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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 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.

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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.

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Nato Cad. No: 14 Kat: 1 12.matbaa 34418 Seyrantepe / Kağıthane-İstanbul Tel: +90 (212) 281 25 80; www.onikincimatbaa.com Certificate No: 33094 AIEMA - Türkiye, Antik Çağ'dan Bizans dönemine 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 Corpus 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 mozaikler dir. 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. Makaleler İngilizce, Almanca, Fransızca ve Türkçe dillerinde yazılabilir. Dergide yayınlanan makalelerin sorumluluğu makale sahiplerine aittir.

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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.

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José María Blázquez Martínez in memoriam (1926-2016)

José María Blázquez Martínez (Professor of Ancient History and Fellow of the Spanish Royal Academy of History) passed away on March 26, 2016, in the city of Madrid (Spain) after a full life devoted to teaching, scientific research and the spread of antiquity; and leaving all of us -who have had the immense fortune to enjoy his mastership and overwhelming personality-, with an immense sadness.

Prof. Blázquez graduated in Philosophy and Letters from the University of Salamanca in 1951 and defended his PhD in the Complutense University of Madrid in 1956. During the next decade, Prof. Blázquez continued his training under the supervision of Prof. Pallottino at the University of La Sapienza in Rome and, granted by the DAAD, at the University of Marburg, under the supervision of Prof. Matz and Prof. Drerup. Subsequently he made other successful research stays at the University of Tel Aviv, the British Academy of Rome, the University of Catania, and in the German Archaeological Institute branches at Istanbul, Damascus and Riyadh. In this regard, Prof. Blázquez always



defended the importance of international networks that, through academic contact with other schools and colleagues, conceived as essential for personal development and the progress of scientific research.

After this intense formative period, José María Blázquez obtained a position as Professor of Ancient History at the University of Salamanca (1966-) and shortly after at the Complutense de Madrid (1969-), where he was designated as Professor Emeritus. At the same time, he was an active member of the former Institute of Archaeology "Rodrigo Caro" (CSIC), that he directed during more than ten years (1973-1985). Finally, in recognition to his academic trajectory, Professor Blázquez was elected as a Fellow of the Spanish Royal Academy of History. In all these institutions Prof. Blázquez developed a brilliant contribution to the promotion of Ancient History in Spain, especially important was his capacity for mentoring (he supervised more than 40 PhDs during his academic life) large teams of teachers and researchers, that obtained several tenured positions in different universities and academic institutions. He was also a prolific author publishing many handbooks and monographs that are authentic milestones in history the Spanish scholarship (i. e. La Romanización, Historia social y económica. La España Romana. Economía de la Hispania romana, Bilbao, 1978, Historia de España Antigua, I. Protohistoria, Madrid, 1980; Historia de España Antigua II. Hispania romana, Madrid, 1978). Largely influential was also his leadership in the direction of the scientific journals as Archivo Español de Arqueología (1973-1987) and Gerión (1983-2010). In addition, Prof. Blázquez directed numerous archaeological excavations at Caparra (Cáceres), Cástulo (Jaén), La Loba (Fuenteovejuna, Córdoba), and in the Monte Testaccio (Rome).

By virtue of its training and its wide perspective, Prof. Blázquez's research trajectory was the reflection of the scientist dedicated to the study of antiquity, with a masterful management of

diverse written and archaeological sources, always connected with current intellectual debates of all social and human sciences. During his career published more than 37 books, acting of editor in other 9 monographs. He also published 234 articles in the most prestigious, both Spanish and International, scientific journals and several chapters in collective volumes. His research interests covered multiples areas on the study of antiquity: the Phoenician and Greek colonization of the Western Mediterranean, the Late Iron Age communities of the Iberian Peninsula, the study of Pre-Roman religions, the Impact of primitive Christianism in the Late Roman Empire, and, of course, the ancient economy of Roman Spain, with an special focus on the exports of *Baetican* olive oil.

Finally, we would like to highlight his research on Roman mosaics, whose first publication dates from 1975 - "Arte y Sociedad en los mosaicos del Bajo Imperio" [Art and Society in the mosaics of the Late Roman Empire] *Bellas Artes* 75, 1975, pp. 18-25 -soon followed by- "Mosaicos romanos del Bajo Imperio" [Roman mosaics of the Late Empire], *Archivo Español de Arqueología* 50-51, 1977, pp. 269-293., In this regard, Prof. Blázquez continued the a research line previously initiated by his teacher Prof. Antonio García y Bellido. Since 1976 to 1996, Prof. Blázquez promoted and directed the Corpus of Mosaics of Spain, within the framework of the international project sponsored by the AIEMA. Through this monumental labor, Prof. Blázquez contributed to establish the study of Roman mosaics as an authentic sub-discipline in the field of the Spanish Classical archaeology.

