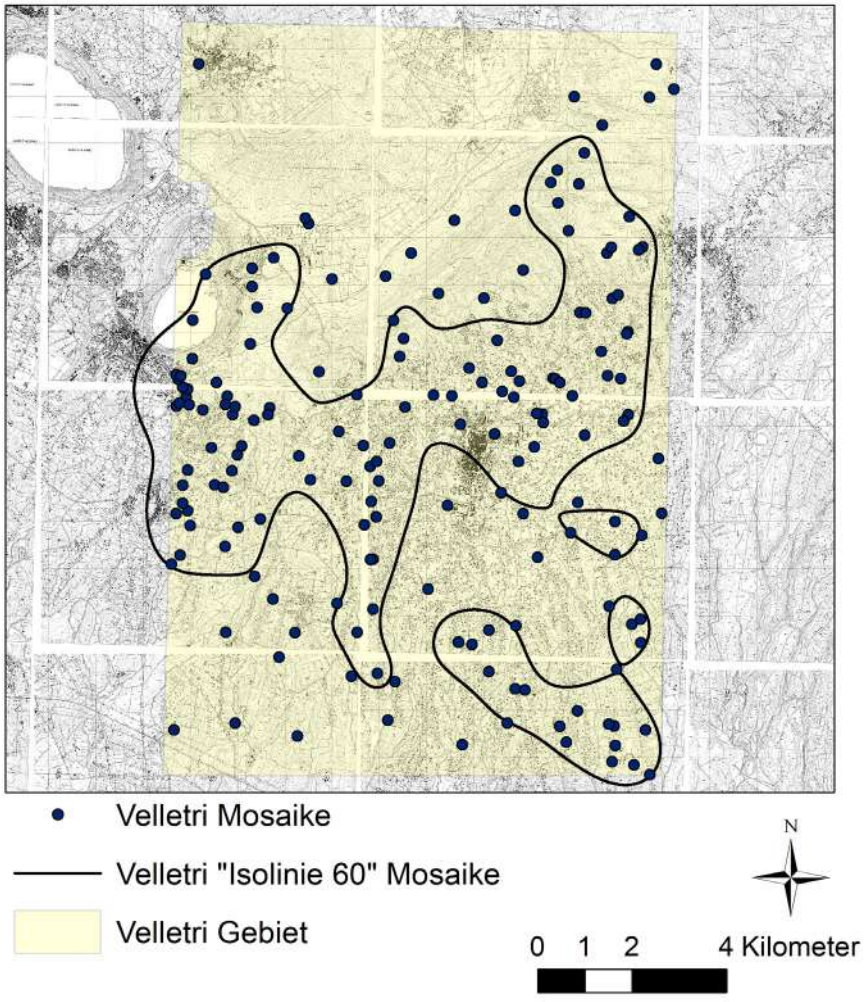


Figure 8
Verteilungsbild der Mosaike: Velletri Gebiet.

Aprilia

Von den 20 Mosaikfundstellen (Fig. 9) im Aprilia Gebiet (Pompilio 2009) ist eine klare Konzentration im Norden und dort besonders im Nordosten zu beobachten, da dieses Gebiet nahe an der Via Appia lag.

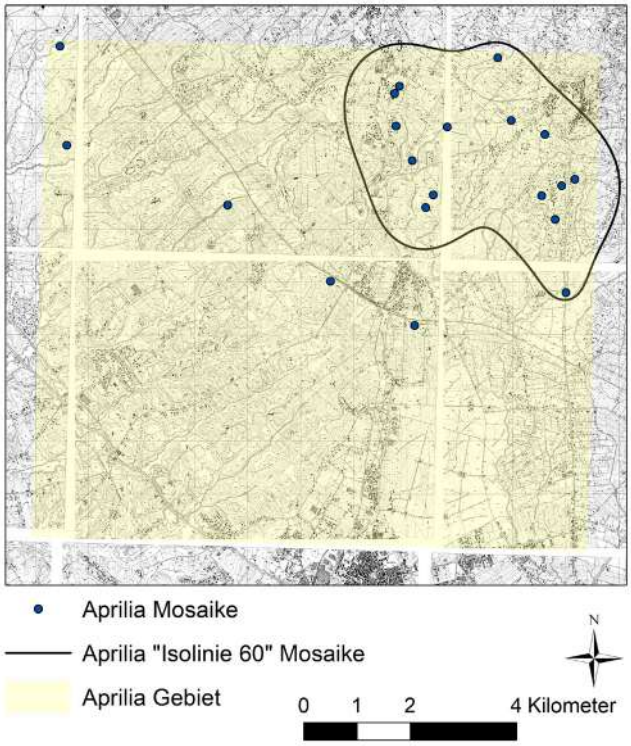


Figure 9
Verteilungsbild der Mosaike: Aprilia Gebiet.

Cori

Im extraurbanen Gebiet der archäologischen Karte von Cori (Brandizzi Vittucci 1968) sind insgesamt 13 Mosaikfundstellen (Fig. 10) bekannt. Die Grafik zeigt, dass hier nun alle Fundstellen innerhalb der Isolinien dargestellt werden, da die Fundstellenanzahl für die Differenzierung einzelner Dichtecluster zu gering ist.

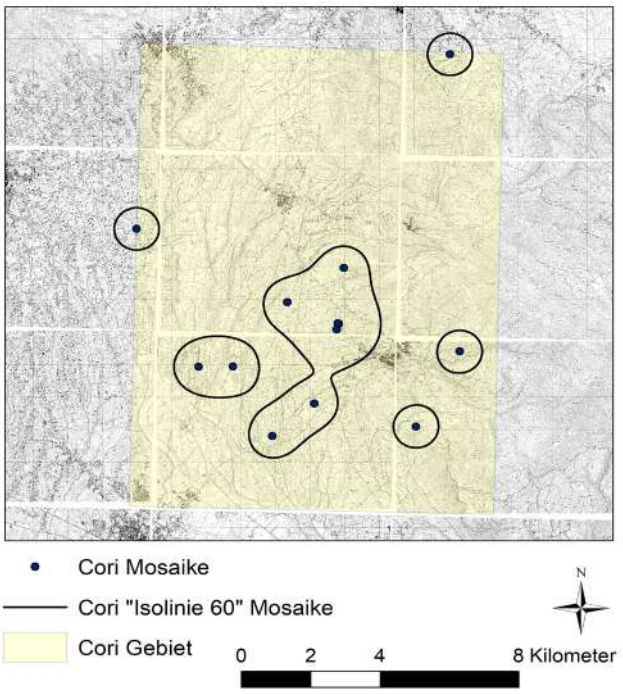


Figure 10
Verteilungsbild der Mosaike: Cori Gebiet.

Astura, Circeo-Massiv und Terracina

Noch stärker wirkt sich das für die Untersuchungsräume am Meer um Astura (Fig. 11) (Piccarreta 1977), um das Circeo-Massiv (Fig. 12) (Lugli 1928) und um Terracina (Fig. 13) (Lugli 1926) aus, wo jeweils nur wenige Mosaike außerhalb von Siedlungen bekannt sind.

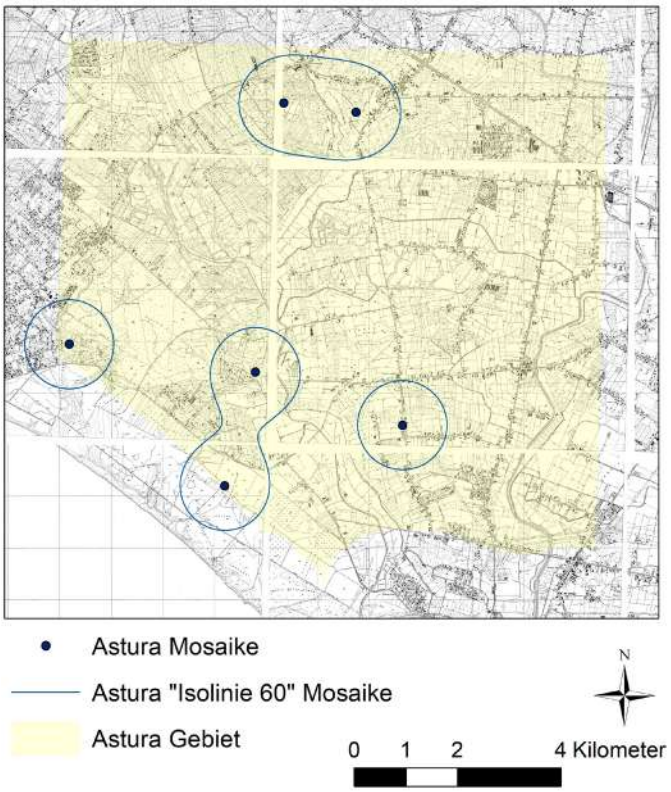


Figure 11
Verteilungsbild der Mosaike: Astura Gebiet.

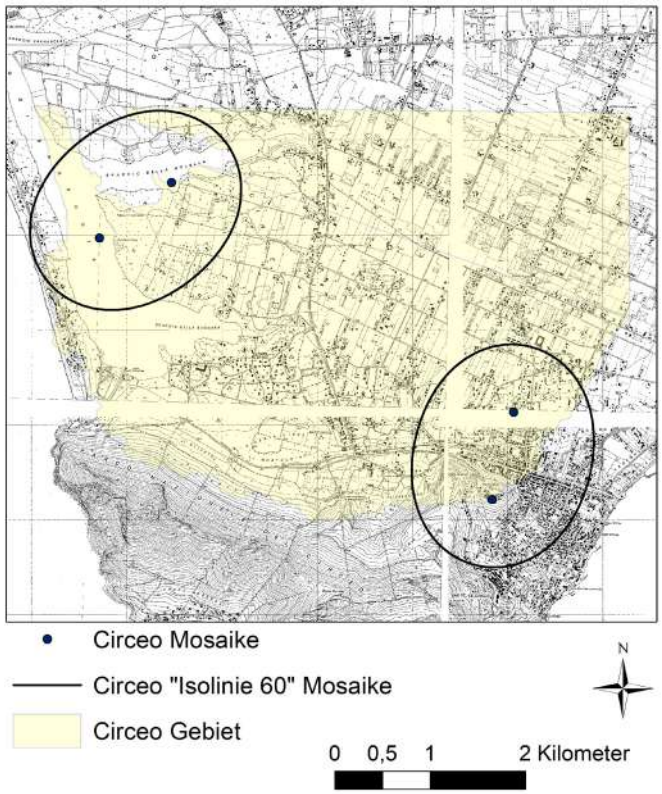


Figure 12
Verteilungsbild der Mosaike: Circeo Gebiet.

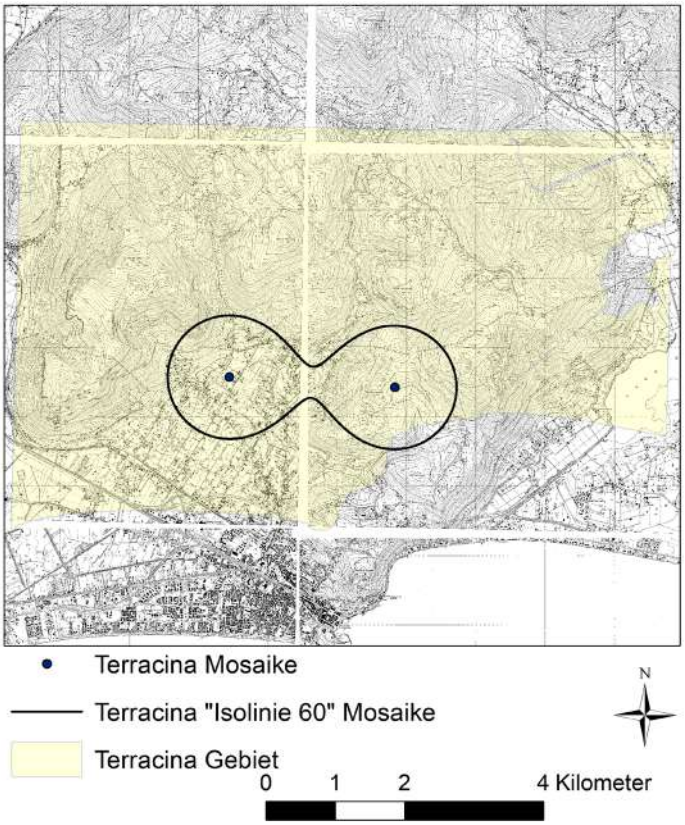


Figure 13
Verteilungsbild der Mosaike: Terracina Gebiet.

Absolute Fundstellendichte

Name des Untersuchungsgebiets	Fläche des Gebiets in Quadratkilometern	Fundstellen mit Mosaiken	Quadratkilometer pro Mosaikfundstelle
Apiolae	146,59	36	4,1
Aprilia	98,16	20	4,9
Südliche Carta dell´Agro Romano	428,22	76	5,63
Circeo	21,63	4	5,4
Cori	148,78	13	11,4
Südliche Provincia di Roma	9200	237	38,82
Tellenae	99,83	31	3,2
Terracina	42,28	2	21,14
Velletri	165,5	177	0,935

Tabelle 1
Die Tabelle zeigt in der linken Spalte den Namen des jeweiligen Untersuchungsgebietes, daneben die Fläche des Gebiets in Quadratkilometern (Abweichungen zur Fläche der ursprünglich publizierten Karten können sich durch den Ausschluss von Wasserflächen und Verzerrungen bei der Referenzierung erklären). In der dritten Spalte ist die Anzahl der extraurbanen Fundstellen mit Mosaiksteinen angegeben. Rechts ist die Zahl der Quadratkilometer verzeichnet auf die jeweils eine Fundstelle mit Tesserae kommt.

Die absolute Dichte (Fig. 14) ist im Gebiet von Velletri am größten (Tab. 1), da hier eine Fundstelle mit Tesserae auf 0,94 Quadratkilometer kommt. In zahlreichen benachbarten Gebieten der Campagna Romana liegen die Werte im Bereich zwischen 3,2, wie im Gebiet von Tellenae und 5,6 für die Carta dell´Agro Romano. Deutlich geringer ist die Mosaikendichte in den Gebieten von Cori (11,4), Terracina (21,14) und für die gesamte südliche Provincia di Roma (38,82).

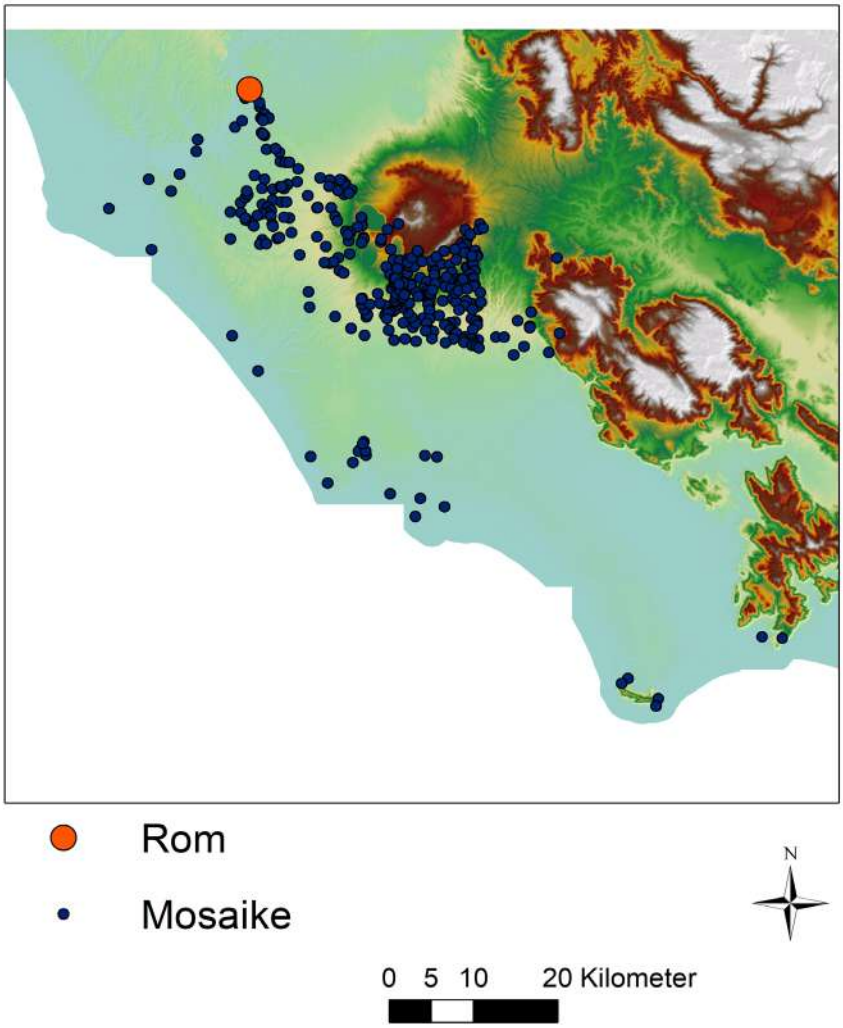


Figure 14
Extraurbane und rurale Tesserae-Fundstellen im Untersuchungsgebiet.

Discussion / Diskussion

Bei der Würdigung der Aussagen, die sich aus dem Vergleich der absoluten Dichte ableiten lassen, müssen einige methodische Implikationen und potentielle Fehlerquellen berücksichtigt werden:

Der Befund zeigt große Unterschiede in der absoluten Dichte für unterschiedliche Räume im südlichen küstennahen Latium. Besonders häufig treten Fundstellen mit Mosaiken im Umland von Velletri, aber auch in anderen Gebieten der nahe an Rom gelegenen Campagna Romana und der Albaner Berge auf. In abgelegeneren Gebieten – etwa um Cori – dünnt sich der Befund hingegen aus. Der niedrige Wert für Terracina mag sich daraus ergeben, dass dort einige Mosaike in der Stadt selbst vorhanden waren. Anders als bei anderen Untersuchungsräumen nimmt hier das Siedlungsgebiet einer antiken Stadt einen großen Teil der publizierten archäologischen Karte ein.

Für die archäologische Karte der Provinz von Rom ist anzumerken, dass diese auf einer bibliographischen Zusammenstellung beruht und somit Flächen, für die es einen guten Publikations- und Forschungsstand gibt, mit Gegenden zusammengefasst werden, für die (noch) keine Daten von intensiven archäologischen Begehungen vorliegen.

Die hier verwendeten Daten stammen aus unterschiedlichen Quellen. Die originale Datenerhebung im Feld fand in einer Zeitspanne von etwa 90 Jahren seit den 1920er Jahren statt. Somit ist zu berücksichtigen, dass sich die Wahrnehmung der archäologischen Kulturlandschaft durch Archäologen deutlich wandelte. Ältere Berichte haben den Vorteil, dass Landschaften und Monumente häufig in einem Zustand beobachtet wurden, in denen sie weniger von Zerstörung beeinträchtigt waren als in heutiger Zeit. Jüngere Daten sind hingegen häufig detaillierter, da inzwischen viel mehr über einzelne Materialgruppen bekannt ist und die heutige Dokumentation stärker differenziert. Dieses Problem sollte allerdings bei Mosaiksteinen weniger ins Gewicht fallen als beispielsweise bei bestimmten Keramiktypen, da Mosaike sich bereits früh des wissenschaftlichen Interesses erfreuten.

Weitere Probleme der Surveyarchäologie umfassen geomorphologische Veränderungsprozesse, die zur Überlagerung der einstigen Befundsituation geführt haben können (Teichmann 2017: 47–63).

Wieweit die Ergebnisse durch den Forschungsstand oder durch reale Verteilungsunterschiede in der Antike bedingt sind, lässt sich nicht abschließend beantworten.

