Reassessing Roman and Late Antique 'Marbles Lanes': one game or many?

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REASSESSING ROMAN AND LATE ANTIQUE 'MARBLES LANES': ONE GAME OR MANY?

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Abstract: Characterised by the presence of multiple depressions or pockets in a variety of arrangements, and, in some cases, the presence of a single, double, or triple 'start line' carved into horizontal stone surfaces, marble lanes in their variety of forms open a window onto ancient play that few have looked through. Thought to be a playing surface for some kind of throwing or rolling game which involved the use of glass or ceramic spheres, Roman marble lanes have received comparatively little attention in the recent upswing of scholarship on ancient play, partially as a result of the relative dearth of textual and iconographic sources discussing or depicting their usage, but these playing surfaces nevertheless represent a major corpus of ludic material. This contribution summarises past work on marble lanes before exploring the limited textual and iconographic source material related to playing with marbles. It offers a tentative new typology by which to categorise marble lanes and a non-exhaustive list of these playing surfaces recorded at archaeological sites around the Mediterranean. It then moves onto a discussion of the game/games that may be played on these boards, arguing that the wide variations in the different layouts for marble lanes may indicate that they were used not for one tightly-defined game, but more likely facilitated the playing of a loosely

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connected family of games, with implicaitons for how we think about communities of play in the past.

Keywords: Roman games; Roman archaeology; marbles; gaming culture

Introduction

'Marble lane'-type gaming surfaces have been side-lined in recent discussions of Roman board games. These marble lanes comprise elongated rectangular tracks, which are carved into the steps or thresholds of public buildings or else into the pavements of public spaces and sometimes even on roads. Marble lanes are characterised by rows of circular depressions or 'pockets,' ranging from 4 to 10 cm in diameter. The number of pockets (from at least four to as many as twenty-three) as well as their arrangement varies considerably. On some examples, two (or more) parallel lines are arranged across the short end of the rectilinear playing surface, often enclosing some of the lane's pockets. These basic details mask a wide range of variation between boards belonging to this type of gaming surface, as this paper explores.

Comparatively little attention has been paid to this type of game in the Roman and late antique world.[1] Their association with play is assured by two, or possibly four, inscriptions. One board (cat. no. 7) in the forum of Cherchell, is immediately adjacent to a graffito inviting passers-by to play: "Leave business aside, and come, let's play!" (*sepone iuria et veni ludamus*).[2] A marble lane in the Baths of Caracalla in Rome is accompanied by an inscription reading: "When you win, you rejoice, when you lose, you cry" (*vincis gaudes, perdis ploras*).[3] And less explicitly, on two boards (cat. nos. 28,

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[1] The dating of marble lanes remains to be established and is intended to be discussed in a further contribution by the present authors.

[2] Akli, 2017, 157; Schädler, 2013, 55; Schädler, 2019a, 66.

[3] Schädler, 2013; Schädler, 2019a, 66. This text is mirrored by several gaming boards used for playing duodecim scripta, the most complete are a board found in the Church of S. Balbina in Rome, the text of which reads: vincis gaudis / ludere nescis / perdis plodas (for ploras), see Ferrua, 2001, 155, no. 124, and one board of unknown provenance reading vincis gaudes / perdis ploras / efeter clamas (Bruzza 1877, 60 tab FG no. 23; Ferrua, 2001,

36), near a marble run is carved a monogram resolving as *PEL*, which may stand for the symbols of victory: "palms and laurel" (*P(alma) E(t) L(aurus)*).[4] This formula is clearly suggestive of an air of competition in the vicinity. However, despite this apparent evidence that the marble lanes were used for playing games, far more attention has been paid to the gaming boards used for playing more traditional "board" games, like *duodecim scripta* and *ludus latruncolorum,* which are widely discussed in textual sources.

In this contribution, we gather for the first time a range of textual, iconographic, and material evidence relating to 'marbles'-type games in antiquity. The picture to emerge from the first two of these strands of evidence is that a variety of games existed in the Roman period which involved throwing or rolling (spherical) objects into holes or other defined areas. However, the information we can glean about the rules of these games and how to play them is often limited or even contradictory. This may in part be due to the nature of our sources, which are highly fragmentary and were not intended to provide guides to play in the past, but it also likely reflects the way in which we play games; when considering an era before the advent of modern codification of games encouraged by official regulatory bodies and mass manufactured gaming sets, the idea of a standardised game is likely to lead us astray.[5] We do not deny that general principles of games were shared from region to region, community to community, household to household, but it is important to acknowledge that broad families of games with shared characteristics — and apparatus for playing them — could mask real differences in how the games were played and the rules that were used to play them.