The obtention of several I+D Research projects, funded in competitive calls by the Spanish Ministry of Science (acting as Principal Investigator from 1976 to 1997) and an International Project of the Joint Hispanic-American Committee, with the University of West-Lafayette, Purdue (Indiana-USA), allowed Prof. Blázquez to create a permanent research team on the study of Roman mosaics. This team, which I (Prof. Neira Jiménez) am honored of have been part, managed the realization of the above mentioned Corpus de Mosaicos de España (CME), a work continued afterwards by its dear colleague, Dr. Guadalupe López Monteagudo (CSIC). In addition to the publication of 12 volumes of the CME, he presented numerous papers on the Hispanic, African and Near Eastern Roman mosaics in the most prestigious conferences on these topics, such as the International Congresses organized by the AIEMA or L'Africa romana confe-rence, organized by the Centro di Studi sull'Africa Romana of the Università degli studi di Sassari, as well as in countless courses and seminars in other ins-titutions and universities, such as the Roman Mosaic Seminar of the UC3M, to which he attended every year, without missing any of the 9 editions celebrated.

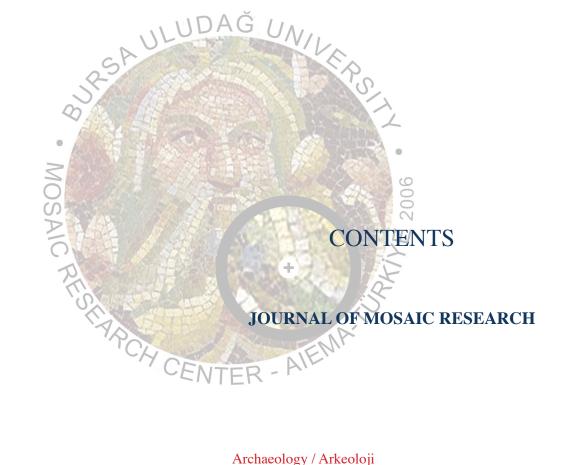
Prof. Blázquez was a firm believer in the work developed by AIEMA, having been named member of Honor of this scientific association. He also formed part of the editorial board of the Journal of Mosaic Research, where he published various articles, and presented papers in both the 11th International Colloquium on Ancient Mosaics, held in Bursa on 2009, and in the 5th Colloquium of AIE-MA Turkey , held in Kahramanmaraş on 2011. Prof. Blázquez was a true lover of Turkey.

Prof. Blázquez was an unavoidable reference in the international scholarship on ancient mosaics, many colleagues who share our pain remember his vitality even in the XIII. AIEMA Congress held in Madrid on September 2015, where he gave the inaugural conference. As a testimony of his enthusiasm for the study of ancient mosaics, he was already thinking of traveling to the next AIEMA Congress scheduled for 2018 in Cyprus. Proof of his infinite generosity, he prepared tirelessly until the end of his days a text on Diana in the mosaics of Roman Spain for X SMR, held in September 2016 at Universidad Carlos III de Madrid.

His decisive contribution to the study of antiquity has earned him numerous recognitions from many international academic institutions and associations: Fellow of German Archaeological Institute (1968), Board member of the L'Association Internationale d'Epigraphie grecque et latine (AIEGL), Member of the Hispanic Society (1974); Fellow of the Academy of Arts and Archaeology of Bolonia (1980), Fellow of the Spanish Royal Academy of History (1990), Fellow of the New York Academy of Sciences (1993), Fellow of the Academia Nazionale dei Lincei (1994), Fellow of the Fine Arts Academy of Santa Isabel de Hungría (Seville) (1995), Fellow of the Real Academia de Bones Letres de Barcelona (1997), or Fellow of the Académie de Aix-en-Provence (1999), among others. He also received many prizes as the Franz Cumont prize from the Académie Royale de Belgique (1985), the Great Silver medal of Archaeology from l'Académie d'Architecture de Paris (1987), or the Cavalli d'Oro prize from Venice (2003). Prof. Blázquez was named doctor honoris causa by the universities of Valladolid (1999), Salamanca (2000), Bolonia (2001), León (2005), and Universidad Carlos III de Madrid (2015), and received the Orden del Mérito Civil, one of the highest recognitions granted by the Spanish govern.

He was a genius as scholar, but also a genial person. For both reasons, colleagues, students, and friends of many countries, that have the fortune of meet Prof. Blázquez during his life, feel a great emptiness for the loss of our dear teacher.