Die Rolle des Forschungsstandes lässt sich beispielsweise daran erkennen, dass die Publikation von Lilli (2008) zum Umland von Velletri eine sehr junge Arbeit ist, die sehr detailliert vorgelegt wurde, wohingegen es deutlich erkennbare "fundleere Flecken" auf der Karte der Provinz von Rom gibt. Andererseits zeichnen sich bei der Verteilung der Mosaike statistisch relevante, modellierbare Standortpräferenzen ab. Villen und Gräber der Eliten waren nicht zufällig in der Landschaft gelegen, sondern folgten spezifischen Verteilungsmustern im Hinblick auf kulturelle und naturräumliche Faktoren (Teichmann 2017: 134–142). So wurden etwa gut entwässernde und gut durchlüftete Standorte gewählt, die weithin sichtbar waren und von denen aus Städte gut zu erreichen waren. Entsprechende als günstig empfundene Standortfaktoren waren dort stärker gegeben, wo wir eine Häufung von Mosaiken im Befundbild beobachten können.

Die hier genannten methodischen Grenzen sind stets zu bedenken, doch sprechen sie nicht dagegen, den heute bekannten Wissenstand als Ausgangspunkt für eine modellhafte Analyse zu nehmen, mithilfe derer Mosaike als Luxusindikatoren gewinnbringend in neuem Licht betrachtet werden können. Die Dichteclusterkartierung erwies sich als Erfolg versprechende Methode, um die Dichte von Mosaiken zu kartieren und somit "*hotspots*" ihrer Verbreitung zu identifizieren. Ein Desiderat zukünftiger Forschung wäre ein Vergleich der Ergebnisse zur Mosaikenverteilung mit dem Verteilungsbild der gesamten Siedlungsaktivität, also etwa der räumlichen Verteilung von Villen und villae rusticae, sowie mit dem Dichteclusterbild weiterer Luxusindikatoren wie etwa Marmorfragmenten und Skulpturenfunden.

Danksagung

Die präsentierten Ergebnisse wurden am Rande eines Promotionsprojekts an der Universität Kiel und an der Universität Bonn erarbeitet. Diese Arbeiten wurden von zahlreichen Institutionen und Kolleg*innen unterstützt. Ihnen sei an dieser Stelle herzlich gedankt.

Bibliography – Kaynaklar

Amendolea 2004	B. Amendolea, Un repertorio bibliografico per la carta archeologica della provincia di Roma, Roma.
Bianchini 2010	M. Bianchini, Le tecniche edilizie nel mondo antico, Roma.
Boschetti 2011	C. Boschetti, Vitreous Materials in Early Mosaics in Italy: Faience, Egyptian Blue and Glass, JGS 53, 59–91.
Boschetti et al. 2011	C. Boschetti - J. Henderson - C. Leonelli, ",Promote' The Interdisciplinary Provenance of Italian Mosaic Glass Tesserae", B. Angelelli (Hrsg.), Atti del XVI colloquio dell'Associazione italiana per lo studio e la conservazione del mosaico con il patrocinio del Ministero per i Beni e le attività culturali e del Consiglio Nazionale delle Ricerche (Palermo, 17-19 marzo 2010 - Piazza Armerina, 20 marzo 2010)) (Aiscom), 85–89, Tivoli (Roma).
Brandizzi Vittucci 1968	P. Brandizzi Vittucci, Cora, Forma Italiae 1, 5, Roma.
Cassatella 2004	A. Cassatella, "La questione della Via Severiana e le nuove ricerche", C. Belardelli – L. de Maria – F. Fei – A. Toro (Hrsg.), Vie Romane del Lazio, Roma, 79–94.
Comune di Roma 1988	Comune di Roma (Hrsg.), Carta storica archeologica monumentale e paesistica del suburbio e dell'agro romano, Roma.
De Rossi 1967	G. M. De Rossi, Tellenae, Forma Italiae 1, 11, Roma.
De Rossi 1970	G. M. De Rossi, Apiolae, Forma Italiae 1, 15, Roma.
Fogagnolo – Valenti 2005	S. Fogagnolo – M. Valenti, Via Severiana, Roma.
Lilli 2008	M. Lilli, Velletri, Carta archeologica: Velletri-Le Castella (IGM 150 II SO-158 IV NE) (Rom 2008), Roma.
Lugli 1926	G. Lugli, Ager Pomptinus 1: Anxur–Tarracina, Roma.
Lugli 1928	G. Lugli, Ager Pomptinus 2: Circeii, Roma.
Piccaretta 1977	F. Piccarreta, Astura, Forma Italiae 1, 11, Firenze.
Pompilio 2009	F. Pompilio, Aprilia: (I.G.M. F. V IV NE) Carta Archeologica d'Italia, Roma.
Serra 2007	S. Serra, Via Ostiense - Via Portuense, Antiche Strade Lazio, Roma.
Strini et al. 2001	E. Strini - V. Ciccotti - G. Manganello, Carta Archeologica del Territorio di Velletri, Velletri.
Teichmann 2017	M. Teichmann, Mensch und Landschaft im südwestlichen Latium in der römischen Antike, Wien.
Teichmann 2018	M. Teichmann, Quantitative Untersuchungen zum römischen Siedlungswesen im südlichen Latium (unpublizierte Dissertation), Bonn.
Vinciotti 1999–2000	F. Vinciotti, Tesi di Laurea Topografia Antica del Territorio di Velletri (IGM F 158 I NO Le Castella) Anno Accademico 1999–2000 (unpublizierte Abschlussarbeit), Roma.
Westphal 1829	J. H. Westphal, Die Römische Kampagne in topographischer und antiquarischer Hinsicht, Berlin und Stettin.

DOI: 10.26658/jmr.614910

JMR 12, 2019 161-177

Contribution to the *Corpus* of the Roman Mosaics of *Conuentus Bracaraugustanus*: Study of the Geometric Mosaic of the Roman *Villa* of Sendim, Felgueiras, Porto, Portugal

Conuentus Bracaraugustanus Roma Mozaikleri Korpusuna Katkı: Felgueiras, Porto, Portekiz'deki Sendim Roma Villası'nın Geometrik Mozaiğinin İncelenmesi

Licínia WRENCH* - Marcelo MENDES PINTO** - Fátima ABRAÇOS***

(Received 15 January 2018, accepted after revision 02 October 2019)

Abstract

The objective of our work is to study for the first time a Roman mosaic from the Roman Villa of Sendim, within the framework of a project coordinated by Fátima Abraços. This project aims to survey and analyse the Roman mosaics belonging to the Conuentus Bracaraugustanus, whose capital city was Bracara Augusta.

The Villa, in the parish of Sendim, Felgueiras, Porto, is part of the mentioned Conuentus. Its excavation began in 1992, with the uncovering of several compartments of a domus and of structures belonging to the balnea. Later, the musealisation of the archaeological site was carried out with the conservation in situ of the mosaic fragments found in a cubiculum.

The collected archaeological material established the occupation of the Villa between the 1st and 6th centuries AD. It also ascertained that the domus had a phase of restructuring and expansion between the end of the 3rd century and the end of the 4th century. This would correspond to the completion of the analysed mosaic.

Keywords: *Villa of Sendim, Portugal, Conuentus Bracaraugustanus, geometric mosaic, Corpus of the Roman Mosaics.*

Öz

Çalışmanın konusu Fátima Abraços tarafından koordine edilen bir proje çerçevesinde, Sendim Roma Villası'ndan ilk kez bir Roma mozaiğinin incelenmesidir. Bu proje, başkenti Bracara Augusta olan Conuentus Bracaraugustanus'daki Roma mozaiklerini incelemeyi ve analiz etmeyi amaçlamaktadır.

Felgueiras, Porto'da bulunan Sendim mahallesindeki Villa, Conuentus'un bir parçasıdır. Kazı 1992 yılında, bir domusun ve balneaya ait yapıların bazı bölümlerinin açığa çıkarılmasıyla başlamıştır. Daha sonra, arkeolojik alanın müze haline getirilmesi, cubiculumda bulunan mozaik parçalarının yerinde korunması ile gerçekleştirilmiştir.

* Licínia Wrench, Investigadora do Instituto de História da Arte – Faculdade de Ciências Sociais e Humanas, Universidade Nova de Lisboa/Av. de Berna, 26-C/1069-061 Lisboa, Portugal. ORCID ID: https://orcid.org/0000-0002-5780-2018. E-mail: wrench.licinia@gmail.com

** Marcelo Mendes Pinto, Gabinete de Arqueologia da Câmara Municipal de Felgueiras. Investigador CITCEM – Centro de Investigação Transdisciplinar "Cultura, Espaço e Memória". Faculdade de Letras da Universidade do Porto. Via Panorâmica s/n - 4150-564 Porto, Portugal. ORCID ID: https://orcid.org/0000-0002-6270-8843. E-mail: jmmendespinto@gmail.com

*** Maria de Fátima Abraços, Investigadora do Instituto de História da Arte – Faculdade de Ciências Sociais e Humanas, Universidade Nova de Lisboa/Av. de Berna, 26-C/1069-061 Lisboa, Portugal. ORCID ID: https://orcid.org/0000-0003-0997-9553. E-mail: maria.abracos1951@gmail.com

Toplanan arkeolojik materyal, Villa'nın kullanımının MS 1. ve 6. yüzyıllar arasına tarihlendiğini göstermektedir. Ayrıca, domusun 3. yüzyılın sonu ile 4. yüzyılın sonu arasında bir yeniden yapılanma ve genişleme aşamasına sahip olduğu tespit edilmiştir. Bu, analiz edilen mozaiğin tamamlandığı döneme karşılık gelmektedir.

Anahtar Kelimeler : *Sendim Villası, Portekiz, Conuentus Bracaraugustanus, geometrik mozaik, Roma Mozaikleri Korpusu.*

Introduction

The parish of Sendim, municipality of Felgueiras, district of Porto, is about 35 km from Braga, integrating, in Roman times, the *Conuentus Bracaraugustanus* (Fig. 1).

Figure 1
Location of the Roman *Villa* of Sendim, Felgueiras, Porto, Portugal (Google earth).

In 1992, in the opening of the foundations of a house south of the church of S. Tiago of Sendim, remains of walls, many fragments of *tegulae* and abundant vestiges of Roman ceramics of varied typology were found (Fig. 2).

Figure 2
The Roman *Villa* of Sendim and the church of S. Tiago of Sendim (Google earth).

Figure 3
The Interpretive Centre and Archaeology Office (©.Mendes Pinto).

The construction work was interrupted, with the agreement of the owner and an emergency archaeological excavation was carried out by undertaking two surveys that not only confirmed the importance of the elements detected but it immediately revealed the existence of geometric mosaic-paved floors, reinforcing the hypothesis of the existence of a Roman *Villa*.

The archaeological excavations that followed, under the direction of Marcelo Mendes Pinto and with the technical support of the Regional Services of Archaeology of the Northern Area of the old Portuguese Institute of Cultural Heritage (IPPC) and the collaboration of the Professional School of Archaeology of Freixo (Marco de Canaveses, Porto), had the main aim to understand the scattering of the ruins across the land.

The state of conservation of the walls and floors at the time made it possible to fully glimpse the layout of the *pars urbana* plan of a *Villa*, head of a large agricultural property of the Roman period, for the first time on the north part of the river Douro.

It was only in 1997 that the archaeological site was classified as Property of Public Interest (Law Decree no. 67/97 of 31st December). In the same year, and by the initiative of the Municipality of Felgueiras, the archaeological excavations were resumed and have been carried out regularly since then, leading to an in-depth study of the origin of the Roman settlement in the region until the arrival of the Suevi and the way the village managed to last throughout barbarian times.

The estate exhumed in the archaeological excavations is very varied and some of the most representative pieces are on exhibition in the Interpretive Centre that supports the ruins. The excavations Archaeology Office is located in the same place (Fig. 3).

Geographical Location of the *Villa*

The ruins are located in a northwest-facing spur at the base of the Castro of Sendim, which has been populated from the 4th century BC until at least the beginning of the 2nd century AD.

The spur dominates a wide valley nestled between the castro to the southeast, the hills of Santa Quitéria-S. Domingos to the west, and the foothills of the Sabagudo mountain range to the northeast and to the east, where the Jugueiros river flows (Figs. 4-5).

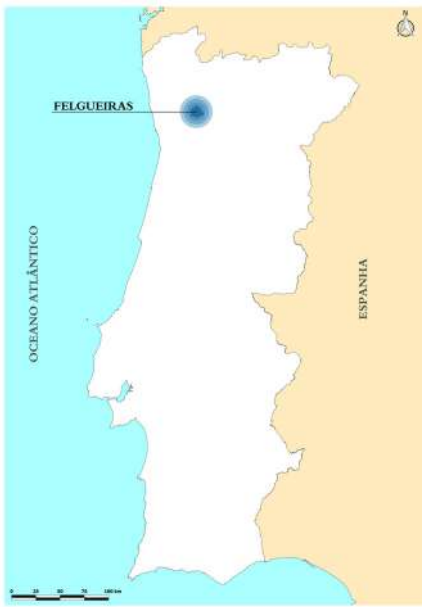


Figure 4
Location of the parish of Felgueiras, Porto (©Mendes Pinto).

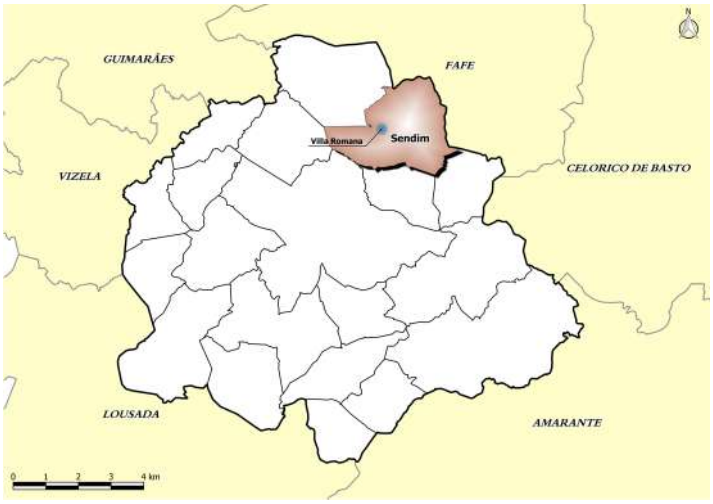


Figure 5
Location of the Roman *Villa* of Sendim, in the parish of Felgueiras, Porto, Portugal (©Mendes Pinto).

Sendim controlled the Jugueiros valley, through which the crossing between the valley of the Vizela river and the Sousa river basin and the Tâmega river valley was done. It was, therefore, an important settlement, since in conjunction with the castro of Senhora Aparecida, it also controlled the access to the tin mines of the Seixoso region, which had been fundamental to the bronze metallurgy since the Second Millennium[1].

The house, whose remains have been excavated systematically since 1997, seems to be the result of the expansion and the remarkable improvement of the late third and early fourth century of another building which had previously existed here in the second half of the first century. This can be seen by the stratigraphy by the south façade of the building, where, in the deepest layers behind the *triclinium* and in the foundation ditches that point to its probable construction for the Flavian period, a *dupondius* from Tiberius issued between 16 and 22 AD with marks of intense circulation appeared, as well as ceramic fragments in *Terra Sigillata Hispanica* (TSH), polished fine grey ceramics (Centeno et al. 2014: 291-308) and thin-walled pottery with mammillary decorations. There have also appeared fragments of the so-called "*bracarense* ware", with chronologies established between the middle of the first century and the second century (Morais 2005; Delgado - Morais 2009: 25-32).

The Master of the *Domus* and the Building Programme

The name of those who settled here and built this great manor house is not known to us at the current state of the investigation, but it was probably a Roman lord of fortune, perhaps of *Bracara Augusta* and possibly connected to his administration, who decided well on the economic potential of the region.

As mentioned in the medieval Portuguese documentation of the 12th century, the place name Sendim seems to derive from the genitive of the anthroponym of Germanic origin *Sendini*, of *Sendinus*, as noted by Ruy de Serpa Pinto in 1932. When he found Roman vestiges near this place, he considered them as belonging to a *Villa* that he called *Villa Sendini* (Pinto 1934: 376-380).

The building programme of the house (Fig. 6) as we know it corresponds to its last phase of the time when it was last in use, and it develops around a large rectangular central space; the peristyle, probably a portico, to which the *triclinium* was opened, the noble room of the house, which at this stage, and by its large dimensions, may already be called *œcus*.

The access to the bedrooms, *cubicula*, was made through the two big corridors that flank the peristyle; two open compartments; living rooms; kitchen; pantries and the other compartments. On the north side of the house, at the other end of the peristyle, another large room paved with mosaics, still only partially excavated, seems to function as a summer *triclinium* (or *œcus*), but cooler.

To the west side, there is a *balnea* with its hypocaust and *praefurnium*, and the granite pillars that support the *suspensura* are still *in situ*. The *caldarium* is located above and next to it possibly the *tepidarium*. Closing on the west side, there is a large tank of cold water half-destroyed, which we assume to be either a *natatio* or a mirror of water, possibly with fish for leisure and enjoyment of its inhabitants.

1 This castro, whose archaeological excavations were directed by Marcelo Mendes Pinto in 2005 and 2016, revealed an occupation from the Late Bronze Age to the Roman period, having been found in its vicinity in 1903 an important set of gold bracelets that are deposited in the National Museum of Archaeology and constitute the so-called "Treasure of Arnosela". In the 40s of the twentieth century, masons have found two bronze axes on the slopes of the castro, whose whereabouts are unknown.

Figure 6
Ruins of the roman *Villa* of Sendim (Google earth).

Description and Comparative Study of the Mosaic

The floors from the corridors, the *triclinia* and, at least, the one from a possible *cubiculum* were covered with mosaics. At the time of its discovery, this mosaic was the one that displayed the best state of conservation, still exhibiting traces of stucco on the walls (Fig. 7).

Figure 7
Plan of the Roman *Villa* of Sendim. The *cubiculum* with the mosaic coloured in yellow (Archive Mendes Pinto. Plan executed by José Ribeiro, Archaeology Office of Felgueiras Municipality).

From the existing fragments and the *tesserae* marks left behind on the *nucleus* where they once laid on, it was possible to suggest a reconstruction of the used compositional patterns and of some of the filling motifs present on the design (Figs. 8-9).