Viewed through this lens, the material evidence for marble lanes presented and discussed in the remainder of the article allows us to make some remarks about the complexity and diversity of possible rules for

96 no. 70). To these boards can be added two more fragmented ones: Ferrua, 2001, 63 no. 67, and 95 no. 69.

The formula is also present on a game board for a hitherto unidentified game found on the floor of the Basilica Iulia reading "[v]incis gau[de]s perdes plangis …" (Lanciani, BullInst 1871, p. 242; Bruzza 1877, 69 tab. FG 29 = Jordan, Sylloge epigrafica del Foro Romano, Ephemeris epigrafica 3, 1877, 279 no. 41). For these boards see Schädler 1999, 52-54 with note 46. A semi-circle pattern is also discernible visible on the marble lane in the baths of Caracalla and the arrangement of the letters may indicate that this marble lane either reuses or was reused as another type of gaming board.

[4] Schädler, 2013, 55; Schädler, 2019a, 66; Bruzza, 1877, particularly 69.

[5] On reservations around mass-manufactured sets in the past see Schädler, 2007, 368.

playing games of these types. It has previously been argued by one of the authors of this paper that there is some standardisation in the layout of marble lanes.[6] This point certainly still holds partially true, but the addition of further examples not included in earlier analyses and the development of a new, loose, typology allows us to consider that several different interrelated, yet distinct families of games were played on these surfaces. This again reflects the ambiguity of the available evidence but may also hint at the different ways in which these boards could have been used in antiquity. Starting from the principal of affordances drawn from design theory, we explore some of the ways that known board layouts could have been used in the past, though it is likely that certainty about how to play these games will remain elusive.

Drawing together a broader range of material evidence for marble lanes also allows us for the first time to highlight some evidence for regional trends in play. In particular, one distinct group of marbles lanes with pockets arranged in a triangular or pyramidal fashion are currently only attested at sites in North Africa, particularly Dougga (*Thougga)*. Recent work in Roman archaeology has emphasised the globalised nature of many facets of material culture under the Roman Empire,[7] but increasingly it has been acknowledged that this needs to be tempered by recognition of 'glocal' trends — or local modifications or adaptions of more broadly recognisable trends.[8] The pyramidal marbles lanes from North Africa may be an example of this kind of regional 'glocalisation', reflecting broader Mediterranean fashions for playing a family of interrelated games, but with a local flavour. While much more work remains to be done to acknowledge regional gaming practices in the Roman world, the evidence discussed here represents a step toward acknowledging the considerable variation which likely remains to be discovered.

Our discussion is followed by a catalogue of marbles lanes; while every effort has been made to include as many of these playing surfaces as possible, the generally patchy publication record of gaming boards in existing scholarship means that there will no doubt be gaps in this dataset.[9] We hope

[6] See Schädler, 2019a, 66 and discussed further below.

[7] Pitts and Versluys, 2014 provide a useful introduction.

[8] E.g. Montoya González, 2021; Van Alten, 2017.

[9] In particular, Nouria Akli (2023) collated marble lanes in Numidia, and presented her research at the XXI Board Game Studies Colloquium but her work appeared in print

that these will be filled as the study of games in the ancient world continues to mature.

Game mechanics: past work

Our understanding of how marble lanes were used for play remains at a preliminary stage. This is perhaps understandable given the lack of detailed textual sources, but the morphology of these playing surfaces may nevertheless serve to guide us. In 2011, Francesco Trifilò identified the game played on gaming surfaces of this type as mancala, which is still played in Africa, across the Middle East and elsewhere.[10] However, mancala is typically played on two parallel lines formed from an equal number of depressions, unlike the irregularly placed pockets present on marble lanes.[11] Moreover, he overlooked that on one side of the group of pockets, often there are two parallel incised lines, which are absent from the other side. And he did not understand that the pocket sometimes situated at a certain distance from the main group on the opposite side of the parallel lines may belong to the same playing surface. Additionally, we now have a clearer understanding of the development of mancala, and our present evidence does not allow us to assert that this game was played in antiquity. It has been hypothesised elsewhere that some boards formed from rows of squares for playing Five Lines (*pente grammai*) could have been subsequently repurposed for playing mancala, but if this took place the dating for such an adaption is unclear.[12] It is therefore very unlikely that mancala was played on marble lane type boards.[13]