Prof. Dr. Mustafa Şahin Bursa Uludağ University Prof. Maria Luz Neira Jiménez Universidad Carlos III de Madrid



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From the Roman Mosaic to the Portuguese Pavement: Continuity of an Artistic Expression in Time and Space

Roma Çağı Mozaiğinden Portekiz Döşemesine: Sanatsal Dışavurumun Zaman ve Mekân İçerisinde Devamlılığı

Maria de Jesus DURAN KREMER*

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Abstract

The embellishment of pavements has always assumed a crucial role in what can be considered the furnishing of private and public spaces. The best known in antiquity has been, without doubt, the mosaic in all its forms: pebble mosaics, opus signinum, opus tessellatum, opus sectile.

The mosaic, of Greco-Roman and Byzantine tradition, is one of the architectural and artistic elements that, for centuries, had been used to decorate the room in which they were placed. The beauty, coupled with the durability and strength of the material, was a determining aspect of the use of the mosaic as a pavement: two closely related aspects when looking at the Roman mosaic, which can still be found today on the Portuguese pavement or Portuguese mosaic, as it is called on the other side of the Atlantic.

In this article, we intend to illustrate the continuity of an art, which has kept many classic motifs alive through the centuries taking it far beyond the territories of the Roman Empire.

Keywords: Roman mosaic, Portuguese pavement, perspective, symmetry, pattern heritage.

Öz

Her zaman, özel ve kamusal alanların düzenlenmesi olarak kabul edilen döşemelerin motiflerle bezenmesinin büyük öneme sahip olduğu düşünülmüştür. Antik Çağ'da en bilinen döşeme türü ise hiç şüphesiz, her türlü mozaiklerdir: çakıl mozaikler, opus signinum, opus tessellatum, opus sectile.

Greko-Romen ve Bizans geleneğinde mozaikler, yüzyıllar boyunca yerleştirildikleri odayı dekore etmek için kullanılan mimari ve sanatsal unsurlardan birisi olarak kabul edilmişlerdir. Malzemenin dayanıklılığı ve sağlamlığının yanı sıra güzellik de mozaiğin bir döşeme olarak kullanılmasının belirleyici niteliklerini oluşturmaktadır: Roma mozaikleri ile Portekiz Döşemesi ya da Atlantik'in karşı tarafında verilen ismiyle Portekiz Mozaiği karşılaştırıldığında bugün bile hala görülebilen ve birbiriyle bağlantılı olan iki özelliktir.

Bu makalede klasik motiflerini yüzyıllar boyunca koruyan ve Roma İmparatorluğu'nun sınırlarının ötesine yayılan bir sanatın sürekliliğinin gözler önüne serilmesi amaçlanmaktadır.

Anahtar Kelimeler: Roma mozaiği, Portekiz döşemesi, perspektif, simetri, desen mirası.

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Anyone who strolls through the streets of Lisbon¹ soon realizes that, in most cases, he is treading on a different type of pavement of the ones he knows from many other countries, and that in many cases it could be considered a "carpet" in stone, such is the beauty of his compositions² (Fig. 1). It is the so-called Calçada Portuguesa. Constructed either from the application of stones of irregular shape, or from the application of regular parallelepipeds of small dimension "tesserae" of dimensions that vary between 4-5 and 12-13 cm side length³, the paving stones are almost exclusively the limestone in white and different shades of gray / black, existing in the country's quarries⁴. For certain figurative compositions, pink limestone or rejects from the extraction of marbles are also used (Henriques et al. 2009: 17)⁵.

For the people from Lisbon, the so-called Lisboetas, this type of paving, be it of pavements or squares more or less central of the city is so commonplace that sometimes the beauty and the decorative originality of these pavements go unnoticed in the hustle and bustle of daily life (Fig. 2). The approval by the Lisbon Municipal Assembly in 2013 of the Pedestrian Accessibility Plan, "an initiative that provides for the implementation of 100 measures, by 2017, to facilitate mobility in the country's capital. One of the measures provides for the removal of the Portuguese pavement"⁶ has reversed this situation and lead to a general awareness of the value of the Calçada Portuguesa as a cultural manifestation of a people, whose roots go well beyond the first modern examples of paving and pathways and can be considered a natural evolution of Greco-Roman mosaic art: A cultural manifestation that has been spreading throughout the World⁷ in the last two centuries - whether in the form of Portuguese classical black and white stone, or introducing other basic colours, such as red and yellow, or still monochrome but resorting to the use of different motifs in the decoration⁸.

If, with Justino Maciel, we consider that "it is, in fact, in the paving of constructed spaces that the mosaic issue is inserted into. It is an opus, that is, a construction method since the pavement is inseparable from architecture. There are many Greco-Latin expressions to designate this type of coating, which presumes a great variety in the decoration of these pavements which, obviously,



Figure 1 Lisbon ©Fernão Silver.



Figure 2 Av. da Liberdade, Lisbon ©flickr.com.