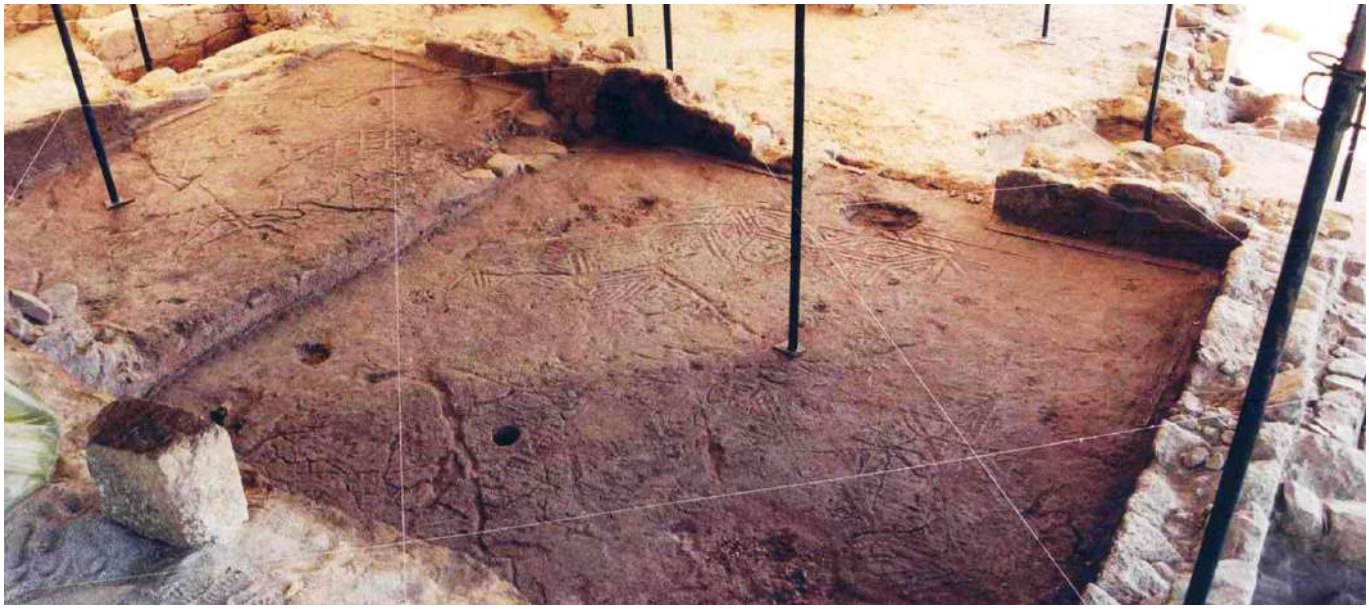


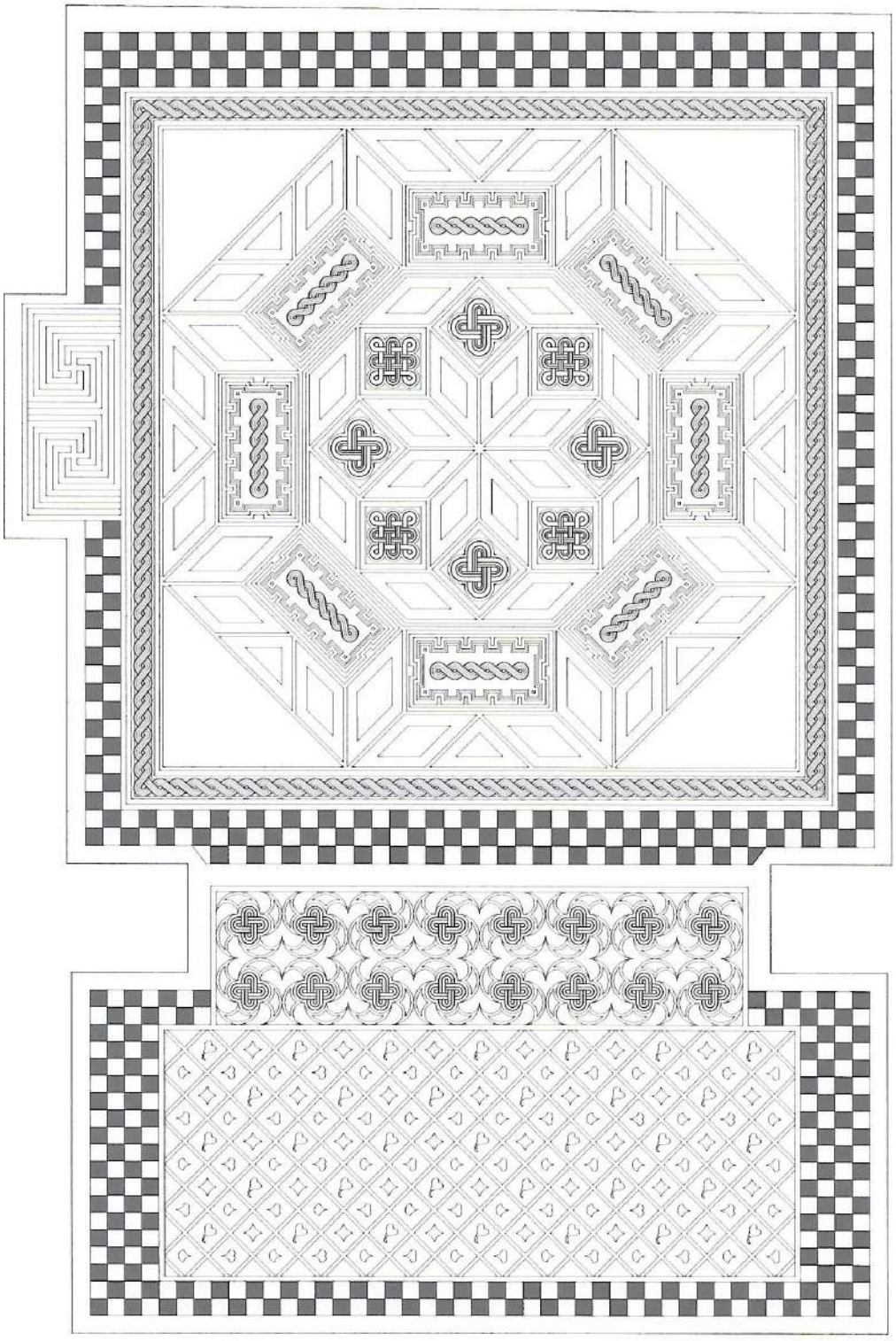
Figure 8
Mosaic at the time of its discovery, where it is possible to see the negative of the *tesserae* (©Mendes Pinto).

Figure 9
Back detail of the mosaic (©Mendes Pinto).

The entire *opus tessellatum* floor consists of two geometric carpets, with the main carpet being square (4, 60m x 4,60m) and the smaller one rectangular (4, 60m x 2,20m). Both carpets are connected by a narrower, rectangular and re-entrant band, laid upon a step. The main and larger mosaic presents a centralized pattern, in an octagon and around a star of 8 lozenges, of 8 lateral squares set around the star, forming lozenges perpendicular to the diagonals. The octagon is

Figure 10
Reconstitution of the mosaic pattern of the *cubiculum* (M. Pinto 2008: 38-39) (©Mendes Pinto. Design by José Ribeiro, Archaeology Office of Felgueiras Municipality).

flanked by 8 rectangles perpendicular to the diagonals and to the medians, of 8 lateral half-stars of eight lozenges, contiguous by the point to each other and to the central octagon and set around the rectangles, forming triangles laterally and in the corners and squares on the diagonals (Décor II: pl. 374c, 394a). On this mosaic, only 3 lozenges of half-stars are visible. Each lozenge encloses another lozenge (Figs. 10-11).



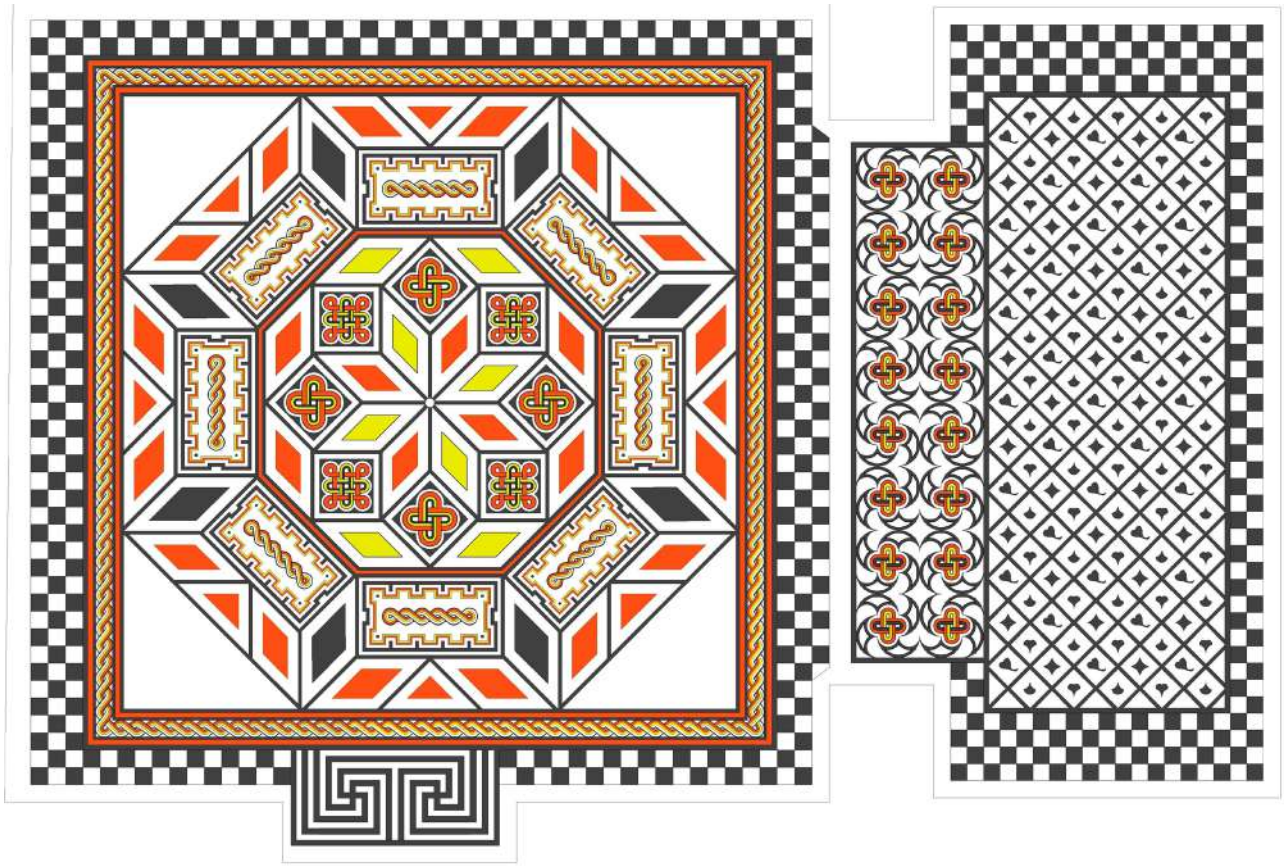


Figure 11
Reconstitution in colour of the mosaic pattern of the *cubiculum* (©Mendes Pinto. Design José Ribeiro, Archaeology Office of Felgueiras Municipality).

The frame of the carpet is a simple guilloche followed, on the outside, by a band of chessboard with three squares on two opposite sides and with two squares on the entrance to the room and on its opposite side. A meander of two swastikas and multiple returns delineates the threshold of the entrance to the room.

The connection band to the smaller carpet, underlined by a small step, presents a pattern of two rows of tangent and linked swastika-*peltae* wheels with a central Salomon knot, alternately reversed (Décor I: pl. 57g; Viegas et al. 1993: 70) (Fig. 12).

The smaller carpet, corresponding to the area of the *lectus*, presents a diagonal grid. This smaller carpet is also framed by a band of chessboard, with four squares on the smaller sides and two squares on the larger.

On the main carpet, the squares that surround the star would be filled with a Solomon knot and square with loops, interlooped (Décor II: pl. 43) which alternated with a Solomon knot. The rectangles that flank the octagon are interior framed by a polychrome simple meander with a simple guilloche, closed, in the centre. The squares from the grid would be decorated with small vegetal and/or geometric motifs.

In the Roman Portuguese mosaics, the mosaic floor whose compositional pattern comes closer to the pattern from the main carpet of the mosaic of Sendim is the one from the *Villa* of Cerro da Vila, Quarteira, Faro, from the so designated "Casa pequena" (small House), dated from the middle of the 3rd century (Corpus Portugal II: 464-469, mosaic n. 81). This one also presents a central octagon with a star of 8 lozenges and 4 rectangles perpendicular to the medians. However, this mosaic is more complete than the one from Sendim since the

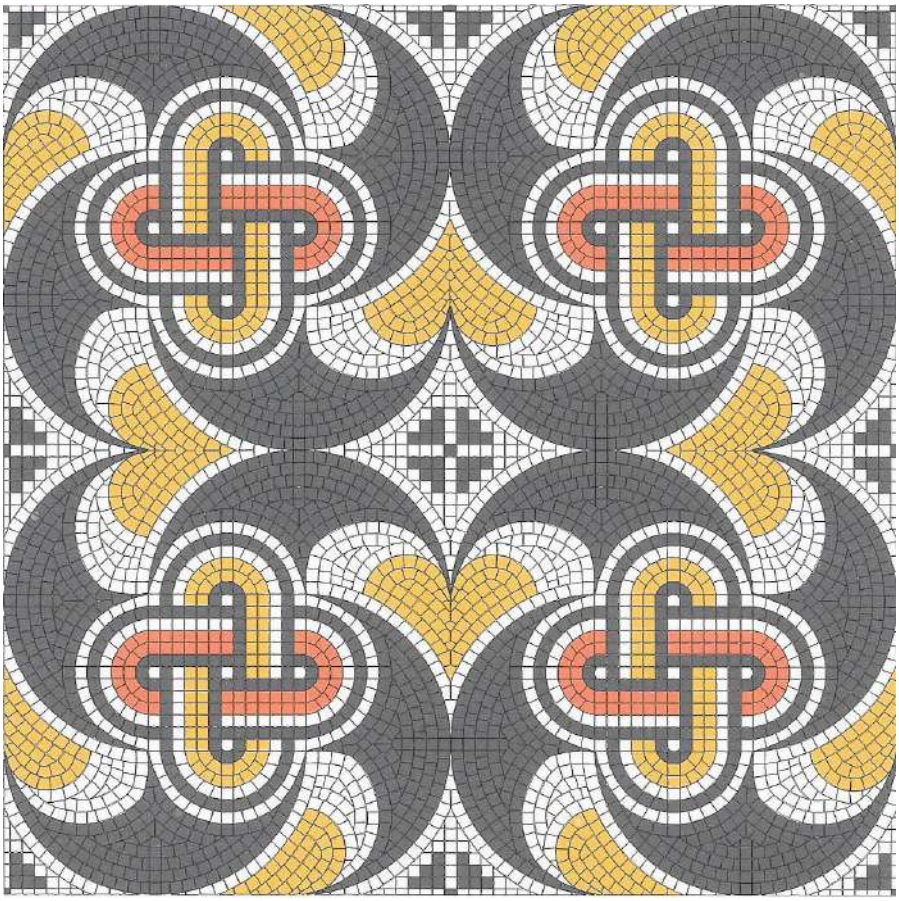


Figure 12
Detail of the reconstitution in colour of the mosaic pattern: swastika-peltae with a central knot (©Mendes Pinto. Design José Ribeiro, Archaeology Office of Felgueiras Municipality).

rectangles are surrounded by lozenges tangent to others, thus forming half-stars of 4 lozenges, with the corners of the carpet filled by two of those lozenges and a square on the diagonal. As in the *Villa* of Sendim, the squares are filled with Salomon knots and the rectangles have simple guilloches, closed.

For the centralized composition from the floor of the "Casa pequena" (small House) of Cerro da Vila, Cristina Oliveira finds several parallels outside Portuguese territory, among which a mosaic from Vienne, dating from the end of the 2nd century, beginning of the 3rd century, with enclosed lozenges and Solomon knots on the squares (Recueil Gaule III, 2: 70-72, n. 265, est. XXI) and in north-African mosaics, particularly in a mosaic from Thysdrus (Foucher 1960: 21 n. 14 est. VI f.), also with enclosed lozenges and closed guilloches on the rectangles, whose dating, based on the archaeological data, points out to the first decades of the 3rd century (Corpus Portugal II: 467).

The same author refers another mosaic floor which is stylistically very similar to the above mentioned mosaic of Cerro da Vila, in the *Villa* of Milreu, Estói, Faro. It is also a *cubiculum* in which the *lectus* area presents two octagons starred by squares and adjacent lozenges, forming lozenges and triangles. The main carpet displays a centralised composition with an octagon starred by rectangles and squares alternately tangent. The rectangles are also filled by a closed guilloche. The floor is dated from the late 3rd century (Corpus Portugal II: 331-336, mosaic n. 52).

Another parallel with the composition of the main carpet of the Sendim mosaic can be established with the main carpet of a *cubiculum* (B22) of the "House of the Skeletons", in *Conimbriga*, which displays a centralised composition with an octagon flanked by rectangles surrounded by lozenges, forming half-stars

of 8 lozenges. However, the filling of the central octagon is different and more complex as well as the geometric figures around, although the rectangles present on the central area a closed guilloche and the squares are filled with interlaced bands. The *lectus* area, as should have been the one of the Sendim mosaic, is decorated with an oblique grid. This mosaic is dated from the 3rd – 4th century (Correia 2003; Oliveira 2005: 46 mosaic n. 27). The two other floors with patterns centralised by stars of two interlaced squares, as the one inscribed on the octagon of the above mentioned mosaic, also come from Conímbriga. These two mosaics are displayed at the entrance of the Ruins, having been dated from the end of the 2nd century (Oleiro 1973: 92, 110 est. I-III; IV; V).

In relation to the star of 8 lozenges motif, which from the middle of the 1st century BC is seen in mosaics from the Italian peninsula, particularly in Pompeii, it is possible to verify that it had a wide geographical spread and longevity in the Roman mosaic, being preferentially used on surface compositions. It is relevant to note that the eight-pointed star and the star of 8 lozenges as an isolated centralised motif, as well as the orthogonal compositions of stars of 8 lozenges forming large squares and small pointed squares, are registered on the pictorial decoration of flat and domed ceilings in the Pompeiian painting of the 2nd and 3rd Styles (Barbet 1985: 87 fig. 52; 140-146 fig. 88). Many of the compositions, either centralised or orthogonal, used in the decoration of the floor mosaics, seem to reflect the ones used on the ceilings, being difficult to chronologically determine which preceded the other.

In Portuguese mosaics, especially those from *Villae* that flourished from the 3rd century onwards, floors with orthogonal compositions based on stars of 8 lozenges are very common. In eastern Algarve, in addition to the previously mentioned mosaics with compositions centralised by octagons, examples include the mosaics of Milreu (Corpus Portugal II: 238-240, mosaic n. 31, dated from the first half of the 3rd century; mosaic n. 46, composition centralised by square, determined by 4 stars of 8 lozenges, p.301-305, dated from the beginning of the 3rd century; mosaic n. 58, orthogonal composition of starred octagons, p. 352-355; mosaic n. 67, p. 413-417, dated from the end of the 2nd century, beginning of the 3rd century).

In western Algarve, the *Villa* of Abicada, Lagos, Vila do Bispo, also displays stars of 8 lozenges on some of its floors. These floors may be situated in the same period of time as the ones from Milreu due to the existing stylistic parallels (Corpus Portugal II: 303).

In Alter do Chão, Portalegre, in the so-called "Medusa's House" it is also possible to observe two stars of 8 lozenges and half-stars of 4 lozenges, on the complex and filled geometric composition of the carpet at the entrance of the *triclinium*, with a figurative panel on the main carpet. The geometric mosaics of this *Villa* date from the 3rd-4th centuries, with the figurative panel of the *triclinium* dating from the 4th century (Caetano -Mourão 2011: 207; António 2015: 4, 48 fig. 13).

In *Villa* Cardílio, Torres Novas, several floors display mosaics with different compositions based on the stars of lozenges, among them the mosaic from room G, dated from the middle of the 4th century (Duran Kremer 2008: 75).

In the *Villa* of Coriscada, Vale do Mouro, Meda, the polychrome mosaic carpet of two L-shaped corridors presents an orthogonal composition of stars of 8 lozenges, with enclosed lozenges (Légier 2015: 191-192 fig. 8).

In the urban context of Conímbriga, in the *triclinium* (C20) of the "House of

Cantaber", on a bicolour mosaic dated from the 2nd-3rd century, the star of 8 lozenges appears as an isolated motif decorating the squares of the outside band, alternating with another star of 8 lozenges surrounded by squares (Correia 2003; Oliveira 2005: 58 mosaic n. 40). The same isolated motifs, but in a polychrome version, are used on the squares of the outside band of the main carpet of the *triclinium* of the "House of the Fountains", in a mosaic dated from the last quarter of the 2nd century – first quarter of the 3rd century (Corpus Portugal I: 110-116, mosaic n.10, est. 39-43; 60.2; 68.5). Also in Conímbriga, but on the later mosaics from the "House of the Swastika Cross", dated from the 2nd half of the 3rd century (Correia 2003: 25), a composition with stars of 8 lozenges, with enclosed lozenges and Salomon knots on the squares, decorates the north wing (B 10 E) of the peristyle (Oliveira 2005: 32 mosaic n. 17.2).

In Setúbal, in Arronches Junqueiro Street, n. 75, the mosaic uncovered by the Archaeological Studies Centre of the Ethnography and Archaeology Museum of the District of Setúbal presents the same type of orthogonal composition with stars of 8 lozenges, with the enclosed lozenges, interlaced bands on the bigger squares and a closed guilloche on the rectangles. Its chronology probably locates it in the 3rd century, after the Severian Period, in a time of great economical relevance from *Caetobrica*/Setúbal (Silva -Soares - Wrench 2015: 103-104 fig. 5).