Before Trifilò, two primary hypotheses had been advanced about how marble lanes were used for play. First, Luigi Bruzza discussed a lane without a known location (cat. no. 28) in 1877, and suggested that this design was an early form of marbles game, which was played as follows:

[…] vinceva chi, superandole tutte, riusciva a far restare una pallottola nell'ultima che era la più lontana, ha presso a questa, per indicare la vittoria, invece della palma la

too late to be considered in detail here. Not all of the examples that Dr Akli published can be considered marble lanes given that some have only one 'pocket.'

[10] Trifilò, 2011, 321-2.

[11] De Voogt, 2012; De Voogt, 2010; De Voogt, 1997; De Voogt, 2021.

[12] Schädler, 1998.

[13] From all this it is clear that Trifilò's conclusions regarding the types of games at the Basilica Iulia need to be reconsidered in light of the arguments presented here.

monogramma PE[L]; onde si conferma quanto sul significato e sullo scambiarsi che fa colle palma ho detto di sopra.[14]

[…] the winner was the one who, by passing over all [the holes], managed to make a ball land in the last and most distant one, which has close to it, to indicate victory, the monogram PE[L], instead of the palm. Hence what I said above about the meaning [of PE] and the way it stands in for the palm tree is confirmed (trans. authors).

For Luigi Bruzza, then, this is a game which revolves around a ball reaching a specific, special pocket, with the others acting as obstacles. The same general concept has subsequently been restated and modified by Ulrich Schädler.[15] Schädler argued that players had to throw or roll their marbles from within the two lines which delimitate the ends of some lanes, effectively providing a 'starting position' like the baulk line in modern snooker.[16] He too suggests the aim may have been for a player to target the pocket furthest away from them, while avoiding any intervening pockets.

A second suggestion was advanced by Victor Waille in 1893, in relation to the marble lane from Cherchell (cat. no. 7). For this scholar, the pockets were not obstacles but instead presented a range of different targets, each worth different numbers of points. He explained:

> *En haut, il y a une bande large de 0 m. 07, granulée, piquée au marteau, et qui peut-être était séparée du reste de la partie lisse par une planchette verticale. Supposons une boule d'ivoire lancée par ce chemin longitudinal à l'aide de la main, d'une queue ou d'un ressort, la boule descendra, ricochera entre les cavités et s'arrêtera, comme au billard anglais, dans telle ou telle cuvette correspondant sans doute à des numéros qu'on additionnait ensuite. Quatre cavités sont réparties entre deux lignes qui formaient probablement une zone privilégiée, où s'arrêtait la bille lancée ni trop doucement ni trop fort, c'est-à-dire la bille du gagnant.*[17]

[14] Bruzza, 1877, 69.
[15] Schädler, 2013, 55; Schädler, 2019a, 66; Schädler, 1994.
[16] Schädler, 2013, 55; Schädler, 2019a, 66; Schädler, 1994.
[17] Waille, 1893, 403.

> At the top there is a band 0.07 m wide, rough [and] covered in tool marks, and which was perhaps separated from the rest of the smooth part by a vertical board. Assuming that an ivory ball is launched along this longitudinal path by hand, with a cue, or with a spring, the ball will fall, ricocheting between the pockets and will stop, as in English billiards, in this or that pocket, probably corresponding to numbers [of points] that were then added up [i.e. tabulated]. Four pockets are distributed between two lines which probably formed a privileged zone, where a marble launched neither too softly nor too hard stopped, that is to say, the winning marble (trans. authors).

Victor Waille's interpretation does not appear to have attracted much attention in subsequent scholarship, but the sort of game which he is describing at Cherchell is certainly very different from the one which Luigi Bruzza and later Ulrich Schädler discussed largely — though perhaps not exclusively — on the basis of the marble lane layout at Timgad. These differing visions of the games played on marble lanes may reflect the very different nature of these types of lanes, as we shall discuss below. These divergences may also in part arise from relatively small sample of marble lanes which have been discussed in any detail until now. In what follows, we seek to broaden the evidence base for marble lanes in antiquity, discussing first a few key passages of ancient literature, before passing on to a typological examination of these playing surfaces. We argue that the material evidence supports the possibility that a variety of inter-related types of 'marble lanes' were used for playing a family of related but distinct games in antiquity. The different typological layouts of some of these playing surfaces probably reflects distinctive rules and playing practices, the precise details of how to play these games remains elusive.