¹ We take Lisbon as a reference here, as it can be considered as the "homeland" of the Portuguese pavement. However, we find this type of flooring practically all over Portugal.

² Already on September 22, 1945, the magazine Século Ilustrado drew attention to the fact that the passers-by did not realize the "ground that they had trodden". The article of Judith Maggioly published in this edition of the magazine was entitled "Notice where you put your feet "and advised"... lower your eyes a little and notice that you are stepping on stars, fish, flowers, liras, birds ...", Palmeira 2016.

³ According to Palmeira 2016, the application of Portuguese pavement uses various application techniques: the old Portuguese pavement - irregular application of irregularly shaped stones; the gauntlet, similar but with more space between the stones; the classic Portuguese pavement, with a diagonal application, according to an alignment of 45 degrees with the walls or lancis; the pavement in a row, with stones aligned in parallel rows; the circular pavement; the hexagonal pavement; the artistic pavement, which is characterized by the application of stones with specific shapes and / or colour contrast; Mar Largo; segmented fan; the Florentine fan and the peacock's tail. In our view, however, this classification is situated in the pattern field and not in the paving technique itself.

⁴ Basalt is such a hard material that is difficult to cut and handle, so it is rarely used.

⁵ A fundamental work for the study and understanding of the Portuguese Calçada and its specificity, the Manual da Calçada Portuguesa was taken as basic bibliography for the elaboration of this article.

⁶ A decision that generated strong controversy and brought to the scene the civic movement Forum Citizenship Lx, which has since been fighting for intermediate solutions that preserve this cultural heritage, especially in the Historic Center of the city.

⁷ According to the decision taken by the Lisbon City Council in December 2016, the City Council of Lisbon will start the candidacy process with UNESCO for the elevation of the Calçada Portuguesa to World Heritage in 2018.

⁸ For the origins of Portuguese pavement, see; Henriques et al. 2009: 13-14.

would have to be coated with hard materials, in stone or latericium" (Maciel 2011: 36)⁹, we find to have here a definition of pavement that also applies to the Calçada Portuguesa, although with differences with regards to the preparation of the ground and the application of the materials linked to the type of functionality of the pavement which they are intended for - interior, exterior - walk, square, pavement - and local climatic conditions (South or North Europe, South or North of America, etc.). The "musive art" character of this type of pavement is so dominant that the denomination "Portuguese mosaic" appeared, on the other side of the Atlantic, for pavements in Calçada Portuguesa.

The similarities between the two types of pavement, which allow to classify the Portuguese pavements as a continuation of the Roman mosaic, can be seen both in terms of their construction, as regards the pattern collection, the use of symmetry and perspective, and even on the part played by the "owner of the work" in the choice of the iconographic program to be carried out.

The Preparation of the Soil and the Placement of the Portuguese Mosaic / Pavement

The temporal and spatial beginning of the use of the paving of spaces that unites the durability and robustness to the desired decorative beauty and representativeness is still controversial: For some authors it would have been created by Mycenaean or Minoan cultures, for others it would have been imported from Asia Minor. However, it is true that it is in Greece from the 5th century BC that we will find the first clearly decorative pavements, precursors and heralds of a decorative art that would develop especially during Classical Antiquity (Dunbabin 1999: 5-17).

In the 1st century BC, in Chapter I of Book VII of his treaty De Architectura, Vitruvius introduces a theorization and standardization of the treatment of spaces intended for the application of one of the various types of flooring used at the time (Maciel 2009: 263-265).

According to him, the correct application of the different layers underlying a mosaic pavement required a pre-treatment of the ground, which should be solid, without debris, thus ensuring the necessary strength for a correct application of the different base layers of the pavements (Maciel 2009: 263 (1)). If this was not the case, it should be beaten carefully with a packet (Maciel 2009: 263-264). Only then the three layers provided for the final application of the mosaic pavement could be placed - stone (rolled) or *statumen*, then the *rudus* - a mixture of lime, small stone, gravel, sand and ceramic remains - and finally the *nucleus*, the hardest layer consisting of a piece of lime and ground building clay, and on which the chosen floor would sit¹⁰.

This same concern is the basis of the preparation of the space for the construction of a pavement in Portuguese pavement: "*The execution of a work of Calçada Portuguesa involves several phases, and generally the first is the compaction of the floor where it will be applied, which, if it does not have the necessary cohesion, requires that a compacted tout-venant¹¹ base be made*" (Henriques et al. 2009: 47).

⁹ All the citations in this article have been translated by the author.

¹⁰ Since the detailed treatment of Vitruvian standards on the construction of a floor would exceed the theme of this article we refer to Maciel 2009: 35-40.