Only a few examples similar to the exterior frame of the Sendim mosaic, chessboard with black and white *tesserae*, are registered on Portuguese mosaics. The closest to the mosaic from Sendim is a mosaic from the *Villa* of Martim Gil, Leiria, entitled Orpheus II, probably from the 4th century (Moita 1951a: 132, 141), on which a chessboard frame with two rows surrounds the whole rectangular carpet and the interior figurative panel, two other rows of chessboard also surround the geometric figures of the surface composition; the other example is the one from the possible *cubiculum* of the northeast area (A41) of the "House of Fountains" in Conímbriga, dated from the 3rd quarter of the 2nd century – first quarter of the 3rd century (Corpus Portugal I: 134-137, n.13, est. 49 and 62.1; Oliveira 2005: 25 mosaic n. 13; Pessoa 2005: 377). Another later example of a chessboard frame is a mosaic from the *ecclesia* of *Tongobriga* (Freixo, Marco de Canaveses, Porto), dated from the 5th-6th century AD (Lima 2012: 36, 51 fig. 99). A small fragment of a mosaic that presents some squares of small dimensions corresponding to a chessboard done on black and white, possibly belonging to a frame of the same type, originates from Braga (Albano Belino Collection) and it is stored at the Archaeological Museum of the Morais Sarmento Society, in Guimarães. This mosaic is dated from the 4th century (Abraços 2005: Annex I, 52 File 38).

The majority of the mosaics presents this pattern covering relatively large surfaces or on panels that are, among other examples: the above mentioned *cubiculum* from the "House of Fountains" in Conímbriga, on the area destined for the *lectus*; one of the floors of a *domus* in Braga, preserved and exhibited *in situ* at the space-crypt of D. Diogo de Sousa Regional Archaeology Museum, in Braga, from the High-Imperial period (Abraços 2011: 827-831); a mosaic from Pedrogão, Póvoa de Cós, Alcobaça, dated from the 1st – 2nd centuries (Moita 1951b: 149 est. I-II), that according with the existing design, presents this pattern on the areas destined for the *lecti* of a *triclinium*.

Outside Portugal, the parallels for the bicolour chessboard pattern are countless and cover a very wide chronology from the West, mainly Hispanic, to the North of Africa. They are also applied on panels or on the entirety of the carpets, but

their occurrence on rims or frames has several examples. Bairrão Oleiro (Corpus Portugal I: 135-136, notes 12, 17, 18, 22, 29, 31, 34, 47, 49) mentions them on mosaics from Vailly (France), Yvonand (Switzerland), Iuvavum (Austria), Ulpia Oescus (Bulgaria), Fishbourn (Great-Britain), dated from the 2nd – 3rd century, and on later mosaics from Bignor and Littlecote Park (Great-Britain), from the 4th century. Also as a rim and a large outside frame, the chessboard pattern is used on the Hispanic mosaics from Villafranca, from the end of the 3rd century, beginning of the 4th (Corpus España VII: 79, n. 50, est. 57-58) and from Veja del Ciego (Asturias), from the 2nd half of the 4th century or first half of the 5th century.

Regarding the connection band between the main and the smaller carpets of the *cubiculum* of Sendim, decorated with two rows of tangent and linked swastika-*peltae* with a central knot, it should be mentioned that the repetition of the motif, filling large bands or panels, is used on Portuguese mosaics, like for example: in the *Villa* of Pisões, Beja, compartment 9, on a mosaic dated from the 1st half of the 4th century (Costa 1985: 121); on a mosaic from the *Villa* of Santiago da Guarda, Ansião, Leiria, whose mosaics date, *in genere*, from the 4th – 5th century (Pereira 2008: 174; Ribeiro 2015: 85); on the mosaic uncovered at the time of the archaeological intervention at the "Sommer House", in Lisbon, carried out by the team of archaeologists from NEOEPICA – this mosaic displays a different execution of the *peltae* motif than the one done on the mentioned mosaics, since the extremities are in volute (Ribeiro et al. 2017); on the Ulysses' mosaic from the *Villa* of Santa Vitória from Ameixial, Estremoz, a row of a linked swastika-*peltae* is used as a frame (Chaves 1938: 51 fig. 11e).

The motif used isolated appears on mosaics from Conímbriga, as on the mosaic from "The House of Cantaber", displayed at the entrance of the Ruins, dated from the end of the 2nd – 3rd century (Oleiro 1973: 76-92 mosaic n. 1) or on the mosaic from compartment A24 from the "House of Fountains", with a figure of Silenus on the central panel, filling, alternating with another motif, the octagons from the composition of one of the other panels. This mosaic was dated from the last quarter of the 2nd century – first quarter of the 3rd century (Corpus Portugal I: 98- 103, est. 36 and 59. 2, mosaic n. 8; Oliveira 2005: 20 mosaic n. 8). According to Bairrão Oleiro (Corpus Portugal I: 90, n.16), the linked swastika-*peltae* motif was created in Italy in the 2nd century and was particularly used during the following two centuries, although there are later examples. Its geographic expansion beyond Italy occurs in Germany, England and the Iberian Peninsula, for example, in Mérida, on mosaics from the 3rd and 4th centuries (Corpus España I: 43, n. 34, est. 67; 32-33, n. 10, est. 21). In the North of Africa, the author refers the examples of El- Jem and Utica.

The comparative study of the area destined for the *lectus*, in the *cubiculum* of Sendim, is not viable due to the fact that the mosaic is almost completely damaged. The reconstitution done on the design, with a diagonal grid, is a very common decoration on less exposed areas of the floor. As mentioned before in relation to the composition centralised with an octagon of the main carpet, the *cubiculum* (B22) of the "House of Skeletons" presents this pattern on the smaller carpet.

The Occupation of the *Villa* – Chronology

So far, the archaeological excavations carried out have taken place on a platform that constituted an agricultural field surrounded by vine training systems. The general stratigraphy of the station demonstrates that the ruins had been abandoned for a long time. During this period, stones from its walls were stolen and

used in the terraces and retaining walls throughout the valley below and in the construction of houses over the centuries.

The continuation of the archaeological excavations, especially below the floors, in its last phase of occupation (5th – 6th centuries), as well as in the foundation ditches of the walls, will provide information about the primitive plan and possible works that have occurred before the great transformations of the end of the 3rd century. At any rate, the occurrence of remains of *opus signinum* at a level below the floor of the *atrium* shows that the north-south corridor, which borders the peristyle to the west, also extended alongside the winter *triclinium* and was reduced during the works that were then carried out. These allowed the expansion of the *triclinium* and the installation of the *caldarium* of the *balnea* below the hypocaust.

Judging from the dating of the ceramic materials and coins from the periods of *Gallienus* and *Claudius* II uncovered in the foundation ditch of the north wall of the tank, the house underwent a major renovation in the end of the 3rd century (Mendes Pinto 2008: 42).

Behind the primitive *triclinium*, some *balnea* were included. The hypocaust belonging to this *balnea* is still visible, with its *praefurnium* where the fires were lit. These fires heated the atmosphere and the waters from the *caldarium* and possibly of the *tepidarium*. A big tank of cold water, built over an ancient *laconicum* from a primitive *balnea* (2nd century?), was situated next to the new thermal complex. This would enable the owners if not to have the pleasure of the cold bath, due to its shallow depth, at least to contemplate the movement of the fish in the water mirror, with a probable view over the Valley and the West.

The water for this tank came from a spring in the south, at the base of the *castrum*, entering in the housing complex through a pipe that supplied the kitchens and the *balnea*. From this same spring, until today, comes the irrigation water that traverses the small trench and proceeds to the neighbouring fields, surrounding the house to the south and west. It was here that the biggest level of destruction, affecting these ruins, probably occurred when, in the 20th century, the municipal road and the neighbouring houses were built.

These constructions greatly affected the architectural interpretation of the Roman *Villa*, because of the total destruction of the south front of the house, not allowing the detection of its entrance or the complete comprehension of the development of west *balnea*. Due to this, it is not possible to know if the house had a façade with some sort of portico or tower, as sometimes happened in the *Villa*-block type defined by Gorges (Gorges 1979: 150-151). The truth is that the local place names register in the vicinity the toponym "Tower". However, in all this area, traces of buildings of this type or written records that refer to it, especially on documentation from medieval times, are unknown. In the present state of the study, the archaeological record does not make it possible to clearly distinguish the transition between the Roman occupation and the Suevic period, since the traces of material culture remain virtually identical. As differentiating elements from the previous period, it is only possible to highlight the above mentioned introduction of grey ceramics, the use of DSP imitations, of P-shaped *fibulae* and of buckles with violin type bronze spikes.

Given the impossibility of more secure timelines due to the absence of reliable dating elements, the extension of the Villa's occupation should not be considered beyond the middle of the 6th century.

For the sake of prudence and due to the fact that the archaeological excavations

are not finished and its extension will most likely provide new data, the occurrence of the great fire will be set between Theodoric's raids, in 455-456, and the middle of the 6th century, especially in the area of the *triclinium* and in the area that separates the peristyle. This dating may also extend to the baths, although there, given the posterior falling of the *suspensura* of the hypocaust, the traces can be confused with the ashes and stones blackened by smoke, characteristic of this area. However, not all the building seems to have been affected. In the beginning of the 6th century, the house was still inhabited, with the occurrence of some repair works done with the help of poles to hold the ceilings and roofs, the reconstruction of walls, and the limitation of corridors and compartments.

From then on, the house fell into disrepair and was abandoned, leaving behind some potteries still intact. However, the splendour of the ruins made some of its rooms, despite the evident degradation, to be reoccupied over the following centuries. It is possible to highlight the emergence of ceramics that can be dated between the 13th century and the 16th century, as well as coins from the reigns of King D. Afonso V and D. Sebastião. During this period, the stones from its walls were looted to supply the surrounding constructions.

Final Considerations and Dating Proposal for the Mosaic of the *Cubiculum*

The *Villa* of Sendim integrates a set of four *Villae* in the municipality of Felgueiras in a total of 23 archaeological sites within the geographical area covered by the *Conuentus Bracaraugustanus*. All the interventions allowed the mapping of the remains and the collection of evidence. In addition to the sites with mosaics from the capital of the *Conuentus*, these also cover the surrounding area of Braga, radiating to the coastal area, Douro Valley and Galicia. Although the *pars urbana* and *balnea* of many of the mentioned *Villae* certainly had floors in *opus tessellatum*, the surviving evidence of their existence is very scarce.

Regarding the *Villa* of Sendim, the fragments of the mosaic that covered this *cubiculum* allowed for the reconstitution of the compositional patterns used in the main carpet, some of the filling motifs of some of the geometric figures of this composition and the reconstitution of the connection band between the main carpet and the smaller or *lectus* area.

The analysis of this mosaic, both the compositional pattern and the different motifs, refers to a mosaic repertoire of geometric nature, widespread throughout the Roman world, in late Antiquity, resulting from an intersection of influences that connected mosaics from the East Mediterranean, the North of Africa and the West. It was possible to observe that, regarding the use of the composition centralised with an octagon and the star of eight lozenges, the parallels found in Portugal mainly come from *Villae* located in the western (Abicada) and eastern (Cerro da Vila and Milreu) Algarve. It is important to highlight those connections between some mosaics from Braga and mosaics from Milreu are already known. Thus, the representations of aquatic fauna on the mosaic from the peristyle of the *domus* from the Santiago's Seminary, exhibited at the Pio XII Museum of Braga, have close parallels with the mosaics from that *Villa* (Abraços et al. 2017: 1093); on the mosaics of Milreu, the specific water markings of a V-shaped motif are similar to the ones of the mosaic of Braga, from the S. João do Souto Square, Santiago's Seminary, Cerca, and it is present on other mosaics from *Gallaecia* (Acuña Castroviejo 1974: 53ss; Balil 1975: 259 ss; Duran Kremer 1999: 509-516; Mourão 2008: 98; Abraços 2015: 483); also

the florets represented on the parietal mosaic of a tank with steps of the S. Paulo Square, Cividade, Braga (Cardoso da Saudade) are very similar to the tank of Milreu (Abraços 2015: 482-483 fig. 3).

Still regarding the parallels found for the centralised composition and the stars of 8 lozenges from the mosaic of Sendim, it was possible to ascertain that, despite the significant number of mosaics from Algarve, other examples come from different archaeological sites dispersed all over the Portuguese territory. A similar statement can be done regarding the linked swastika-*peltae*. The use of the chessboard pattern on the surrounding and relatively narrow band of the mosaic from Sendim seems to be less common on the set of Hispanic mosaics.

As it happens with the mosaics from *Bracara* Augusta, through the study that has been carried out of these, the mosaic from the *Villa* of Sendim presents the use of a generalised decorative grammar in the late mosaic art, possibly carried out by mosaicists of the region. The exchange of influences verified in the various testimonies of the material culture of the peninsular Northwest was certainly the result of the relationships that this region established with the South of Hispania, not only through the road *Emerita Olisipo-Bracara-Asturica*, but mainly through the Atlantic route, already in use during pre-Roman times (Balil 1975: 259).

The archaeological evidence mentioned above, relating to the period of development of the *pars urbana* of this *Villa*, from the end of the 3rd century, and through the stylistic and comparative analysis carried out, shows that the mosaic floor from this *cubiculum* may have been completed between the end of the 3rd century and the end of the 4th century.

Bibliography – Kaynaklar

Abraços 2005 — M. de F. Abraços, Para a História da Conservação e Restauro do Mosaico Romano em Portugal, Tese de Doutoramento em Letras-História da Arte, Universidade de Lisboa, Faculdade de Letras, Departamento de História, Lisboa (3 volumes).

Abraços 2011 — M. de F. Abraços, "Os mosaicos romanos de Bracara Augusta da colecção do Museu Regional de Arqueologia D. Diogo de Sousa, Braga", Actas do X Colóquio Mosaico Greco-Romano (AIEMA): O Mosaico Greco-Romano nos Centros e nas Periferias (Museu Monográfico de Conímbriga, 29 de Out. a 3 de Nov. 2005), Conímbriga, 827-835.

Abraços 2015 — M. de F. Abraços, "Roman Mosaics of Bracara Augusta. Basins: Aspects of Iconography", XII Colloquio AIEMA (Venezia, 11-15 settembre 2012) ATTI, Verona, 481-484.

Abraços et al. 2017 — M. de F. Abraços – L. Wrench – C. Mourão – F. Limão – J. T. Garcia, "O Corpus dos Mosaicos Romanos do Conuentus Bracaraugustanus", Arqueologia em Portugal 2017 – Estado da Questão (Coordenação editorial: José Morais Arnaud, Andrea Martins), Lisboa, 1109-1121.

Acuña Castroviejo 1974 — F. Acuña Castroviejo, Mosaicos romanos de Hispania Citerior III. Conventus Bracarensis, Studia Archaeologica 31.

António 2015 — J. António, "Mosaicos geométricos da Casa de Medusa", ABELTERIUM, Revista online de Arqueologia e História, Vol. II, Nº 1, 39-51.

Balil 1975 — A. Balil, "Sobre los Mosaicos Romanos de Galicia: Identificación de un Taller Musivario", CMGR II (Vienne, 30 Août - 4 Septembre 1971), Paris, 259-263.

Barbet 1985 — A. Barbet, La Peinture Murale Romaine. Les Styles Décoratifs Pompéiens, Paris.

Caetano - Mourão 2011 — M. T. Caetano – C. Mourão, "A Portrait of Book XII of the Æneid: the Mosaic from the «House of the Medusa» (Alter do Chão, Portugal)", M. Şahin (ed.), 11th International Colloquium on Ancient Mosaics (october 16th-20th, 2009), Bursa, Turkey, İstanbul, 205-223.

Centeno et al. 2014 — R. Centeno – R. Morais – T. Soeiro, "A propósito da cerâmica cinzenta fina polida do Castro de Romariz (Santa Maria da Feira-Portugal)", As produções cerâmicas de imitação na Hispânia-II Congresso Internacional da SECAH-Ex Officina Hispana, Braga, 291-308.

Chaves 1938 — L. Chaves, "Estudos lusitano-romanos. I. A 'villa' de Santa Vitória do Ameixial (Concelho de Estremoz). Escavações em 1915-1916", AP XXX, 14-117.

Corpus España I — A. Blanco Freijeiro (1978), Mosaicos Romanos de Mérida, Madrid, Instituto Español de Arqueologia "Rodrigues Caro", CSIC.

Corpus España VII — J. M. Blázquez Martinez; M. A. Mesquiriz (1985), Mosaicos de Navarra, Madrid, Instituto Español de Arqueologia "Rodrigues Caro", CSIC.

Corpus Portugal I — João Manuel Bairrão Oleiro (1992), Corpus dos Mosaicos Romanos de Portugal: Conventus Scallabitanus, I, Conímbriga – Casa dos Repuxos, Conímbriga, IPM/MMC.

Corpus Portugal II — J. Lancha ; Cristina Oliveira (2013), Corpus dos Mosaicos Romanos de Portugal. II Conventus Pacensis. 2 Algarve Este, Faro, Universidade do Algarve.

Correia 2003 — V. H. Correia, Mosaicos de Conímbriga (CD-Rom), Lisboa, ICAM, Ministério da Cultura.

Costa 1985 — M. L. V. Costa, "Contribuição para o estudo de alguns dos mosaicos da Villa Romana de "Pisões", ArquivoBeja Vol. II, 2ª Série, Câmara Municipal de Beja (1983-1985), 95-135.

Décor I — C. Balmelle – M. Blanchard Lemée – J. Christophe – J.-P. Darmon – A.-M. Guimier Sorbets – H. Lavagne – R. Prudhomme – H. Stern, Le Décor Géométrique de la Mosaïque Romaine I, Paris, 1985.

Décor II — C. Balmelle – M. Blanchard Lemée – J.-P. Darmon – S. Gozlan – M.-P. Raynaud, Le Décor Géométrique de la Mosaïque Romaine II, Paris, 2002.

Delgado - Morais 2009 — M. Delgado – R. Morais, Guia das Cerâmicas de Produção Local de Bracara Augusta, CITCEM – Centro de Investigação Transdisciplinar Cultura, Espaço e Memória, Porto.

Duran Kremer 1999 — M. de J. Duran Kremer, "Contribuição para o estudo de alguns mosaicos romanos da Gallaecia e da Lusitania", Actas do V Congresso Internacional de Estúdios Galegos (8-11 de outubro de 1997), Vol. I, Universidade de Tréveris, 509-518.

Duran Kremer 2008 — M. de J. Duran Kremer, "Mosaicos Geométricos de Villa Cardílio. Algumas considerações", O Mosaico na Antiguidade Tardia, Revista de História da Arte, nº 6, Lisboa, Instituto de História da Arte, Faculdade de Ciências

Sociais e Humanas-UNL, 61-77.

Foucher 1960 — L. Foucher, Inventaire des mosaïques, Feuille nº 57 de l'atlas archéologique, Sousse, Tunis, Imprimerie Officielle, Institut National d'Archéologie et d'Art.

Gorges 1979 — J.-G. Gorges, Les villas hispano-romaines, Paris.

Légier 2015 — M. Légier, "Les mosaïques de Coriscada, Vale de Mouro, Meda, Portugal", Actas do Encontro Portugal-Galiza. Mosaicos Romanos (6 e 7 de Julho de 2013), Rabaçal, APECMA/AIEMA, 187-194.

Lima 2012 — A. M. de C. Lima, Os mosaicos da igreja de Santa Maria do Freixo e a ecclesia de Tongobriga, paróquia da diocese portucalense no século VI, Freixo, Direcção Regional de Cultura do Norte/Estação Arqueológica do Freixo.

Mendes Pinto 1995 — J. M. S. Mendes Pinto, O povoamento da bacia superior do rio Sousa: da proto-história à romanização, in Trabalhos de Antropologia e Etnografia, Vol. XXXVI - Fasc. 1 (Actas I Congresso de Arqueologia Peninsular, Vol. V), Porto.