Textual sources

The possible references to marble-type games in ancient textual sources are frustratingly thin. Several scholars, most notably Anita Rieche and Jutta Väterlein, have pulled together the limited textual evidence for throwing games involving nuts.[18] This earlier work has since been highlighted by

[18] Rieche, 1984, 10-13; Väterlein, 1976, 13. Principal among these texts is Pseudo-Ovid's poem, The Walnut Tree, which discusses a variety of throwing, rolling, and shooting games played with walnuts.

Walter Crist and others in a wider discussion of marble lanes, though it is unclear whether any nut-throwing games were played on marble lanes.[19] Elsewhere, however, several other proposals have been advanced about texts which refer to games played on surfaces of this type. This existing work has not previously been pulled together in one place and deserves to be reviewed and evaluated. In what follows, we these passages are difficult to interpret and provide limited information about how these games were played.

Two passages and one possible inscription have been identified which could refer to games played on marbles lanes. All date from the Roman period.[20] Both texts were written in Latin, but they do not use the same term for the game they are discussing. Suetonius, writing in the early 2nd century CE, discusses the gaming predilections of the emperor Augustus, who in his old age played various games with young boys "at dice, marbles and nuts" (*talis aut ocellatis nucibusque*).[21] We lead with the Latin text here out of deliberate choice. The identification of these games, and by extension, the way in which they should be translated has been disputed, though in part this almost certainly reflects a lack of interest in — and knowledge about — ancient games in ancient world studies more broadly. The matter is complicated by the fact that *ocellatus,* from *ocellus,* eye, is a rare word; its only other recorded use is by Varro, who employs it to discuss "a small stone marked with eyes or spots" (*altera exorat patrem libram ocellatorum)*.[22] Varro's use of the word, therefore, is only of broad use in clarifying how we should understand this word here. In spite of this, there is remarkable consistency in how this term is translated in the literature. For John Carew Rolfe, this passage refers to: "dice, marbles (*ocellati*) and nuts."[23] He is followed by several other translators of Suetonius. For example, in successive translations, both Robert Graves (1957) and Catherine Edwards (2000) translate the passage in the same manner: "dice, marbles and nuts."[24] Ulrich Schädler agrees with these earlier scholars in suggesting that *ocellati* can

[19] Crist, de Voogt, and Dunn-Vaturi, 2016, 144-146.

[20] Schädler, 2013, 55; Schädler, 2019a, 66.

[21] Suetonius, Augustus, 83.1 (trans. John Carew Rolfe, Loeb).

[22] Varro, apud Nonium 213.30 (ed. Wallace Martin Lindsay), quoted in OLD, "ocellatus."

[23] Suetonius, Augustus, 83.1 (trans. John Carew Rolfe, Loeb).

[24] Suetonius, Augustus (trans. Robert Graves), pp. 99-100; Suetonius, Augustus (trans. Catherine Edwards), p. 85.

designate the round objects we now call marbles.[25] This appears to be an appropriate conclusion, given that the marbles are often made of colourful glass, with a spherical shape which mimics an eye: we know that such objects existed in the Roman world.

The second possible reference to marbles games is late Roman. In his *Confessions*, written between AD 397 and 400, St Augustine laments that "human failings are the same from the childhood time of slaves and teachers, nuts and ball games and birds (*a nucibus et pilulis et passeribus*) as in the adult transition to magistrates and monarchs."[26] It is unclear how the key term — *pilulis* — should be understood. *Pilula,* a diminutive of *pila* (ball) appears over 100 times in the *Library of Latin Texts*.[27] The word is widely used by medical writer Scribonius Largus to refer to medicinal ingredients and medicines,[28] and one of the most prolific users of the word is Pliny the Elder, who uses both to refer to medicines and in the context of trees and the products they bear.[29] However, it may be that by Late Antiquity, the meaning of the word had changed or it had gained an additional significance: in his *Book of the Glories of the Martyrs,* written during the 6th century, Gregory of Tours refers to the sale of glass *pilulis,* though it is not clear what their function was.[30] It has been suggested that here, *pilulis* could refer to marbles-type games.[31] There may be some merit in this suggestion, given that the term does appear to refer to small balls, which fits well with the form of modern gaming marbles.