¹¹ *tout-venant* is a mixture of larger and smaller aggregates (the largest should be no more than 30 to 40 mm), and stone powder. It is a material supplied by the quarries and, once compacted and watered, when dried becomes quite hard and is used for the treatment of the floor of laying of roads, foundations, pavements, etc.

Once the laying base is established, the technique of applying the Portuguese pavement is now adapted to the characteristics and functionality of the pavement space and its geographic location¹². In its classic form, used in Portugal and in countries of moderate or hot weather, once compacted, the floor that underlies it, it should be covered by a 4 to 15cm layer of stone powder or sand, according to the size of the pavement to be applied (Figs. 3-4). In this layer, the pavement stones will be laid, avoiding future deformations of the pavement and the "jumping" of the stones. Once the pavement is applied, it is covered with stone powder or sand, or with a mixture of sand and cement scattered with brooms or squeegees (Fig. 5). It is then watered and compacted (Remesar - Esparza 2014: 310 fig. 4) (Fig. 6).

In northern European countries¹³ the method followed is very similar, varying only in the materials used for the laying of the pavement and for the final sealing¹⁴. According to information gathered directly from two of the Portuguese paving masters who were laying a pavement in Trier¹⁵, the laying base is previously washed and compacted. In preparation for the laying of the paving stones, a 5 cm layer of cement is spread: the stones (in porphyry, imported from Italy) are previously washed, and a layer of glue is then placed on the cement as well as on the bottom of the paving stones prior to laying, where they are well fixed (Fig. 7). Once it has dried, the gaps will be filled up. The filling material is made up of two components - one is extra-fine black sand and the other is extra-fine white sand. It is mixed with a liquid element¹⁶ and is applied with a broom, filling the gaps between the stones: then the floor is washed to remove excess material (Fig. 8).

The technique used for the laying of the external pavements in Germany is closely linked to the functionality of the pavement: "with cement, trucks, even military tanks can go over it but the pavement does not burst"¹⁷. To prevent the cement from cracking the pavement with changes in temperature, larger gaps are left in the width of the entire floor, following the pattern chosen for the decoration: these gaps are designed to allow the cement to "work" due to the existing thermal amplitudes and are filled with silicone.



Figure 3 Preparation of the stones ©Zureks.



Figure 4 Laying the pattern ©Zureks.



Figure 5 Finishing ©Zureks.

¹² A concern already mentioned in Vitruv, when referring to the prevention of the damage caused by the frost on mosaics placed abroad. See Maciel 2009: 265 (6).

¹³ Not only in Northern Europe, but also in Spain, a technique for laying the Calçada Portuguesa was more in line with the requirements of stability and continuity. See Remesar - Esparza 2014: 311.

¹⁴ In 2017, I was able to accompany in Trier the laying of Portuguese pavements on Simeon Straße the former *cardo maximus* of *Augusta Treverorum*, capital of the Roman Empire of the West (under Diocletian) and residence of his co-regents Maximianus Herculius and Constantius I Chlorus, and Constantius and Constantine the Great, who kept Trier as his principal residence for some years. Roman emperors resided in Trier on and off until AD 392.

¹⁵ Here is my sincere thanks to Jorge Almeida, a Portuguese paving master (mestre calceteiro) who was born in Viseu, trained at the School of Calceteiros in Lisbon and has been in Germany for more than 30 years, where he is practicing his profession, and his companion Amandio Silva, for the good willingness and sympathy with which they always responded to my requests for information as they went along with the pavement and the final interview, at the end of November. To the whole team - a total of six paving masters - my congratulations for the extraordinary quality of their work so far from their homeland, which shows the pride they have for their Portuguese culture.

¹⁶ The material is supplied by the company responsible for laying the pavement, and I was not able to access the chemical composition of the floor.

¹⁷ Jorge Almeida, in his last interview on November 17, 2017.



Figure 6 Final effect ©Zureks.



Figure 7 Laying the pavement, Trier ©MJ Duran Kremer.



Figure 8 Finishing ©MJ Duran Kremer.

The Mobility of Workers Yesterday and Today

"One of the most important aspects of the cultural richness of the Western world is undoubtedly the existence and reciprocal influences of different cultures, which are mixed and interact in a continuous evolution. In the past, contacts between peoples of different cultures and regions have always existed and have given rise to new cultural expressions resulting from the symbiosis"¹⁸. The Roman mosaic is, in essence, one of the most tangible proofs of this reciprocal influence, mirrored above all in the decorative grammar chosen for the different pavements and the workers skills (Darmon 2011a: 25-34): the arrangement of space to decorate, the descriptive or purely geometric-ornamental style, the inclusion or exclusion of plant or animal elements and their insertion in the composition, are all elements that make it possible to recognize the stylistic-regional school to which a particular workshop of mosaics belonged and the pavements they carried out in different parts of the Roman Empire, a testimony to the performance of these workshops a great distance from their presumed place of origin¹⁹.