Mendes Pinto 1999 — J. M. S. Mendes Pinto, Villa Romana de Sendim, Felgueiras.

Mendes Pinto 2007 — J. M. S. Mendes Pinto, Tesouros Monetários Baixo-Imperiais entre Douro, Ave e Tâmega, Anexos NVMMVS, nº 8, S.P.N., Porto

Mendes Pinto 2008 — M. Mendes Pinto, Villa Romana de Sendim. Roteiro e Exposição Permanente, Felgueiras.

Moita 1951a — I. Moita, "O mosaico de Martim Gil", AP, n. s., I, Lisboa, 131-141.

Moita 1951b — I. Moita, "O mosaico luso-romano de Póvoa de Cós", AP, n. s., I, Lisboa, 143-149, ests. I e II.

Morais 2005 — R. Morais, Autarcia e Comércio em Bracara Augusta. Contributo para o estudo económico da cidade no período Alto-Imperial, Unidade de Arqueologia da Universidade do Minho, Braga.

Mourão 2008 — C. Mourão, MIRABILIA AQVARVM, Motivos Aquáticos em Mosaicos da Antiguidade no Território Português, Lisboa, EPAL.

Oleiro 1973 — J. M. B. Oleiro, "Mosaicos de Conímbriga encontrados durante as sondagens de 1899", Conímbriga, 12, Coimbra, Universidade de Coimbra (Faculdade de Letras/Instituto de Arqueologia), 67-158.

Oliveira 2005 — C. Oliveira, Mosaicos de Conímbriga. X Colóquio Internacional da Associação Internacional para o Estudo do Mosaico Antigo (AIEMA), Conímbriga.

Pereira 2008 — R. M. Pereira, "Resultados dos Trabalhos Arqueológicos no Paço de Vasconcelos em Santiago da Guarda (Maio de 2002 a Julho de 2004)", Actas do IV Congresso de Arqueologia Peninsular: Hispânia Romana. Faro: ed. Centro de Estudos de Património-Universidade do Algarve: 171-181.

Pessoa 2005 — M. Pessoa, "Contributo para o estudo dos mosaicos romanos no território das civitates de Aeminium e de Conimbriga, Portugal", RPortA 8, nº 2, 363-401.

Pinto 1934 — R. de S. Pinto, "O Castro de Sendim, Felgueiras (Nota Preliminar)", Homenagem a Martins Sarmento (1833-1933), Sociedade Martins Sarmento, Guimarãe, 376-380.

Recueil Gaule III, 2 — J. Lancha, Recueil général des mosaïques de la Gaule : III, Narbonaise – 2, Paris, CNRS (Xème Supplément à Gallia), 1981.

Ribeiro 2015 — L. C. Ribeiro, "Contributo para uma visão global dos pavimentos de mosaico da Villa romana de Santiago da Guarda, Ansião", Actas Encontro Portugal-Galiza. Mosaicos Romanos (6 e 7 de Julho de 2013), Rabaçal, APECMA/AIEMA.

Ribeiro et al. 2017 — R. Á. Ribeiro - V. N. Vieira – P. Rebelo – N. Neto, "A Roman Mosaic Unearthed in Armazéns Sommer (Lisbon). Archaeology and Iconography", JMR 10, 335-346.

Silva - Soares - Wrench 2015 — C. T. da Silva – J. Soares – L. Wrench, "Mosaicos Romanos de Setúbal – Exemplo da excelência da arte musiva urbana na periferia do mundo romano ocidental", in Actas do Encontro Portugal-Galiza. Mosaicos Romanos (6 e 7 de Julho de 2013), Rabaçal, APECMA/AIEMA, 92-105.

Viegas et al. 1993 — C. Viegas - F. Abraços - M. Macedo, Dicionário de Motivos Geométricos no Mosaico Romano. Baseado em material seleccionado da obra Le Décor Géométrique de la Mosaïque Romaine, Conímbriga, Liga dos Amigos de Conímbriga.

DOI: 10.26658/jmr.633845

JMR 12, 2019 179-192

I. Uluslararası Apollonia Mozaik Çalıştayı 26 Ağustos - 1 Eylül 2019 - Gölyazı / Nilüfer / Bursa

I. International Apollonia Mosaic Workshop 26 August - 1 September 2019 - Gölyazı / Nilüfer / Bursa

Mustafa ŞAHİN*

(Received 09 September 2019, accepted after revision 25 October 2019)

Öz

Bu makalede 26 Ağustos - 1 Eylül 2019 tarihleri arasında Gölyazı / Bursa'da düzenlenen I. Uluslararası Apollonia Mozaik Çalıştayı hakkında bilgi verilmekte, ayrıca çalıştaya katılan sanatçılar ve eserleri tanıtılmaktadır. Çalıştayın konusu olarak, Apollonia antik kentinin isim kaynağı olan Apollon'un "phoibos" epitheti seçilmiş ve sanatçıların ışık temasını ön plana çıkartacakları eserler üretmeleri beklenmiştir. Çalıştaya yurtiçinden ve yurtdışından mozaik sanatçıları Fatma Akay, Sibel Akkaba, İlknur Altıntaş Yağmur, Dafna Birger, Gvira Caspi-Hacham, Hayati Çetin, Gamze Er, Daniel Georgiev Ivanov, Bahriye Martı Güler, Velina Staleva ve Gözde Tolan katılarak mozaik eserlerini üretmişlerdir.

Anahtar Kelimeler: *Apollonia, Gölyazı, modern mozaik, çalıştay, Apollonia Mozaik Akademisi, Apollon, ışık.*

Abstract

This article provides information about the 1st International Apollonia Mosaic Workshop held in Gölyazı / Bursa between 26 August - 1 September 2019 and also introduces the artists and their works who contributed to the workshop. As the subject of the workshop, "phoibos", which is the epithet of Apollo, and also the name source of the ancient city of Apollonia, was chosen, and the artists were expected to produce works that highlight the theme of light. Mosaic artists Fatma Akay, Sibel Akkaba, İlknur Altıntaş Yağmur, Dafna Birger, Gvira Caspi-Hacham, Hayati Çetin, Gamze Er, Daniel Georgiev Ivanov, Bahriye Martı Güler, Velina Staleva and Gözde Tolan produced the mosaic works.

Keywords: *Apollonia, Gölyazı, modern mosaic workshop, Apollonia Mosaic Academy, Apollon, light.*

Farklı kültürlerin derin izlerini taşıyan mozaik sanatı, en eski ve en dayanıklı sanatsal ifadelerden birisi olarak kabul edilmektedir. Farklı renkteki taşların desen oluşturacak şekilde ahenkli bir düzen içinde bir araya getirilmesi ile ortaya çıkan mozaik sanatı, ilk olarak MÖ 4. binde Sümerler ile başlamış olmalıdır (Müller 1939; Moorey 1994; Ödekan 1998). Yunan, Roma ve Bizans medeniyetlerinde en üst seviyeye ulaşan mozaik sanatı, hangi dönemde yapıldıysa o dönemin kültür, inanç ve yaşam tarzını yansıtmıştır (Dunbabin 1999). Bizans İmparatorluğu'nun ortadan kalkmasından sonra uzun bir süre Anadolu'da unutulan mozaik sanatı, günümüzde modern sanatçıların gayretleri ile yavaş yavaş yeniden dirilmeye başlamıştır. Mozaik sanatçıları bir yandan klasik teknikleri devam ettirirken, diğer yandan çağdaş teknikleri de başarılı bir şekilde uygulamaktadırlar (Güvenir 2008; Broca 2014; Vurnal İkizgül 2018).

* Mustafa Şahin, Bursa Uludağ Üniversitesi, Fen-Edebiyat Fakültesi, Arkeoloji Bölümü, 16059 Görükle-Bursa-Türkiye. ORCID ID: https://orcid.org/0000-0001-5153-1918. E-mail: mustafasahin@uludag.edu.tr

Ülkemizde modern mozaik sanatının tekrar diriltilmesine katkı sağlamak düşüncesi ile 2019 yılında kurulan Apollonia Mozaik Akademisi, bir yandan mozaik sanatçılarının Bursa'ya ilgisini çekmek, diğer yandan da bu sanat kolunun gelişmesine katkıda bulunmak amacıyla ulusal ve uluslararası alanda kendisini kabul ettirmiş veya ettirmeye başlayan mozaik sanatçılarını davet ederek bir mozaik çalıştayı düzenlemiştir. "I. Apollonia Mozaik Çalıştayı 2019" olarak adlandırılan etkinlik 26 Ağustos - 1 Eylül 2019 tarihleri arasında Bursa'nın Nilüfer İlçesi'nin Gölyazı Mahallesi'nde düzenlenmiştir. Antik Apollonia kentinin kalıntılarının üzerinde yer alan Gölyazı, Uluabat Gölü'nün kıyısında yer alan en şirin mahallerden birisidir. Kültür ve Turizm Bakanlığı'nın izni ile Bursa Müzeler Müdürlüğü'nün başkanlığında, Bursa Uludağ Üniversitesi'nin bilimsel desteği ve Nilüfer Belediyesi'nin katkıları ile 2015-2018 yılları arasında yapılan arkeolojik kazılarla açığa çıkmaya başlayan kültür varlıkları Gölyazı'yı bir anda Bursa'nın en önemli ziyaret noktalarından birisi durumuna getirmiştir (Şahin 2017; Şahin - Özbey 2017). Adını, ışığın ve sanatın tanrısı Apollon'dan almış olan Apollonia antik kentini günümüzde de bir sanat merkezi haline getirmeyi amaçlayan mozaik çalıştayının teması, kentin kurucu tanrısı Apollon'un "phoibos" epithetinden ilham alınarak "ışık" olarak belirlenmiştir.

Resim 1
Kapanış sergisi.

Koordinatörlüğümüzde düzenlenen 1. Apollonia Mozaik Çalıştayı'nın seçici komitesi Bursa Uludağ Üniversitesi, Güzel Sanatlar Fakültesi'nden Doç. Dr. Meryem Uzunoğlu, Bursa Zeki Müren Güzel Sanatlar Lisesi'nden Ömer Faruk Kaya ve Nilüfer Belediyesi, Kültür ve Sosyal İşler Müdürlüğü, Tarih ve Turizm Bürosu'dan Nurgül Çetin olarak belirlenmiştir. Etkinliğin denetleme kurulunda ise iki ünlü mozaik sanatçısı yer almıştır: Makedonya'dan Gazanfer Bayram ve İtalya'dan Paolo Racagni. Mozaik çalıştayının ana sponsorları olan Nilüfer Belediyesi, etkinlik süresince sanatçıların şehir içi tansferleri de dahil olmak üzere bütün konaklama giderlerini karşılamış, Hercules Firması ise sanatçıların ihtiyaç duydukları malzemelerin teminini üstlenmiştir. Etkinlik koordinatörü olarak, vermiş oldukları desteklerden dolayı Nilüfer Belediyesi ve Hercules Firması yetkililerine teşekkürü bir borç biliriz.

8'i yurt içi, 8'i yurt dışından olmak üzere toplam 16 mozaik sanatçısının davet edilmesi düşünülen çalıştaya, sanatçıların özgeçmişleri, en az 5 yıl mozaik sanatı konusunda aktif olarak çalıştıklarını gösteren bir belge ve en az 5 eserine ait fotoğraflarını içeren bir portfolyo ile başvurmaları istenmiştir. Seçici komitemiz, başvuruda bulunan sanatçılar arasından, 6'sı yurt içi, 4'ü yurt dışından olmak üzere toplam 10 sanatçıyı davet etmeyi uygun görmüştür.

Çalıştay süresince sanatçılar, çevre ve yerli halkın ilgisini çekmesi için Gölyazı Meydanı'nda bulunan Ağlayan Çınar'ın altında kurulan geçici atölye alanında eserlerini üretmişlerdir. Mozaik sanatı konusunda halkı bilgilendirmek üzere Gölyazı Kültür Evi'nde konferanslar da organize edilmiştir. İlk konferans Bursa Uludağ Üniversitesi Öğretim Üyesi Doç. Dr. Derya Şahin tarafından verilen "Mozaik Sanatının Dünü: Antik Dönemde Mozaik" başlıklı sunum olmuştur. Bunu ünlü İtalyan mozaik sanatçısı Paolo Racagni'nin "Mozaik Sanatının Bugünü" konulu bildirisi takip etmiştir. Makedonyalı ünlü mozaik sanatçısı Prof. Gazanfer Bayram'ın "Mozaik Sanatının Yarını" başlıklı sunumu ile konferanslar serisi tamamlanmıştır.

Çalıştaya katılan sanatçıların ürettikleri eserler ile Gölyazı Kültür Evi'nde bir sergi düzenlenmiş ve sergi açılışı 1 Eylül 2019 tarihinde Nilüfer Belediyesi Başkanı Sayın Turgay Erdem tarafından gerçekleştirilmiştir (Res. 1). Çalıştay sonunda ortaya çıkan eserler gelecekte kurulması düşünülen modern mozaik müzesinde sergilenmek üzere Nilüfer Belediyesi tarafından teslim alınmıştır. Sanatçılar ve çalışmaları soyadlarına göre alfabetik olarak tanıtılacaktır.

Çalıştaya Katılan Sanatçılar ve Eserleri

Fatma AKAY

Sanatçının Kısa Özgeçmişi: Sanatçı, 2000-2019 yılları arasında Edirne Halk Eğitim Merkezi ve Kültür Müdürlüğü'nde mozaik sanatı üzerine eğitim vermiştir.

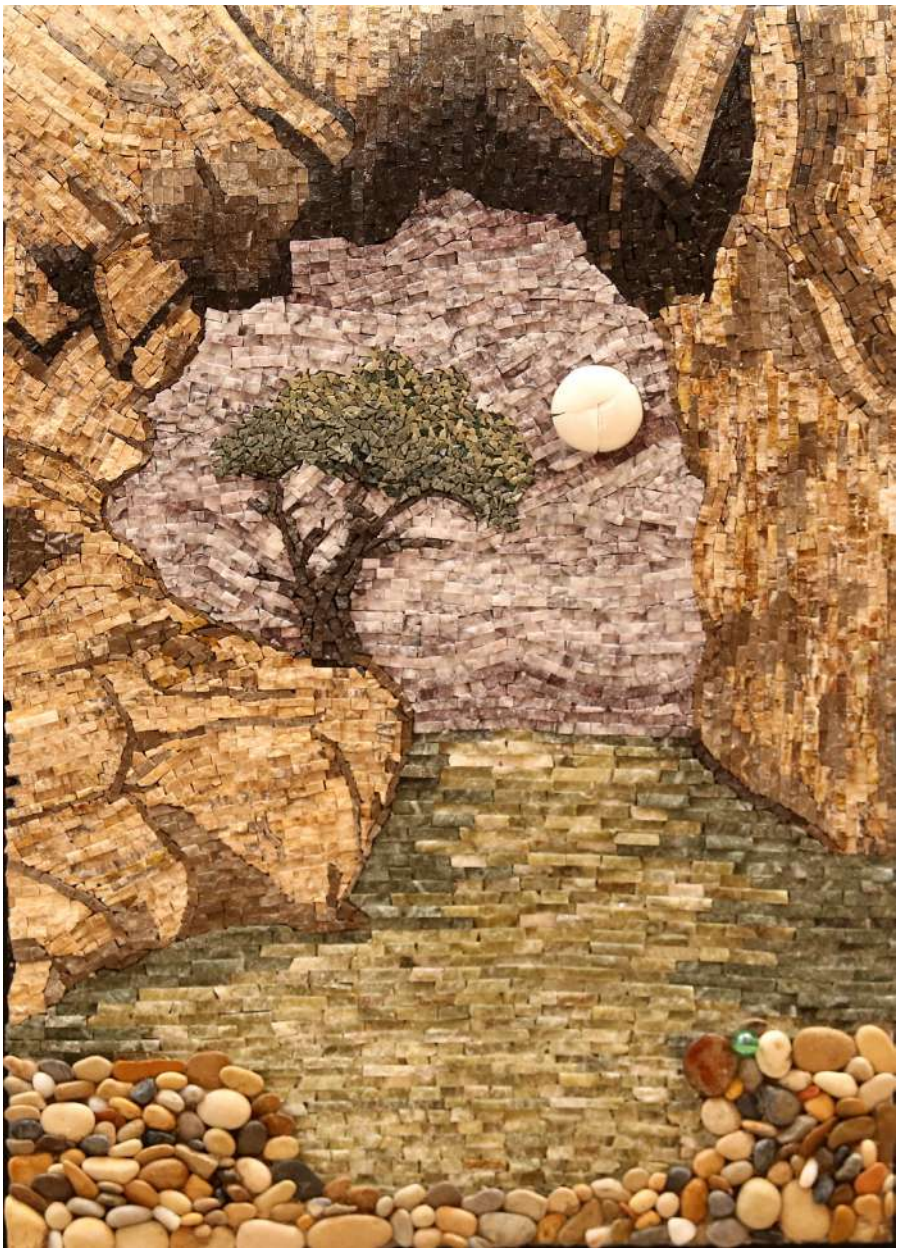
Eser Adı: Ayışığı / Moonlight

Malzeme: Doğal taş, mermer tutkalı, 8 mm mdf.

Teknik: Patlatma, düz dizim ve mikro mozaik teknikleri.

Ölçü: 50 X 70 cm

Konu: *«Konumuz ışık. Benim eserimin adı 'Ayışığı'. Evet ama bendeki ışık bir çınar ağacı. Çınar ağacı güçlü ve dayanıklıdır. Meyve vermese de gölgesi yeter. Bana göre herkesin hayatında bir 'çınar ağacı' vardır. Benim hayatımdaki çınarım Babam. Benim Işığım, Benim Gücüm...»* (Res. 2).



Resim 2
Ayışığı / Moonlight,
Fatma Akay.

Sibel AKKABA

Sanatçının Kısa Özgeçmişi: 1966 yılında İstanbul'da doğdu. 1987 yılında İstanbul Üniversitesi Jeoloji Mühendisliği bölümünü bitirdi. 2011-2019 yılları arasında Temel Resim Eğitimi, Karakalem, Suluboya, Yağlıboya, Sanatsal Mozaik, Çakıltaşı ile Resim ve Sanat Tarihi dersleri aldı. İtalya'da 2017 yılında yapılan 2. ve 2018 yılında yapılan 5. Uluslararası Mozaik Sempozyumu'na Türkiye'yi temsilen davet edildi ve orada bir mozaik çalışması gerçekleştirdi.

Ödüller: 2017 Uluslararası Şanlıurfa Mozaik Yarışması İkincilik Ödülü.

Eser Adı: Nefes

Malzeme: Mdf üzerine strafor, doğaltaş mermer, seramik, cam, smalti, kristal cam, füzyon cam, çakıl taşı.

Teknik: Dinamik mozaik, karışık teknik.

Ölçü: 50 X 70 cm

Konu: İnsanoğlunun dünyaya hâkim olma dürtüsü ile amansızca yükselttiği binalar arasından zorlukla görülebilen gökyüzü ışığı (Res. 3).

Resim 3
Nefes,
Sibel Akkaba.