We must admit, however, that other readings grounded within Augustine's objectives as a Christian author are possible. The passage concludes a book of the *Confessions* which is concerned with boyhood and sin. Augustine's key argument in the preceding pages is that small sins are as sinister as big ones and are just as serious. Not much earlier in the text, Augustine twice mentions[32] playing with a ball, *pila,* and his reference to

[25] Schädler, 2013, 55; Schädler, 2019a, 66.

[26] Augustine, Confessions 1.19.30 (nam haec ipsa sunt quae a paedagogis et magistris, a nucibus et pilulis et passeribus, ad praefectos et reges, aurum, praedia, mancipia, haec ipsa) adapted from the Loeb edition (trans. Carolyn J.-B. Hammond).

[27] https://about.brepolis.net/library-of-latin-texts/

[28] E.g. Scribonius Largus, Compositiones 2.17.8; 39.28.18; 75.42.5.

[29] Medicine: e.g. Pliny, Natural History, 27.5.20; 35.52185; Trees: Pliny, Natural History, 16.10.28-29; 16.10.31.

[30] Gregory of Tours, Book of the Glories of the Martyrs, 1.2.58.

[31] Schädler, 2013, 55; Schädler, 2019a, 66.

[32] Confessions 1.9.5.

pilulae appears to refer back to this earlier reference to play while summing up his arguments. The use of *pilulis* underscores the danger of the seeming insignificance of the pursuits of youth, which should be contrasted with the (much larger) sins associated with adult life. This symbolic reading appears to have been implicitly adopted by several modern English translators of Augustine: Carolyn Hammond gives it as "ball games"; Edward Bouverie Pusey chooses "balls" and for Henry Chadwick too it is "balls."[33] At the same time, though, this may also reflect the limited consideration given to games by most scholars. In light of these considerations, we cannot be sure whether this text refers to marble-type games; both readings are plausible.

Another possible reference to marbles-type games comes in the form of an inscription from the city of Rome.[34] The early 2nd-century AD inscription was found on the Vatican Hill, near St Peter's and was probably once a statue base. The inscription names an individual named Ursus "who was the first Roman to play with a glass ball properly" (*togatus vitrea qui primus pila lusi decenter*).[35] While some, like Donald Harden, have suggested this was a reference to a game,[36] others, notably Edward Champlin, have argued that this was a clever piece of political allegory and alluded to the honorand's political career.[37] This need not necessarily be the case. With several finds of glass balls, regularly identified as marbles, and the marble runs examined herein, it remains possible that this inscription is referring to games played with marbles, albeit in a comedic or sardonic manner.

Another term is worth discussing here in more detail is *tropa.* This word apparently refers to a game. It is, for example, included in the section of the 2nd-century *Onomasticon* of Julius Pollux dedicated to games.[38] The term is employed by a range of other authors: for example, Cratinus tells us that: "[…] they play at *tropa* with the acorns, throwing them up high."[39]

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[33] Ibid., cf. Augustine, Confessions (trans. Carolyn J.-B Hammond, Loeb), p. 55; Augustine. Confessions (trans. Edward Bouverie Pusey), p. 9; Augustine. Confessions (trans. Henry Chadwick), p. 21.

[34] CIL VI.9797 = ILS 5173.

[35] Champlin, 1985, 159

[36] Harden, 1936, 289.

[37] Champlin, 1985, pace Schmidt, 1999 who reads the inscription as a literal reference to leisure (otium).

[38] Pollux, Onomasticon. 9.103 ed. Costanza 2019, 119, 213.

[39] Cratinus fr. 180 K.-A. ap. Scholia Arethas, in Plato, Lysis 206e = Suetonius., De ludibus 1,26 T. p. 67 (ἢ Διονυσίοις ἀκύλοις παίζουσ' ἀνέμενοι τρόπα), quoted in Costanza, 2019, 119.