However, it was not exclusively the mobility of workshops of mosaics that allowed and fostered the emergence of a new expressiveness in the paving of domestic spaces in the Roman era: the interaction of different socio-economic and cultural factors, the need for representation by the owners, the existence of catalogues of motifs - all of them combined for the more or less rapid dissemination of the mosaic as a representative and durable floor and for a certain definition of patterns "in fashion" in a certain region and in time.

The export of the Calçada Portuguesa to different parts of the world followed, basically, the same path, made by paving masters, who were first trained by the elders, who shared their craft and experience with them²⁰ (Fig. 9).

¹⁸ Project "RoGeMoPorTur" - East meets West. Investigating the reciprocal influence of east and west in the Roman mosaics with geometric patterns of Portugal and Turkey. A comparative study. RoGeMo-PorTur is an international scientific collaboration project between Portugal and Turkey.

¹⁹ We will not touch here the questions related to the individualization of workshops of mosaists, because it does not fit in the subject treated.

²⁰ Amaro 2014: He did not do well in school and his father told him to go and learn a trade. Inspired by a

With the passing of the years and the deteriorating economic situation in Portugal, many of them chose to stay in the countries where they had moved to, to perform their craft; others followed the path of voluntary migration in search of better living conditions²¹. They took along the technique learned in Portugal, and the love for their craft; they did not have pattern books, even because the decoration is defined by the owner of the work and given to them: "*The technique is the same, if you learn this technique, you can lay any stone, any pattern. Technique is everything; you need to have technique and love your work, and have everything in your head and then do the settling. It is all about the head, about the love of the art"* (Jorge Almeida).

The Signature and the Identification of the Mosaist / Paving Master

On the pavements in Roman mosaic discovered until our days the signature of the mosaist that realized the work is not very frequent, appearing mainly in mosaics of high artistic quality: this is the case, among others, in mosaics of Zeugma and Pergamon (Darmon 2011b: 38-45; Neira Jiménez 2011: 485-500)²². The reason that led to such a small number of signatures by the mosaicists who made the mosaic pavement is not yet clear: would it depend on the owner of the house to allow a signature of the artisan? Would it be up to the artisan himself to want to identify himself with the work he had done? Are there any other types of "signature" on Roman mosaic floors, which have not been identified until now? A hypothesis to be considered is provided by the "signatures" present in certain compositions of the Calçada Portuguesa.

In the Portuguese pavement, we find signatures of paving masters, which are blended on such a manner in the decorative discourse that they pass unnoticed to the less attentive observer. Contrary to the identification of the Greek or Roman mosaist, which was identified by his name or by an inscription of the type *ex oficina*, the signatures of the Portuguese paving masters are constituted, exclusively, by simple geometric, floral (Fig. 10) or animal motifs, or even letters, inserted on a geometric motif or at any point in the composition: *"There is a trick to identifying the work of a specific paving master, when they opt for using one. As in a picture, a Calçada Portuguesa can have the signature of who made it. It is a stone with a specific shape, chosen by the craftsman^{"23}.*

For the great paving masters, their work is more than a profession: it is love for the art that they create with their own hands, humble, out of the limelight, kneeling on the floor day after day. It is the "taste of art" (Jorge Almeida), the "passion for the small stones on the floor" ("*I started very young – with the small hammer in my hand - but soon I fell in love – for the small stones on the floor*", verse by António Mateus Marques, the "Tony Calceteiro") that led some paving masters to identify themselves with their compositions.



Figure 9 A Portuguese paving master in Germany, Trier ©MJ Duran Kremer.

knit neighbor, Fernando Simões begins the art of knitting at age 14. At 27, chance brought him to Macau, where he is still the only Portuguese knapsack. When the masters were going to lunch, Fernando Simões began to set stones in secret. At the age of 14, he began working side by side with the great names of Portuguese pavement art, but his work was limited to fetching water and sand. Three years later, he began to fit the white stones of the mosaic, while his masters made the decorative motifs. With the expansion of hotels in the south of Portugal, he went to the Algarve for his first major pavement work. And there he met Master Canoa, who made him cross the world to set Macau ... He came to win "quick bucks". Fernando arrived in Macau in 1996, the second batch of 12 paving masters hired to work in the Palace of Praia Grande and Santa Sancha. He saw all his Portuguese colleagues leave and, in 2003, he was already the only Portuguese paving master working in Macau.

²¹ Jorge Almeida: "Well, I left over 30 years ago and came to Germany. I came in search of a better life. Now, I am here: I earn well and the working conditions are very good. But I go there to see the family twice a year".