İlknur ALTINTAŞ YAĞMUR

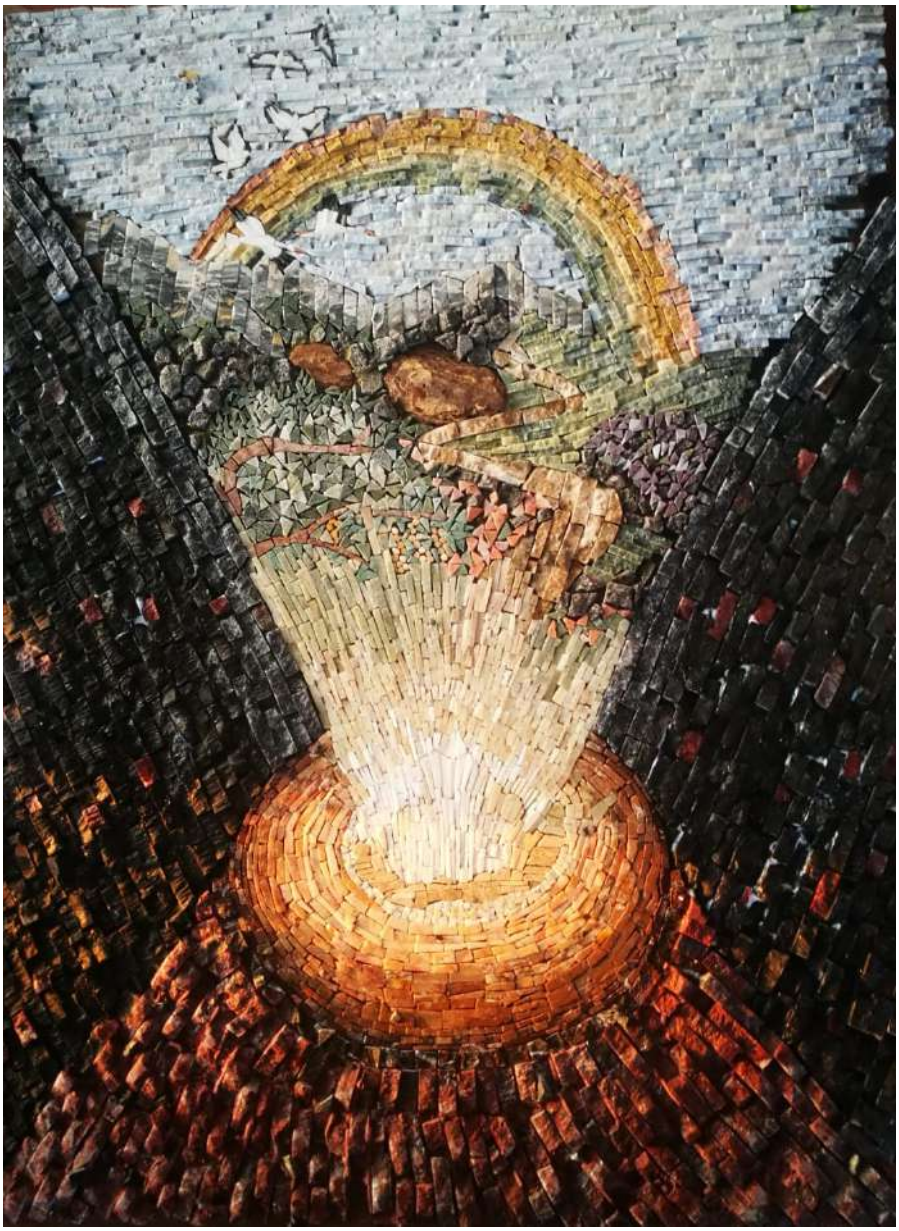
Sanatçın Kısa Özgeçmişi: 1971, İzmir/Tire doğumludur. 1992 Yıldız Teknik Üniversitesi mezunudur. Evlidir. Beylikdüzü Halk Eğitim Merkezi'nde sanatsal mozaik eğitmenliği yapmıştır. Halen Eskişehir'de kendi atölyesinde çalışmalarına devam etmektedir. Sanatçı 2015 yılında Gaziantep Uluslararası Mozaik Yarışması'nda ikincilik ödülü almıştır. Ayrıca, karakalem ve yağlıboya resim, GASMEK sanatsal mozaik, Jale Tekinalp Mozaik Okulu mikro mozaik, İSMEK cam mozaik, Seramik ESMEK, Cam Füzyon ESMEK eğitimlerini almıştır.

Eser Adı: Apollon'un (Işık Tanrısı) Doğuşu

Malzeme: Doğaltaş.

Teknik: Kerpetenle patlatma ve düz kesimle direkt teknik.

Konu: Işık. Apollon'un (Işık Tanrısı) doğuşu adlı eser, Gölyazı (Apollonia)'nın mitolojik hikâyesinde geçen "Apollon'un doğuşu ile geçtiği yerler yeşilleniyor ve renkleniyor" cümlesinden etkilenerek tasarlanmıştır (Res. 4).



Resim 4
Apollon'un (Işık Tanrısı) Doğuşu,
İlknur Altıntaş Yağmur.

Dafna BIRGER

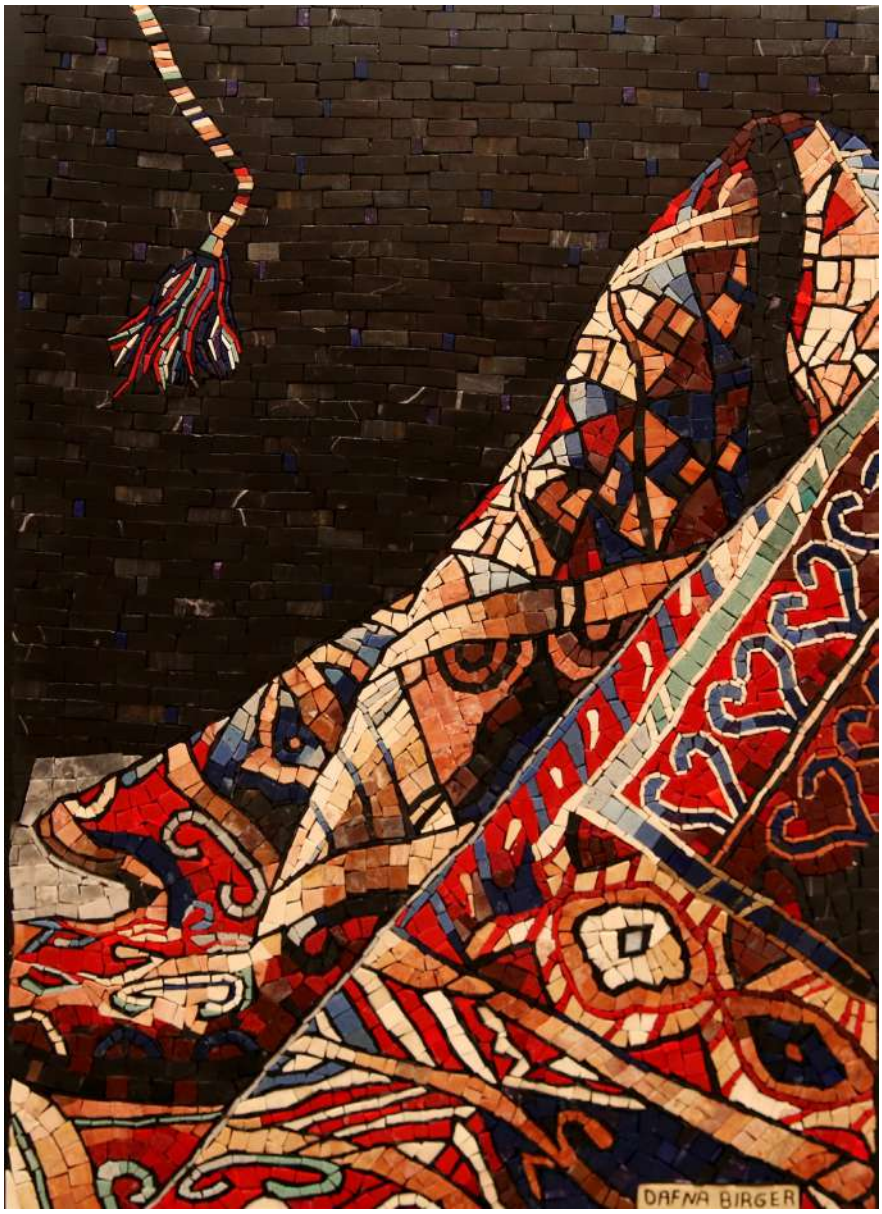
Sanatçın Kısa Özgeçmişi: Dafna Birger 1997'den beri İsrail'de mozaik sanatçısıdır. Bar Ilan Üniversitesi'nde antropoloji ve siyasal bilgiler alanlarında lisans eğitimi almıştır. Eserlerini ürettiği ve eğitim verdiği bir mozaik stüdyosunun sahibidir. Uzmanlık alanı mermer ve doğal taşlardır. Mozaik çalışmalarının çoğu farklı dönemlerden nakış, dokuma, etnik ve tarihi kıyafetler gibi tekstil alanından ilham almaktadır. "Embroidery in Stone" (Taştaki Nakışlar) isimli mozaikleriyle İsrail'deki pek çok sergiye katılmıştır.

Eser Adı: Taştaki Nakışlar / Embroidery in Stone. Sert ve güçlü taşların yumuşak bir tekstil görünümü kazanma kabiliyetini vurgulayan tekstil mozaiği.

Malzeme: Doğaltaş, mermer, smalti ve sentetik mermer.

Teknik: Eserler eski ve geleneksel bir yöntemle yapılmıştır ve sanatçı genellikle mozaik taşı olmayan malzemeleri dahil etmemiştir. Uygulama modern teknoloji kullanılarak yapılmıştır. Eser pürüzsüzdür ve bitirme işlemlerinden geçirilmiştir. Parça düzdür, ışık ve gölge noktaları ise döşemenin kıvrımlarını vurgulamaktadır ve 3B yanılsama yaratmaktadır.

Konu: Eserin konusu "ışık"tır. Döşeme üzerinde "ışık" etkisinin elde edilebilmesi için sanatçı eser üzerinde yapay ışık kullanmıştır (Res. 5).



Resim 5
Taştaki Nakışlar / Embroidery in Stone, Dafna Birger.

Gvira CASPI-HACHAM

Sanatçının Kısa Özgeçmişi: 1963'te doğan sanatçı Tel Aviv/İsrail'lidir. Sanat çalışmalarına 1985 yılında Shenkar College'da başlayan sanatçı ardından "HaMidrasha" (Beit Berel College)'da dört yıllık sanat derecesini tamamlamıştır. 2000 yılında Ravenna/İtalya'da bir stüdyoda "Arte del Mosaic" adı verilen derste doğal taşlar, mermer ve smalti taşları kullanılarak yapılan teknik üzerinde uzmanlaşmıştır. Bu dersten sonra Neve Tzedek/Tel Aviv'de kendine ait mozaik sanatı stüdyosunu açmıştır. Geçmiş yıllarda stüdyosunda çocuklara ve yetişkinlere yönelik mozaik dersleri vermiştir. İki yıl önce stüdyosunu Tel Aviv'deki Hamekarer'e taşımıştır. Sanatçı Klasik Bizans Sanatı'ndan etkilenmektedir ve bu klasiklerden bazılarını mozaik teknikleri kullanarak yeniden yapmıştır. Bundan başka pek çok farklı kültürden ilham alarak mozaik tekstil kilimleri de üretmektedir. Sanatçının çalışma süreci, halıların ve diğer tür tekstillerin fotoğraflarını çekmek ve onları bir araya getiren tasarım eskizleriyle başlamaktadır. Daha sonra bu eskizleri mozaiklere çevirir. Sürecin sonunda eserleri daha yumuşak bir görünüm alarak, antik ve klasik bir teknikte taştan yapılmış olmasına rağmen tekstil görünümüne benzer. Sanatçı pek çok grup sergisine katılmıştır.

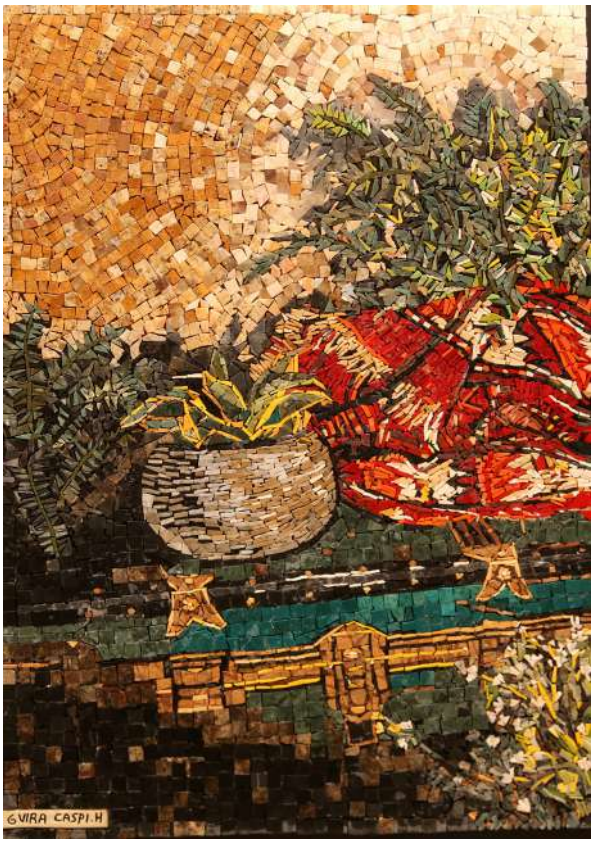
Eser Adı: Babamın Evinden Hatıralar / Memories from My Father's Home

Malzeme: Doğal taşlar, mermer, Caesar taşları.

Teknik: Alternatif mermer endüstrisinden geri dönüştürülmüş olan doğal taşlar, mermer ve Caesar taşlarının doğrudan yerleştirilmesi tekniğini kullanmıştır.

Ölçü: 50 X 70 cm

Konu: Sempozyumun konusu ışıktı. Sanatçı bu konuyu özel bir şekilde işlemiştir. Sanatçının babası ve ailesi Türkiye'den göç etmiştir ve aileye ait içinde kilim olan bir seyahat sandığı vardır. Sanatçının babası geçen yıl vefat etmiştir ve sanatçı Türkiye ile bağlantısı nedeniyle seyahat sandığının ve ailesinin fotoğrafını çekmeyi seçmiştir. Sanatçı, arka planları karanlık olan objeler üzerine ışık tutarak bu objelerin bir resmini çekmiştir. Nesnelerin üzerindeki ışık babasının hatırası, arkasındaki karanlık ise kalbindeki boşluğu yansıtmaktadır (Res. 6).



Resim 6
Babamın Evinden Hatıralar / Memories from My Father's Home, Gvira Caspi-Hacham.

Hayati ÇETİN

Sanatçının Kısa Özgeçmişi: 1949 yılında Bulgaristan'da doğdu. Sofya Güzel Sanatlar Lisesini 1969 tarihinde bitirdi. 1973 yılında Veliko Turnovo Üniversitesi St. Cyril ve St. Methodius'da Güzel Sanatlar Bölümü Uygulamalı Sanatlar – Duvar Resmi alanında lisans öğrenimini tamamladı. 1977 tarihinde Türkiye'ye göç etti. 1979-1988 yılları arasında Milli Eğitim Bakanlığı'na bağlı orta öğretim kurumlarında resim iş öğretmeni olarak çalıştı. 1988 yılında Uludağ Üniversitesi, Eğitim Fakültesi, Resim İş Eğitimi bölümüne öğretim görevlisi olarak atandı. 1994 yılında Uludağ Üniversitesi, Sosyal Bilimler Enstitüsü'nde yüksek lisansını tamamladı. Yurt içinde 6 kişisel resim sergisi açtı ve öğretim elemanlarının düzenlediği birçok sergiye katılım gösterdi. Kamusal alanda sgraffito ve mozaik tekniklerinde duvar resimleri gerçekleştirdi. Yurt dışında uluslararası çalıştaylara davet edildi ve uluslararası jürili resim sergilerine katıldı. 2014 yılında emekli oldu. Halen Bursa'da kendi atölyesinde sanat çalışmalarına devam etmektedir.

Eser Adı: Apollonia'nın Işığı ile Aydınlanan Kadın

Malzeme: Doğaltaş, mermer, çakıltaşı, seramik, smalt.

Teknik: Mozaik, direkt yöntem.

Ölçü: 64.5 X 63 cm

Konu: Işık, mitolojide Apollon ışığın ve sanatın tanrısı olarak bilinir. Işık, Apollon ile özdeşleştirildiği gibi kadın da, yaşamla, doğurganlıkla ilişkilendirilebilir. Işığın yaşamdaki ve doğadaki bütün renkleri ortaya çıkarmasına eşdeğer nitelikte bu mozaik portre çalışmasında, Apollon'un ışığında, ışığın ve yaşamın renkleri betimlenmektedir. (Res. 7).

Resim 7
Apollonia'nın Işığı ile Aydınlanan Kadın, Hayati Çetin.

Gamze ER

Sanatçının Kısa Özgeçmişi: 1966, İstanbul doğumludur. Ankara Üniversitesi, Dil, Tarih ve Coğrafya Fakültesi, Hititoloji bölümü mezunudur. 20 yılı aşkın bir süredir mozaik sanatıyla ilgilenmektedir. Çeşitli atölyelerde desen, seramik ve heykel eğitimi almıştır. İki kişisel sergi açmış, yurt içi ve yurtdışında olmak üzere birçok karma sergi, yarışma ve sempozyuma katılmıştır. Mozaik sanatının farkındalığını arttırmak amacıyla, Türkiye'nin çeşitli bölgelerinde gönüllü olarak çalıştaylar düzenlemektedir.

Eser Adı: 3. Göz

Malzeme: Doğal taş, mermer, denizde işlenmiş camlar.

Teknik: Tamamı elle yuvarlatılmış taşlardan oluşmuş bütün.

Ölçü: 70 X 90 cm

Konu: *«Gözümüz ışık sayesinde görür. 3. Göz olan gönül gözümüz, içsel yolculuğumuzda, ışığıyla bize yol gösterir»* (Res. 8).

Resim 8
3. Göz,
Gamze Er.

Daniel Georgiev IVANOV

Sanatçının Kısa Özgeçmişi: Sanatçı 1988 yılında Sliven/Bulgaristan'da dünyaya gelmiştir. Halen, Veliko Turnovo Üniversitesi St. Cyril ve St. Methodius'da Güzel Sanatlar Fakültesi'nde duvar resmi bölümünde asistan olarak çalışmaktadır. Sanatını ağırlıklı olarak mozaik ve vitray alanı ile çeşitli duvar boyama tekniklerin üzerine geliştirmektedir. 2012 yılında Veliko Turnovo Üniversitesi St. Cyril ve St. Methodius'ta duvar resmi üzerine yüksek lisans yapmıştır. 2013 yılında Ravenna Güzel Sanatlar Akademisi Erasmus programında çalışmıştır. 2018 yılında, duvar resmi alanında doktora derecesini almıştır.

Eser Adı: Apollonia'nın Geçmişten Bugüne Gelen Işığı

Malzeme: Doğal taşlar.

Teknik: Ahşap zemin üzerine doğrudan uygulama tekniği.

Ölçüler: 60 X 50 cm

Konu: Böyle bir çalışmada, mozaik panel formuyla görsel bir bağlantıya sahip olmak için, ışığın belirli bir eserde yansıtıldığı bir işlemden geçmesi gerekmektedir. Antik bir Yunan heykelinin pikselli bir imgesi olarak tasvir edilen Apollon, bu ışığın bir sembolü olarak temsil edilmektedir. Arka tarafında, Apollon'un gölgesinin silüeti Roma Dönemi için geleneksel olan opus musivum tekniğinde işlenmiştir. Arka planda, pitoresk-noktacılık Bizans mozaiğinin ruhuyla doldurulmuş bir nesnenin hiperbulistik detayı hissedilebilmektedir. İnsanlarda sanat duyusuna ilişkin algı değişikliklerine rağmen, sanatın temellerinde bir değişiklik olmamıştır (Res. 9).

Resim 9
Apollonia'nın Geçmişten Bugüne Gelen Işığı,
Daniel Georgiev Ivanov.

Bahriye MARTI GÜLER

Sanatçının Kısa Özgeçmişi: 1968, Brüksel/Belçika doğumludur. Institut Funck Lisesi mezunudur. 2007 yılından bu yana mozaik sanatıyla ilgilenmektedir. Eğitimini artırabilmek için vitray sanatı, temel sanat, desen tasarım (tezhip) gibi çeşitli sanat kurslarına katılmıştır. Yurtiçi ve yurtdışında yarışmalar ve sempozyumlarda bulunmuş, 33 karma sergide yer almıştır. Mozaik sanatını sosyal projelerle beraber yürüterek, engelli çocuklara ulaşmaya çalışmaktadır.