However, there seems to have been some degree of fluidity in the way that this game, or perhaps family of games, was played. While Photius tells us that *tropa* is a "game [played] with astragals."[40] The scholiast Arethas tells us that "*tropa* is throwing something into a hole from a certain distance."[41] And Hesychius describes *tropa* as "a type of game, in which astragals are rolled towards the other side."[42]

Victor Waille suggested that *tropa* was the game played on the lane in Cherchell in his partial reconstruction discussed above.[43] However, on the basis of the references to *tropa* just presented, it is far from clear what the game consisted of: it appears that throwing rather than rolling is a key element of the game, but there seems to have been some flexibility about precisely *what* kind of object was thrown: for some authors, this is clearly defined, e.g. acorns or astragals, but in other situations, it appears that any rollable object would have been acceptable. The sources are also far from unanimous about how or where these objects ought to be aimed: for Cratinus, this is "up high," for Hesychius the goal is simply "towards the other side," presumably of a lane, but for Arethas it is "into a hole." This last passage is, though, perhaps the most significant for our present purposes, because it refers to the target as a single hole. It is unclear whether this reflects literary embellishment: the possibility that "a hole" here stands almost metonymically for a range of different holes cannot be excluded. However, the simplest reading would be that *tropa* involved aiming at a single target, at least in the version described by Arethas.

Two explanations can be suggested to explain the discrepancies. First, none of these texts were aiming to explain precisely how *tropa* was played in any detail and were instead intending to serve as poetic references or explicatory notes to readers. Secondly, it may be that *tropa* refers to a family of games, loosely interconnected by some common rules or concepts (e.g. throwing, the target of (a) hole(s) or finishing area), just like the modern term

[40] Photius, t 493 Th. 3,500 (τρόπα· διὰ ἀστραγάλων παιδιά), quoted in Costanza, 2019, 119.

[41] Scholia Arethas in Plato, Lysis, 206e p. 457 Greene = Suetonius, De ludibus 1.26 T. p. 67 (τρόπα δὲ ἐστὶν ἡ εἰς βόθυνον ἐκ διαστήματος βολή), quoted in Costanza, 2019, 119.

[42] Hesychius., t 1485 C., p. 79 (τρόπα· εἶδος παιδιᾶς, καθ' ἣν στρέφουσι τοὺς ἀστραγάλους εἰς τὸ ἕτερον μέρος), quoted in Costanza, 2019, 119. It is possible, however, that the usage of the verb στρέφω by Hesychius expesses the idea that a knucklebone does not "roll" or "move" in the same way as a spherical object such as a ball or marble.

[43] Waille, 1893, 403.

billiards refers to several distinct but related cue sports like English billiards and carambole billiards, the latter with its own many distinct sub-disciplines and variants.[44] This comparison is particular apposite because it would help to explain the diversity of different types of play which are linked to *tropa* in the passages we have just reviewed.

Most references to *tropa* are found in Greek literature, but this is clearly a game which was known to Latin-speaking Roman authors as it is mentioned by Martial:

> *Paulum seposita severitate,*
> *dum blanda vagus alea December*
> *incertis sonat hinc et hinc fritillis*
> *et ludit tropa nequiore talo,*
> *nostris otia commoda Camenis,*
> *nec torva lege fronte, sed remissa*
> *lasciuis madidos iocis libellos*
>
> "lay aside your gravity for the nonce, and while December goes hither and thither with his seductive hazard and on all hands the doubtful dice boxes clatter and *tropa* plays with yet naughtier knucklebones, lend your leisure to my Muses. Be your brow not grim but relaxed as you read my little books, all steeped in wanton jests" (*Epigrams,* 4.14.6-12: trans. David Roy Shackleton Bailey, Loeb).

It is apparent that *tropa,* whether this term refers to a single game or a wider family of them, was known in the Roman period. However, the lack of specificity about the rules and mechanics of *tropa* means that is unclear whether there is any connection between games of this type and the marbles-lanes type playing surfaces. In other words, Waille's hypothesis remains unproven, yet it cannot be excluded based on the evidence available to us at present. However, unlike the playing surfaces from Timgad and Dougga with their regular arrangement of pockets, most of the marble lanes hitherto known show a certain disorder in the positioning of the pockets, thus making it difficult to ascribe values to them.

[44] On billiards see in general Shamos, 1993.

Some of these texts may refer to games we would recognise as 'marbles', but they do little to tell us about how the game was played, or the type of playing surface which it required. Because of these shortcomings in our textual and epigraphic sources, marble games have been understudied in comparison with other Roman period games, but a broader analysis looking at material culture, anthropological evidence, and other games of skill involving throwing or rolling objects will allow us to advance our understanding of these elusive pastimes.