²² See also Béjaoui 2003; Zimmer 2010.

²³ Mestre Calceteiro Jorge Duarte in Pincha 2016.



Figure 10 Signature of a paving master ©Maternolivares.

Figure 11 Mar Largo, Rossio (Lisbon) ©Wikimedia Commons.

Roman Mosaics Pattern Tradition in the Portuguese Pavement

In its quality as decoration of space²⁴ each composition of the Calçada Portuguesa is, basically, always a unique work. This is because there is a whole process of spatial thinking on the part of the commissioners of the work, before its placement, which define the type of planning of space and the iconographic program to follow - a program that, as a general rule, should take into account the type of pavements of contiguous spaces and the type of urban construction in which they will be inserted: A decorative argument that does not deviate from the process of analysis and decision of the decorative grammar and iconographic program chosen by the commissioner of the work in Roman times. Yesterday as today, the understanding of the space to be decorated, its functionality, the introduction of factors related to symmetry and perspective or two-dimensionality, the representative character and the intrinsic message of the "image" chosen for the decoration of the floor, the choice between geometric, floral, animal patterns - or a combination of all of them, the introduction of the human element into the composition - all these factors led, yesterday as today, to a chain of arguments and to the interpretation of the symbolic language present both in the Roman mosaic and in the Calçada Portuguesa.

It is interesting to note that, with all the differences related to the material, the measurements of the surface to be decorated, the size and texture and colour of the tesserae to be used, the Portuguese pavement resumes - in different variations – a number of patterns common to the mosaics of the Roman World.

One of the most interesting themes - perhaps even considered the main symbol of the Portuguese pavement and one of the most widespread patterns especially in Portuguese speaking countries - is undoubtedly the pattern "Mar Largo"²⁵.

Selected by the Lisbon City Council for the paving of more than eight thousand square meters of the D. Pedro V Square Rossio (Fig. 11)²⁶, "*the Wide Sea pattern*



- 24 The Portuguese pavement is part of what we can consider "urban furnishing". In fact, it does not only exist as a "covering" of public spaces but also assumes the task of "decorating", "furnishing", so to speak, these spaces, combining beauty with the solidity and durability of the pavement.
- 25 "Mar Largo" = "Wide Sea".

26 For the origins of the Portuguese pavement, see Silva 2016.

symbolizes the encounter between the Tagus River and the Atlantic Ocean, which led the Portuguese into the discoveries and overseas expansion starting in the fifteenth century. The name Wide Sea for the pattern refers to the fourth part of the Portuguese major epic poem The Lusiadas by Luis Vaz de Camões" (Silva 2016: 33)²⁷.

The base motif of the Broad Sea is technically made up of parallel strips of two lines that curl differently, approaching one another at near-crossing points and creating the effect of a waving ribbon in a frontal perspective. This is a motif that we will find in the repository of motifs for the geometric decoration in the Roman mosaic (Blanchard et al. 1973: 52428, Décor I: pl. 61c). The use of this surface-fill motif, with a parallel repetition of it, in alternating fill colours in black and white, gives movement and depth to the composition, as waves of the sea in motion. We find it everywhere, with waves that are more closed or more spaced, according to the taste of the responsible entity (Fig. 12). A single example of the use of both forms - with the space between the black ribbons being fully filled but covering only a part of the paved surface, the other part being covered by the "original" version (a black row defining the track controls, of the same filled in white) of which I am aware is the Square 5 de Outubro, in Cascais (Fig. 13). In Bragança, we will find a variant of this motif, where the different thickness given to the black ribbon accentuates the wavy movement of the composition (Fig. 14).

The aspect of movement and depth is practically always present in the surface fill compositions: in Torres Novas, in Plaza 5 de Outubro, we come across a variant of another classical motif of the Roman mosaic (Décor I: pl. 9g)²⁹ (Fig. 15).

Another classic theme used in the Greek and Roman mosaic that is to find on the Calçada Portuguesa: the consoles pattern (Blanchard et al. 1973: 92 n. 496) (Fig. 16). Using a single geometric pattern - in this case a parallelepiped rectangle - the mosaist can construct a series of decorative compositions in only two colours - black and white - or different colours. In both cases, it is possible to introduce a volumetric perspective in the composition. In the example we present we use three colours - black, white and yellow - to insert movement and perspective in the composition. On the contrary, the theme of the meander in the Portuguese pavement is mostly used as a linear motif (Figs. 17, 18). Other frequent themes on the Calçada Portuguesa are in the tradition of the Greco Roman mosaic (Figs. 19, 20^{30} , 21^{31} , 22^{32} , 23).