Eser Adı: Samanyolu

Malzeme: Doğal taş mermer, yarı değerli turkuaz taşları, kümes teli, strafor, paslanmaz çelik hurdaları.

Teknik: Karışık teknik, 3 boyutlu.

Ölçü: 60 X 80 X 10 cm

Konu: *«Işık. Her zaman karanlıkta ışık vardır. En ümitsiz durumlarımızda bile her zaman ümit vardır. Ölmüş bir yıldızın bile hala ışığı vardır»* (Res. 10).

Resim 10
Samanyolu,
Bahriye Martı Güler.

Velina STALEVA

Sanatçının Kısa Özgeçmişi: 13 Ekim 1989 yılında Kazanlak/Bulgaristan'da doğmuştur. Veliko Turnovo Üniversitesi'nden Prof. Dr. Oleg Gochev and Doç. Dr. Boris Zhelev danışmanlığında duvar resmi üzerinde uzmanlaşarak 2012 yılında lisans, 2014 yılında yüksek lisans derecesini almıştır. 2016 yılında Accademia di Belle Arti di Ravenna/ İtalya'da mozaik konusunda uzmanlaşmıştır. 2019 yılında «Bulgar Anıtsal Sanatı Bağlamında Klasik Vitrayın Çağdaş Dönüşümleri» konulu tezli doktorasını ve bir solo vitray sergisini tamamlamıştır. Staleva, yaratıcı çalışmalarını esas olarak mozaik ve vitray tekniklerinde geliştirmektedir. Toplu projeler, atölye çalışmaları, sergiler, sempozyumlar, festivaller vb. etkinliklerde yer almıştır. 33'den fazla ulusal ve uluslararası sergide düzenlenen panellerin yazarıdır: Musiwa, Floransa, İtalya; Cam Festivali, Piegaro, İtalya; AIMC Sergisi, Paray-le-Monial, Fransa; Uluslararası Cam Bienali, Bulgaristan vb. Yeni formlardaki Bulgar vitray ve mozaik sanatının geliştirilmesi üzerine yapılan yenilikçi projelerde küratör ve katılımcı olarak yer almıştır. 2018'den itibaren UBA, Veliko Turnovo ve AIMC/Ravenna üyesidir. Halen Veliko Turnovo Üniversitesi, St. St. Cyril ve St. Methodius, Güzel Sanatlar Fakültesi Duvar Resimleri Bölümü'nde yarı zamanlı öğretim görevlisi olarak çalışmaktadır.

Eser Adı: Apollonia-Mavi Işık / Apollonia-Blue Light

Malzeme: Taş, smalt, cam.

Teknik: Ahşap zemin üzerine doğrudan uygulama.

Ölçüler: 50 X 60 cm

Konu: Eser, Apollonia'nın soyut kuşbakışı görüntüsünü sunmaktadır. Suyun, toprağın ve bu ikisinin birbirleriyle buluştuğu bu yerin mistik görünüşü. Elementlerin birbirileriyle olan kontrastı ve yüzleşmesi -su ve toprak- seçilmiş materyallerden elde edilir: dünyayı ve antik kalıntıları simgeleyen doğal taşlar ve suyu simgeleyen smalt ve cam. Alanın her tarafını saran geçen ışık geçişi dengeyi sağlar ve kompozisyonun elementleri arasında simbiyoz ve uyumu yaratır (Res. 11).

Resim 11
Apollonia-Mavi Işık / Apollonia-Blue Light, Velina Staleva.

Gözde TOLAN

Sanatçının Kısa Özgeçmişi: İstanbul'da büyüdü. Yüksek lisansını Endüstriyel Psikoloji üzerine yaptı. Başarılı iş kariyeri esnasında mozaik onun için 2012 yılında bir hobi olarak başladı, daha sonra da bir tutku halini aldı. Mozaik Sanatçısı Ayça Bumin'in derslerine katıldı ve yıllar içerisinde bir dizi yeni teknik geliştirdi. 2015 yılında Ravenna, İtalya'daki en prestijli okullardan biri olan Mosaic Art School'da mozaik eğitimini ilerletti. 2016 yılının başında ise büyük bir tutku ile İstanbul Moda'da kendi mozaik atölyesini açarak her seviyede mozaik eğitimleri vermeye başladı. Mozaik aynı zamanda onun için bir çeşit terapi yöntemi, çalışmaları esnasında yoğun bir konsantrasyon ile 'şimdi' ye odaklanarak, derin bir farkındalık haline geçmekten büyük bir keyif alıyor. Bu nedenle; 2019 yılında «Mozaik Terapi» adı altında mindfulness (bilinçli farkındalık) ve çağdaş mozaik sanatını birleştirerek zihin becerilerini geliştirmeye yönelik çağdaş atölyeler yapmaya başladı.

Eserlerinde genellikle sadelik ve derinlik temaları üzerinde duruyor. Ağırlıklı olarak cam, mermer, doğal taş, organik malzemeler, madeni parçalar vb. malzemeler ile karışık üç boyutlu projeler üzerinde çalışıyor. Çalışmalarında kullandığı malzemeler genellikle onun asıl ilham kaynağı. Doğa ve doğal tasarım ona hep yön gösteriyor, yarattığı her parçada tasarım, renk veya akışta doğal bir his oluşturmaya çalışıyor. Bunun yanı sıra zaman zaman farklı boyama teknikleri kullanarak eserlerine zenginlik katmayı da sevmektedir.

Eser Adı: Yansıma / Reflection

Malzeme: Smalti cam, doğal taş (mermer).

Teknik: Karışık teknik.

Ölçü: 50 X 70 cm

Konu: Antik Apollonia Kenti'nde ışığın yansımasının soyut ve çağdaş bir tasviri. Bu eserde ışığın göz alıcı aydınlatıcı etkisi de ortaya konmaya çalışılmıştır. Ayrıca eserde açık renkli doğal taşlar ile boyut ve doku çeşitliliği sağlanarak antik kentte yapılan arkeolojik kazı çalışmalarına da vurgu yapılmıştır (Res. 12).

Resim 12
Yansıma / Reflection,
Gözde Tolan.

Kaynaklar - Bibliography

Broca 2014	L. Broca, “Queen Esther Mosaics: The Hidden and The Revealed”, JMR 7, 77-87.
Dunbabin 1999	K. M. D. Dunbabin, Mosaics of the Greek and Roman World, Cambridge.
Güvenir 2008	A. Güvenir, Mozaik Denizi, İstanbul.
Moorey 1994	P. R. S. Moorey, Ancient Mesopotamian Materials and Industries, The Archaeological Evidence, Oxford.
Müller 1939	V. Müller, “The Origin of Mosaic”, JAOS 59, 247-250.
Ödekan 1998	A. Ödekan, “Mozaik“, Eczacıbaşı Sanat Ansiklopedisi, İstanbul, 1101-1103.
Şahin 2017	M. Şahin, Bursa ve İlçeleri Arkeolojik Kültür Envanteri - III, Nilüfer İlçesi II. Kitap, Bursa.
Şahin - Özbey 2017	M. Şahin - A. S. Özbey, Apollonia a.R. Araştırmaları, Band I, Nekropol Kazıları 2016-2017, Bursa.
Vurnal İkizgül 2018	H. Vurnal İkizgül, “The Modernization of Mosaic Art in Turkey”, JMR 11, 349-360.

DOI: 10.26658/jmr.614924 JMR 12, 2019 193-197

Book Review - Kitap İncelemesi

Maja KRAMER*

Diseños geométricos en los mosaicos del Conventus Astigitanus, Sebastián Vargas Vázquez, 342 pages, 92 figures, 89 plates, bibliography. Archaeopress Roman Archaeology 13, 2016, £60,00, ISBN 978-1-78491 273 4.

Geometric compositions together with decorative elements are by far the most common motifs on Roman mosaics, but nevertheless the least documented and studied. Fortunately, this unbalance is changing and the author's second publication on the subject is not only an important contribution, but a possible paradigm changer in the field. The book presents an innovative approach and independent reading, which combined with substantial results takes a significant step towards greater understanding of the conceiving and the making of geometric compositions on Roman mosaic floors. At the centre of the study are the remarkable construction drawings of the geometric compositions found on mosaics recovered so far in one of the more prosperous areas of Roman Spain, Conventus Astigitanus, the largest of the four Conventus in Baetica. Written in Spanish, the book comprises, apart from a summary in English, an introduction, eight chapters including figures and colour plates, and a bibliography. The author´s comprehensive introduction presents the scope, the central themes and the setting of this volume as the second part of an ambitious project encompassing geometric mosaics throughout the region of Baetica. The intention is to gradually expand the investigation, the first step in the project, covering the geometric mosaics in Colonia Augusta Firm Astigi, capital of Conventus Astigitanus, was published in 2014 (S. Vargas Vázquez, Diseños de los mosaicos geométricos a Ècija (Sevilla).

The present study partly overlaps the first, but it also has a broader thrust as it sets out to become a reference work. The idea is to not only analyse the geometric-mathematical genesis and development of the designs, but to focus on the mosaic craftsmen and their role during the process. It is the outcome of their skills that is seen in the advanced, aesthetic and ever-changing features of the geometric forms and compositions. This viewpoint centres indirectly on the mosaic craft in general, as the geometric knowledge constituted the heart of the professional know-how of every workshop. It is an ambitious approach which makes the book worthy of a detailed account of its method, accessible organization and broad perspective.

Chapter One ("Objectives, organization and methodology") (the following titles are the reviewer's translation) outlines the methodologic framework and presents an initial objective of revising the information on the geometric mosaics in the Conventus Astigitanus available to this date, irrespective of whether earlier published or not. The study's focus, however, is to analyse each major basic design presented in the form of graphics (Auto CAD) to search for mechanisms of their formation and development. The turn in the investigation, the author explains, occurs due to the difficulty to obtain photos of a sufficiently good quality to work with, it became necessary to collect all available information of each geometric composition in order to reconstruct them from the base. As a result, it was found that proportions appeared to be more meaningful than exact measurements for specific mosaics. A decision was taken to reconstruct the geometric designs with ideal measurements. Consequently, a new work model was developed, which proved to be central to the outcome of the project and possibly vital for future studies.

* Maja Kramer, Hagens stationsväg 24 426 71 Västra Frölunda, Sweden. ORCID ID: https://orcid.org/0000-0002-2864-9878.
E-mail: maja.kramer.gbg@gmail.com

Chapter Two ("Historic context") provides a well-thought focus on the economy as the engine behind the rich presence of mosaics in the province of Baetica. As a major production centre for particularly the triad of oil, grain, and wine, but also for livestock, salt, wood and mining, the province had developed trade relations with the inland, along the coast and abroad (expressly with Ostia and Rome). Divided into four Conventus, there were geographical reasons why Conventus Astigitanus with its natural boundaries had a financial advantage. Throughout the extended and fertile plains with a large production of olive oil linked to the many villas, there was an initial cultural and social rise during the first and second centuries AD, followed by a second in the fourth and beginning of the fifth centuries AD. The wealth generated buildings of great luxury where sumptuous mosaic floors, both figurative and geometric, constituted a substantial part of competition for social display. Those found so far, probably constitute only a fraction of the actual production.

Chapter Three ("Current state of research") is divided into three sections, where the first contains a comprehensive overview of the field of geometric mosaics. Well related to the approach of this study, it considers both general publications and more specific works of the Iberian Peninsula. In addition to the main works in the field, such as Salies, G., Untersuchungen zu den geometrischen Gliederungsschemata römischer Mosaiken, 1974, Ovadiah, A., Geometric and Floral patterns in Ancient Mosaics from the Classical Period to the Age of Augustus, 1980, Balmelle, C. et al., Le décor géometrique de la mosaïque romaine, 1985 and 2002, other contributions of lesser scale, but equally important, are mentioned together with some basic work in opus sectile. In spite of these contributions and an increasing interest in the field, the summary reveals how little has been devoted the genre. Moreover, as the author underlines, this is a disproportionate ratio compared to the general importance of geometry, e.g. in surveying, engineering, architecture and aesthetic decoration. It constitutes an important heritage that provides insight into the Roman world's thinking and imagination. The second section treats Conventus Astigitanus where there are huge gaps in knowledge in sharp contrast to the amount of geometric mosaics found, which is a reason why this study only considers new and well-documented finds, with a majority emanating from villas. The third section focuses on Spain; it considers previous reasoning about the mosaic crafts and the workshops, including the question of collections of cartoons as a recurring theme. As it is rightly pointed out, usually based on figurative motifs, many of the earlier voiced views are not founded on firm enough ground. In recent years, however, a shift has occurred largely due to carefully documented archaeological finds, which have been able to provide more solid information about the working process.

Chapter Four ("Catalogue") presents a part of the large, by the author named opened, catalogue (including the earlier publication on the capital Ecija (Vargas 2014). It is designed to continuously include new geometric mosaics; the intention set to establish a base for further investigations. Here it presents, together with excellent photos (or drawings), 89 of the 135 geometric compositions from the total of 204 mosaic floors excavated in Conventus Astigitanus. Clearly arranged and easy to use, the information follows the geographical location, organized by urban or rural setting, which makes it easy to locate; an important feature of a catalogue. Geometric patterns are included irrespective of whether they were the main motive, a secondary panel, a border or whether it concerns a floor where figurative motifs have served as the focal point; but elements of pure decoration are excluded. However, as the focus of this study only encompasses

the basic structure of the compositions, in chapter five (“Geometric design”) and chapter six (“Analysis of drawings”), none of these parts are graphically represented or analysed; a work intended for future publications.

Chapter Five (“Geometric design”), the first of the two core chapters, is organized as a directory of construction drawings of the larger geometric panels presented in chapter four. Through the drawings, the author clarifies the repertoire of geometric structures along with a discussion on the creative process. First, each pattern is deconstructed to its simplest form and the compositions are categorized according to their dominant geometric form into twelve groups, A to L. These range from simple to complex structures with variations and subdivisions, such as linear (A), circular (B) (largest with 24 models), triangular (C), square (D) (second largest with 20 models), hexagonal (E) and so on. In the next step they are reconstructed in various stages of development, including altogether eleven intermediate phases not yet found in the material. This is a particularly fortunate undertaking as it illustrates the possible continuum of forms to be invented, developed and varied in the geometrical procedure. Here the author has found an excellent means to expose the numerous possibilities of varying the basic structures of the geometric compositions we see in almost every Roman mosaic. Next follows the different possible proceedings under each main group; first by a verbal description, then by graphic illustrations. The geometrical-mathematical procedure by compass and ruler is described first; the method of using horizontal, vertical and oblique helplines made on the surface follows and finally the real short-cut, which is maybe the most common way to reproduce a number of the frequent geometric shapes, by using templates. Applied directly on the floor, they could quickly generate a number of different compositions. Here a circle or a square, but also hexagons, octagons, meanders and swastikas, as well as some other more complex geometrical bases such as 12-angled, four-angled stars, and stars of rhombs were used.

In chapter Six (“Analysis of designs”) the author sets out a comprehensive analysis and assesses the construction drawings in Chapter five, and how they relate to each other. The first section (“Ideas of the development of designs”) recapitulates the geometric forms while showing their diversity. Most important here are the multiple outcomes that the graphic reconstructions have generated. The author points out that they were unexpected, but then again, some of the most fruitful results of the study. For instance, the study shows that a number of variations could have been created directly on the floor by only minor modifications of dimensions and colour, creating great visual effects; e.g. by just changing the colour of one row of tesserae in each template.

The second section (“Basic of geometric constructions”) begins with the definition of a geometric construction as “the basic structure of lines required to develop a pattern”. Through skilfully made graphics, the author demonstrates the amazing findings when what seemed very different patterns were discovered to originate from the same geometrical base, starting from e.g. a square or a circle, through small modifications of proportions, lines, curves, and colours. This practice also concerns the elaborated and catching three-dimensional and optical effects of movement and ambiguity, starting from e.g. hexagons, and cubes, that occur when the eye is fooled by even slight shifts between different viewpoints in attempts to create coherence and meaning. The author actually mentions this sophisticated visual play as a parallel to the Optic Art of the 1960s, which seems convincing.

The last section (“Templates”) considers tools and shortcuts used by the

craftsmen. In the absence of clear-cut evidence of readymade forms, i.e. templates, there is, however, strong both empirical and logical argument for their use, provided by the mosaics themselves. First the author refers to the frequent examples, when for example geometric shapes are abruptly cut along a border in an obvious lack of re-adaption of the pattern to a particular space. The important question of why this negligence was allowed to pass immediately leads to a second and more interesting issue; how the planning and practice of mosaics generally was conducted, and by which standards. There are also logical arguments, as new variations could quickly and easily be made, for example by simply turning the horizontal-vertical axis. As the mosaic craft is very time-consuming and one can assume that the mosaic workshops used strategies to save time, effort and energy, the use of templates seems unavoidable to explain the large amount of areas covered. As the author reiterates, the craftsmen were subordinated to the principles of efficiency and profitability just as any craft today. This is an analogy that works and is a weighty reason that is often overlooked. However, as the study shows, there are many skilfully planned, sometimes perfectly calculated and executed, complex geometric designs, including the secondary panels. This gives good reasons to believe that individual mosaic masters and mosaic workshops in Conventus Astigitanus necessarily mastered geometry, and advanced geometry too.

Chapter Seven ("Mosaic workshops and craftsmen"), divided into six sections, is a wide-ranging chapter which focuses on the existence of collections of cartoons or pattern books. To begin with, an informative overview summarizes what is known of the mosaic craft from the existing, but scarce, written and pictorial sources. The first section ("Evidence of the mosaics from Conventus Astigitanus"), describes the large variations of the material; from perfectly constructed, to ordinarily or even poorly made mosaics. Some flaws are, as the author points out, startling and show that when it comes to technique, the performance was never standardized. For instance, several otherwise perfectly - executed mosaics show surprisingly deficient preparation (e.g. pp. 294-5, fig. 65, Mosaic of the Nereids in Ecija).

The second section ("The use of pattern books"), is short, but treats one of the book's most interesting topics. As in the case of the ready-made templates, the lack of written sources and concrete tangible traces are arguments against the presence of physical pattern collections. Few doubt that there was a widespread visual legacy, memorized both unconsciously and consciously, all around the Mediterranean during the Roman period. The question how it was transmitted into visual art is another matter. The author gives convincing proof that physical cartoons constituted an indispensable working tool for mosaic makers, and the catalogue of astonishing construction drawings in the book shows how diversity necessarily was created. This is especially clear when it comes to the creation of optical effects. An example which illustrates both the consciousness of the craftsmen and their decisive use of cartoons in this way is the Mosaic of Oceanus/Neptune of Santa Maria de Antequera (pp.60-61, 300, plate 18). The common motif with three-dimensional cubes (p. 237, Design E3) surrounding the personification of Oceanus/Neptune has been turned 90 degrees in order to create a stunning effect of waves and moving water, an illusion fitting for an aquatic motif.

The following three sections ("Driving agents of a mosaic workshop", "Tesserae"," The adaption of the geometric designs on mosaics") overlap. The focus is on the unique information from the area; for instance, in the Villa Fuente

Alamo (pp. 302-303, figs. 77-81), particularly illustrative examples occur. Some of the secondary rank decorative elements of two geometric compositions are demonstrably performed very differently. A couple of the forms are professionally made by a sure hand and have obviously served as display examples for less skilled apprentices. Otherwise, in Conventus Astigitanus there is a wide spectrum ranging from quite shoddily made, to exceptionally well-made mosaics in terms of geometric complexity and practical performance.

The last section ("Identification of workshops") addresses the ever present but elusive theme of how to identify workshops within a certain area. More interesting are the results from the area's many villas as most of the mosaics found in the Conventus Astigitanus, until now, come from these major agricultural units scattered across the countryside. In essence, dated to a later period than the heyday of the city of Ecija (with its first peak in the second century AD), the late villas in the area are from the fourth century and the beginning of the fifth centuries AD, which contradicts that the skill of the craft was on drastic decline during this period. Some of them show independent choices, while others are more similar. However, almost each one exhibits a consistent ichnographically implemented programme with individual characteristics clearly made by the same workshop.