The Message

One of the most important aspects of the Greek and Roman mosaic is undoubtedly the deep interconnection between the intended room, the purpose of the room, and the iconographic program chosen for the floor. Mosaic scholars are unanimous in recognizing the mosaic composition as a vehicle for a message understood by members of the same socio-cultural group: a symbol of wealth,

²⁷ The original pavement was subject to several remodelations, the most important of which took place in 1976 and, above all, in 2001.

^{28 &}quot;Band of two lines undulating differently, one crossing the other and creating the effect of an undulating ribbon in frontal perspective".

^{29&}quot;band of contiguous repeating rows of superposed chevrons with arms of alternating colours, forming a zigzag pattern, with effect of relief" here in two colours – black and white.

³⁰ Blanchard et al. 1973: 84 n. 448.

³¹ Circles, lined up. Salies 1974: 14 (Kreissystem Ia, 51).

³² Blanchard et al. 1973: 38 n. 166; Décor I: 96 pl. 97a.

From the Roman Mosaic to the Portuguese Pavement.../Roma Çağı Mozaiğinden Portekiz Döşemesine... 35



Figure 12 Mar Largo, Macau ©Gonçalo Lobo Pinheiro.



Figure 13 Cascais ©www.alami.com.



Figure 14 Bragança ©Foto ROC.

culture, knowledge of mythology, pride in the activity carried out (especially in Africa or in African-style floors representing everyday scenes), even of Christianity, are but a few of the messages tacitly inherent in a certain mosaic composition. The object of careful reflection and decision-making by the commissioner of the work, the iconographic program of mosaic pavement reflected, in a general way and independently of the quality of execution, the position of the agent in relation to the World that surrounded him.

In the face of the recognition of the Portuguese pavement as an evolution or modern version of the Roman mosaic in various aspects, the question arises whether there is a "message" inherent to the compositions in this type of paving of public or private spaces³³.

The analysis of the different pavements with geometric, floral or even animal motifs and their framing in the surrounding area - *conditio sine qua non* for a possible identification of the underlying iconographic program - will have to be the subject of a more detailed and individualized study. However, we must mention some examples - chosen at random from among the many existing floors.



Figure 15 Torres Novas ©J. Lourenço.



Figure 16 The consoles pattern, Elvas ©Sarmale O. on flickr.com.



Figure 17 Plaza de España, Olivença (Spain) ©Tagido.



Figure 18 Meander ©Ana Cristina Antunes.



Figure 19 Napoli ©Lindsey Hough.



Figure 20 Calçada Portuguesa ©Tugatotheworld.



Figure 21 Circles ©i.pinimg.com.

33 The use of Calçada Portuguesa as a floor for private spaces is increasing, especially in interior passageways.



Figure 22 Lagos ©ROC2C.



Figure 23 Thiasos maritime ©Toni Águas.

Figure 24 Windrose, Lisbon ©Machbel. The paving in "Mar Largo" has, as we have already seen, a direct connotation with the Portuguese Discoveries - and therefore a message to be interpreted individually by the observer. Connected to this pavement is, next to the pattern of the Discoveries in Belem, the wind rose (Fig. 24): in the center of a choppy "wide sea", a wind rose is an element of safety and tranquility, reminding that it is always possible to find the direction wanted³⁴.

Another image, this time linked to a personality that marked - and still marks the image of Portugal - is the portrait of Amália Rodrigues (Fig. 25), the great interpreter of the fado of Lisbon, now classified as intangible heritage of Humanity. Here too is a message of "lusitanism" in universality.





Figure 25 Amália ©Maria Irene-Google.

34 The question of the origin of the wind rose will not be addressed here.

A third example, simpler but not less relevant: in the city of Trier, the footprints made from the central town square - the Hauptmarkt - point the visitors the way to Porta Nigra - the only still existing gateway to a Roman city to the North of the Alps – a monument also classified by the UNESCO (Fig. 26).

A chance? A subtle message directed at the visitor? Today as yesterday, it is the observer's decision.

Conclusion³⁵

The Portuguese pavement today is undoubtedly an expression of a specifically Lusitanian culture: Inheritance of centuries of Romanization, it was not lost in the mists of time but it was able to adapt to the specificities of the present world, and to the climatic demands of the space it is call to decorate. Exported all over the world, it is a vehicle for the diffusion of a culture that has been able to transpose the beauty of the Roman mosaic to a pavement that unites it with the necessary durability inherent to public spaces, without neglecting the imaginative and innovative character of its craftsmen - the paving masters.

35 This study cannot and will not be exhaustive in its approach: among others, aspects related to the use of molds for the elaboration of more complex compositions to the mathematical calculations that underlie it, require a deeper study that cannot be the object of this article.

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Amaro 2014



Figure 26 Paving masters and the Calçada Portuguesa, Trier ©MJ Duran Kremer.

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