In chapter Eight ("Conclusion"), the author readdresses the themes outlined in the beginning of the volume and summarises the most important conclusions.

To conclude, this rich book is a genuine eye opener that considerably broadens our understanding of the construction of geometric design on Roman mosaics. The insight of the complexity of the patterns, their often prime role on the mosaic and the extraordinary craftmanship behind their materialisation lead positively to a revalorisation. One of the most inspiring results of the book actually concerns the evidential grounds delivered for suggesting a rethinking of the supposed low standing of the highly skilled and professional Musivarii. This happily coincides with a general trend in classical studies to broaden the, until now, rather restrained view on social status in the Roman society as limited to the legally established social categories. Subsequently, there has also been an increased focus on the link between professionality and esteem. All in all, it is hard to imagine any future study in the field that would not take this empiric and meticulous investigation into account. One could hope for a publication in English, as the Spanish limits its promulgation.

Guidelines for Authors

This journal is going to be published annually, henceforth. The articles going to be sent must be written according to these guidelines. Thank you for your involvement and attention.

The abbreviatons in this journal are based on German Archaeological Institute publication criteria, Bulletin de l'Association international pour l'Etude de la Mosaique antique, AIEMA - AO-ROC 24.2016, La Mosaique Gréco-Romaine IX and Der Kleine Pauly.

The Editor-in-Chief and the Editorial Board are in charge of the scientific content and writing standards relating to the journal. The JMR is intended to be read by archaeologists, classicists, historians, epigraphers, scientists, heritage management specialists, restorators, conservators, modern mosaic artists and others concerned with mosaics found around the world. In addition to analyze the archaeological data from excavations, surveys and laboratory research, the JMR publishes technical and methodological studies of general significance and reviews articles that appeal to a wide professional readership. The JMR also publishes book reviews, brief articles, etc.

Articles should not be sent simultaneously to the JMR and to another publication. JMR does not accept translations of articles that have already been published elsewhere. Contributors should be aware that the JMR retains the copyright for materials appearing within its pages.

All papers will be subject to a refereeing process, and may be discussed at meetings of the journal's scientific committee. Detailed comments from referees are normally forwarded to the author, anonymously, by the Editor and if necessary, the authors may be invited to revise their manuscripts.

Eligible studies will be scanned with internationally accepted academic plagiarism detector (excluding individual citations, bibliographies and footnotes cited in accordance with academic rules). Studies with more than 15% similarity will be sent back to the author/authors together with the scan result report.

Journal of Mosaic Research is requesting from the authors to obtain an approved document from the head of excavation or museum if they use photographs of excavations, archives of excavations or archives of museums in their article, and to send them to Journal of Mosaic Research.

Abstract and Keywords

The manuscripts can be written in English, German, French or Turkish. The title of the manuscripts must be written in both original language, English and Turkish. Two short abstracts (in English and Turkish) must identify the aim and the method of the article and summarize the thesis and conclusions of the article. The abstract must be capable of standing alone and so may contain no text or figure references, no bibliographic citations, and no footnotes.

Five key words must be provided under the line of the abstract. Keywords should be given in English and Turkish.

Writing Standarts

The title page of the paper should contain the titles, the author(s) name, the keywords, an abstract and the author(s) address(es) in a footnote. The text must be in a 12-point typeface of the Times font family and 1,5-spaced throughout, from the first line of the title through to the last line of the figure captions. Margins on both sides and at the top and bottom of each page should measure at least 3 cm.

Footnotes must be at the bottom of the page sequantilly. They have to be written single-spaced and 10 points in font family Times.

The digital text should be in a format that can be processed in Microsoft Word. Figures for review purposes should be provided as ".tiff" or ".jpeg" files at a resolution sufficient to retain the information in the illustration: 300 dpi for photographs and 600 dpi for drawings are usually suitable. The names for the figure files should begin with the author's last name, e.g., Akurgal_01.tiff, Akurgal_02.tiff, Akurgal_03.tiff, etc.

Dates before Christ (also "before the common era") should be written as "BC" following the actual year (e.g., 255 BC). Historical dates after Christ (in the Common Era) should be written with "AD" preceding the year (e.g., AD 1071); alternatively write "7th century AD".

References and Citations

The bibliography must contain an entry for each work cited in the text are to appear in the bibliography.

A reference within the text takes the form of a parenthetical citation. For example, "(Dunbabin 2002: 181-183)". All quotations must have specific page citations.

The use of "et al." is restricted to text citations of works for which there are three or more than three authors. Example: "(Akurgal et al. 1984: 80)".

An example of a text reference to a figure or table in another published work is "(Akurgal 1996: fig. 5 table 7)." When referring to figures and tables in the present manuscript, use "Figure" and "Table" in the text and captions; in parentheses use "(Fig. 3)" and "(Table 1)." For figures with separate parts, use lower case letters in the text and upper case letters when the reference is enclosed in parentheses. For example, "(Figure 10a)".

If a manuscript has been accepted for publication, the text citation is "(Jobst in print)." The bibliographic entry should put "in print" where the year would normally appear.

The abbreviation list of "Der Kleine Pauly" should be used for the references of ancient authors. The list is attainable on JMR webpage.

Full citations, including the names of all of the authors, complete titles, and page numbers for articles or chapters, are to appear in a bibliography at the end of the text, alphabetized by the first author's last name including publishers and place of publication for books and monographs. Authors' names should be given as they appear on the work being cited; avoid reducing first names to initials. The bibliography should be typed as in the following examples.

Article

Barringer 1991 — J. M. Barringer, "Europa and the Nereids: Wedding or Funeral?", AJA 95, 657-667.

Book

Dunbabin 1999 — K. M. D. Dunbabin, Mosaics of the Greek and Roman World, Cambridge.

Unpublished Dissertation or Thesis

De Puma 1969 — R. De Puma, The Roman Fish Mosaic, Unpublished PhD Thesis, Bryn Mawr College, Pennsylvania.

Published Dissertation or Thesis

Reitz 1979 — E. J. Reitz, Spanish and British Subsistence Strategies at St. Augustine, Florida, and Frederica, Georgia, between 1563-1783, PhD Thesis, University of Florida, Gainesville, Ann Arbor: University Microfilms.

Monograph in a Series

Jobst 1978 — W. Jobst, Römische Mosaiken aus Ephesos I, Die Hanghäusern des Embolos, Corpus der antiken Mosaiken in der Türkei I, FiE 8, 1, Vienna.

Article in an Edited Book

Abadie-Reynal 2006 — C. Abadie-Reynal, "Roman Domestic Architecture at Zeugma", R. Ergeç (ed.), International Symposium on Zeugma: From Past to Future, Gaziantep, 1-6.

Reprints

Cobo 1964 — B. Cobo, Historia del Nuevo Mundo, (Original date of publication) Biblioteca de los Autores Españoles, vols. 91-92, Madrid.

Figures and Tables

Figures

1. The word “Figure” is used to refer to all photographs, maps, charts, and graphs that accompany an article. Every illustration is to be given a figure number. Every figure must be referred to in the text, and initial references to them must be in numerical sequence (“1, 2, 3,” not “1, 3, 2”).

2. If a map is necessary, Figure 1 should be a map locating the site or study area within its wider geographical context. The JMR has an international readership that needs to be kept in mind when designing Figure 1. Field reports should include at least one photograph that depicts the terrain and environment of the site or study area.

3. A simple graphic scale, when necessary, should appear in the image area of the figures; do not give scales such as “3×” or “1:50.000” in the captions. When an object is placed on the picture and there is no scale, the dimensions of the figure can be written in the figure title. Such as “The pot on the left is 21 cm tall”.

4. The list of captions should be typed in upper and lower case letters, double-spaced, all lines justified left, and the word “Figure” should be the first word in each caption. For example;

Figure 1. Map of the Weicker site and environs. Inset shows the location of the site in NW Mexico. Map by Patricia Parker.

Each component in such a figure should be referred to in the text but, as with figures, these may be combined, e.g., “(Fig. 6c-f).”

Tables and Special Fonts

Tables and special fonts should be sent as a printed PDF page separately, because of their original form could be easily distorted.

Book Reviews

Review Preparation

Reviews in the JMR should be max. 2500 words and are expected to be critical and analytical in order to place the book under review in context. Book reviews, normally solicited by the Editor, do not require all of the details of manuscript preparation involved for a research report. Any references should follow the system given below. Footnotes and illustrations should not be used. Books being reviewed should be cited in the manner of the examples given below, followed by the reviewer’s name and full mailing address.

Mosaics of the Greek and Roman World, K. M. D. Dunbabin, 357 pages, 318 figures, 8 tables, 3 plates, 10 appendices, bibliography, index. Cambridge University Press, 2002. $40.50 paper. ISBN 0-521-00230-3.

Offprint Policy

The JMR provides the article in “.pdf” format at no charge to each author.

Yazarlar için Yazım Kuralları

Journal of Mosaic Research, yıllık olarak yayınlanan hakemli bir dergidir. Dergiye yayınlanmak üzere gönderilecek olan makaleler aşağıda belirtilen kurallara göre hazırlanmalıdır. İlginiz ve katılımınız için teşekkür ederiz.

Bu dergideki makalelerde kullanılacak olan kısaltmalar, Alman Arkeoloji Enstitüsü yayın kuralları, Bulletin de l'Association international pour l'Etude de la Mosaique antique, AIEMA - AOROC 24.2016, La Mosaique Greco Romaine IX ve Der Kleine Pauly dikkate alınarak yapılmalıdır.

Editör ve yayın kurulu dergiyle ilişkili bilimsel içerik ve yazım kurallarıyla ilgilenir. JMR, arkeologlar, tarihçiler, epigraflar, bilim insanları, kültür mirası yönetimi uzmanları, restoratörler, konservatörler, modern mozaik sanatçıları ve mozaik buluntularıyla ilgilenen kişilere ulaşmayı hedeflemektedir. Kazılar, yüzey araştırmaları ve laboratuvar araştırmalarından elde edilen bilgilere ek olarak JMR bünyesinde, mozaik konusundaki teknik ve metodolojik çalışmalar, kitap eleştirileri gibi konular da yayınlanabilir.

Makaleler JMR dışında bir dergiye eş zamanlı olarak yayınlanmak üzere gönderilmemelidir. Başka bir yerde yayımlanan makalelerin çevirileri JMR'de yayınlanmak üzere kabul edilmez. Yazarlar, JMR'nin içerisinde yer alan materyallerin telif hakkının JMR dergisine ait olduğunu bilmelidirler.

Tüm makaleler hakem değerlendirmesi sürecine tâbi tutulacak, gerektiği takdirde derginin bilim kurulunda ele alınacaktır. Hakemlerden gelecek yorumlar yazarlara iletilir ve gerektiğinde yazarın makalesini tekrar gözden geçirmesi istenir.

Uygun bulunan çalışmalar uluslararası kabul gören benzerlik tarama programlarınca (akademik kurallara uygun bir biçimde atıf yapılan bire bir alıntılar, kaynakça ve dipnot dışarıda tutularak) taranır. %15'den fazla benzerlik tespit edilen çalışmalar hiçbir işlem yapılmadan, tarama sonuç raporu ile birlikte yazar / yazarlarına geri gönderilecektir.

Journal of Mosaic Research, makalelerde, kazıların, kazı arşivlerinin veya müzelerin arşivlerindeki fotoğrafların kullanılması durumunda, yazarlardan Kazı Başkanlığı veya Müze Müdürlüğünden onaylı bir izin belgesi almasını talep etmektedir.

Özetler ve Anahtar Kelimeler

Makaleler İngilizce, Almanca, Fransızca ve Türkçe dillerinde yazılabilir. Makalenin başlığı orijinal dilinin yanı sıra Türkçe ve İngilizce dillerinde de olmalıdır. Özet, makalenin amacını, yöntemini, değerlendirme ve sonuç kısmını içermelidir. Makale özeti 200 kelimeyi geçmeyecek şekilde Türkçe ve İngilizce dillerinde yazılmalıdır. Özet bölümü, metin veya figür referansları, alıntı veya dipnot içermemelidir.

Özetin altında beş anahtar kelime yer almalıdır. Anahtar kelimeler Türkçe ve İngilizce hazırlanmalıdır.

Yazım Kuralları

Makalenin ilk sayfası, makale başlıkları, yazar isim(ler)i, özetler, anahtar kelimeler ve dipnot olarak yazarın adresi ve iletişim bilgilerini içermelidir. Metin, Times New Roman fontunda, 12 punto, baştan sona 1,5 satır aralıklı yazılmalıdır. Her iki yandaki kenar boşlukları, üst ve alt kenar boşlukları en az 3 cm olmalıdır.

Dipnotlar sayfa sonunda ardışık olarak yer almalı, Times New Roman fontunda, 10 punto, tek satır aralıklı olarak yazılmalıdır.

Dijital metin Word formatında olmalıdır. Figürler ".tiff" veya ".jpeg" dosyası halinde ve uygun çözünürlükte olmalıdır: Fotoğraflar için 300 dpi ve çizimler için 600 dpi genellikle yeterli olmaktadır. Figür dosyalarının isimleri yazarın

soyadı ile başlamalı ve sırasıyla numaralandırılmış olmalıdır. Örnek: Akurgal_01.tiff, Akurgal_02.tiff, Akurgal_03.tiff vb.

İsa'dan önce ve sonraki tarihleri belirtmede "İÖ" ve "İS" ifadeleri kullanılmalıdır.

Referans ve Alıntılar

Metin içerisinde atıf yapılan her bir yayın kaynakçada yer almalıdır.

Metin içinde yapılan atıflar parantez içerisinde kısaltma olarak verilmelidir. Örnek: (Dunbabin 2002: 181-183). Bütün alıntılarda özgün sayfa numaraları belirtilmelidir.

Üç ve daha fazla yazarlı yayınlarda kısaltma olarak "vd." ifadesi kullanılmalıdır. Örnek: (Akurgal vd. 1984: 80).

Bir yayındaki figür veya çizime yapılan atıflar "(Akurgal 1996: resim 5 çizim 1)" şeklinde belirtilmelidir. JMR'ye yayınlanmak üzere gönderilen orijinal metin içerisindeki figür ve çizim atıflarında sadece "Resim" ve "Çizim" gibi ifadeler kullanılmalıdır. Örnek: (Resim: 1, Çizim: 3). Bir numara altında birden çok resim olduğu takdirde, resim veya çizim numarasının yanına küçük harf kullanılmalıdır. Örnek: (Resim: 10a)

Yayınlanmak için kabul edilmiş, fakat henüz yayınlanmamış olan bir yayına yapılan atıflarda yazar soyadından sonra "baskıda" ifadesi kullanılmalıdır. Örnek: (Jobst baskıda). Metin içerisindeki kaynakça atıflarında "baskıda" ifadesi normalde yayın yılının bulunduğu yerde olmalıdır.

Antik yazarlara yapılan atıflarda "Der Kleine Pauly" kısaltma listesi dikkate alınmalıdır. Kısaltma listesi JMR web sayfasından edinilebilir.

İlk yazarın soyadı ile kısaltılan yayınlarda yazarların tümünün isimleri, yayın başlıkları, makaleler için sayfa numaraları, kitaplar ve monografiler için yayın yılı ve yayın yerinin yer aldığı atıflar metin sonunda yer alan kaynakçada ayrıntılı olarak belirtilmelidir. Kaynakça aşağıda verilen örneklere göre düzenlenmelidir.

Makale

Barringer 1991 — J. M. Barringer, "Europa and the Nereids: Wedding or Funeral?", AJA 95, 657-667.

Kitap

Dunbabin 1999 — K. M. D. Dunbabin, Mosaics of the Greek and Roman World, Cambridge.

Yayınlanmamış Tezler

De Puma 1969 — R. De Puma, The Roman Fish Mosaic, Unpublished PhD Thesis, Bryn Mawr College, Pennsylvania.

Yayınlanmış Tezler

Reitz 1979 — E. J. Reitz, Spanish and British Subsistence Strategies at St. Augustine, Florida, and Frederica, Georgia, between 1563-1783, PhD Thesis, University of Florida, Gainesville, Ann Arbor: University Microfilms.

Monografiler

Jobst 1978 — W. Jobst, Römische Mosaiken aus Ephesos I, Die Hanghäusern des Embolos, Corpus der antiken Mosaiken in der Türkei I, FiE 8, 1, Vienna.

Editörlü Bir Kitaptaki Makale

Abadie-Reynal 2006 — C. Abadie-Reynal, "Roman Domestic Architecture at Zeugma", R. Ergeç (ed.), International Symposium on Zeugma: From Past to Future, Gaziantep, 1-6.

Tekrar Basımlar

Cobo 1964 — B. Cobo, Historia del Nuevo Mundo, (Original date of publication) Biblioteca de los Autores Españoles, vols. 91-92, Madrid.

Resimler ve Tablolar

1. “Resim” ifadesi makalede yer alan bütün fotoğraflar, haritalar, tablolar için kullanılır. Her bir görsel için bir resim numarası verilir. Her resmin metin içerisinde bir karşılığı olmalı ve ilgili atıflar sıralı bir şekilde gitmelidir (“Resim 1, 2, 3,” şeklinde “Resim 1, 3, 2” değil).

2. Eğer bir harita kullanılacaksa, Resim 1 makalenin konusu olan bölgenin veya çalışma alanının coğrafi konumunu belirten harita olmalıdır. Resim 1’in tasarımı yapılırken JMR dergisinin uluslararası bir okuyucu kitlesine sahip olduğu göz önünde bulundurulmalıdır. Alan raporlarının yer aldığı makalelerde kazı alanı ve çevresini gösteren en az bir fotoğraf yer almalıdır.

3. Resimlerin yanında, gerekli durumlarda bir ölçek kullanılmalıdır.Resim başlığı olarak “3×” ya da “1:50.000” şeklinde ifadeler kullanılmamalıdır. Resim üzerinde bir nesnenin yer aldığı ve ölçek bulunmadığı durumlarda resim başlığında söz konusu figürün ölçüleri yazılabilir.

4. Resimler Listesi’nde “Resim” kelimesi her başlığın ilk ifadesi olmalıdır.

Resim 1. Bursa Suriçi ve çevresini gösteren harita. “Harita: Nur Deniz Ünsal”.

Resimlerle ilgili ayrıntılar “(Resim: 6c-f)” örneğinde olduğu gibi belirtilebilir. Söz konusu ayrıntıların her birine metin içerisinde atıf olmalıdır.

Tablo ve Özel Fontlu Yazılar

Tablo ve özel font kullanılan yazıların kolaylıkla orijinal düzenleri bozulduğu için her bir tablo veya yazılı metnin, ayrıca “.pdf” formatında basılı bir örneğinin gönderilmesi gerekmektedir.

Kitap Eleştirileri

Eleştirilerin Hazırlanması;

JMR’de yayınlanacak olan eleştirilerin en fazla 2500 kelime olması ve eleştiriler başlığı altında yayınlanabilmesi için analitik bir kritiğin yapılması umulmaktadır. Editörden talep edilen araştırma raporu niteliğindeki kitap eleştirilerinde, bir makalenin hazırlanmasındaki tüm detaylara gerek duyulmaz. Referanslarda yukarıda verilen sisteme uyulmalıdır. Dipnot ve resim kullanılmamalıdır. Eleştiri konusu olan kitaplar aşağıda verilen örneğe göre belirtilmelidir. Bu örneği metin yazarının ismi ve mail adresi izlemelidir.

Mosaics of the Greek and Roman World, K. M. D. Dunbabin, 357 sayfa, 318 resim, 8 tablo, 3 levha, 10 ek, kaynakça, indeks. Cambridge University Press, 2002. $40.50. ISBN 0-521-00230-3.

Ayrıbasım Gönderimi

JMR her yazara makalesinin bir örneğini “.pdf” formatında göndermeyi taahhüt eder.