Iconographical evidence

Material culture indicates that games which involved rolling small spherical objects existed in the Roman period. Several sarcophagi of the 2nd and 3rd centuries also depict children playing ball games aided by a sloped surface. A late 3rd-century sarcophagus now in the Museo Chiaramonti at the Vatican depicts scenes of children at play, including a game which seems to revolve around rolling multiple round objects down an inclined plane (Figure 1).[45] The spherical objects used by this group of children are clearly distinct from the nuts used by the boys left of them. A 2nd-century sarcophagus, now in the Louvre but said to be from Campania, shows a similar type of game (Figure 2).[46] Neither of these gaming scenes have attracted much detailed attention in the scholarly literature. For example, Janet Huskinson terms the game played in the Vatican simply "a game which seems to involve sliding balls down an inclined plane," but does not discuss them further.[47]

Several other sarcophagi show cupids playing a game, also involving round objects and an artificial slope. A sarcophagus in the Musei Vaticani (late 3rd-century CE) appears to depict cupids playing a game which comprises throwing or rolling a spherical object.[48] This could be ball, which has led Janet Huskinson to suggest that we are looking at a skittles-type game, but a pile of spherical objects indicates it is just as likely that this scene represents a game known as *nuces castellatae.*[49] A 3rd-century sarcophagus lid

[45] Vatican, Museo Chiaramonti, Inv. 662; Huskinson, 1996, 23, no. 1.35.

[46] Louvre, Département des Antiquités grecques, étrusques et romaines, Cp 6467; Ma 99; Huskinson, 1996, 21, no. 1.20.

[47] Huskinson, 1996, 17.

[48] Vatican, Museo Belvedere, Inv. 925l, Huskinson, 1996, 51-2, no, 6.43.

[49] Huskinson, 1996, 42. On nuces castellatae see e.g. Rieche, 1984, 11-12; Väterlein, 1976, 13.

originally found in the Jewish Catacomb of Vigna Randanini depicts a similar scene: cupids again play a game which centres on rolling round objects, with a central perforation, down an inclined board.[50] Janet Huskinson suggests that these objects may be "some kind of quoits."[51]

The iconography of these depictions remains to be disentangled in future work, but two major methodological considerations impact any attempt to reconstruct ancient games. First, neither relief scenes on sarcophagi nor floor mosaics are intended to be true to life and it is increasingly recognised that they were intended to depict a stereotyped view of recognisable activities as part of an iconographic and symbolic programme.[52] As a result, we cannot use them as a detailed or faithful guide for how games were played in the past, though they can provide some general insights because the need to create recognisable scenes meant that they must bear some relation to games *as they were played.* Secondly, we struggle to identify spherical objects, which could represent marbles but may also be a range of other round objects.[53] This complicates any reconstruction which uses this iconography, as the scales at which the thrown objects are represented may be skewed, or the use of the objects in question may not be true to life. Additionally, sarcophagi intended for adults may not depict such games because they were probably age markers for childhood activities and as such inappropriate. The general value of these scenes, in combination with the texts discussed above, is to show that a variety of games which involved rolling spherical objects existed in antiquity. While some of these games apparently involved players throwing or rolling spherical objects with their bare hands, others used the aid of an artificial slope to allow the ball, marble, nut, or other thrown objects to gain momentum.

To sum up, the absence of clear reference to marbles-type games in other ancient sources means we are left without textual tradition to guide us. Iconography can offer some hints but does not take us much further because of methodological limitations inherent in its use. In order to understand more about 'marbles lanes,' we must therefore turn to the

[50] Museo Romano Nazionale, Inv. 67612.

[51] Huskinson, 1996, 45,, 49, no. 6.31.

[52] Huskinson, 1996, 42; Harlow and Laurence, 2002, 51; Lorenz, 2010, 313. In relation to games see e.g. Dasen and Mathieu, 2021-22.

[53] Huskinson, 1996, 42.

material evidence, which has until now not been gathered together in one place or analysed in a systematic fashion.

Figure 1: Front panel of late 3rd-century sarcophagus showing children playing a ball game with the aid of an inclined slope. Vatican, Museo Chiaramonti, Inv. 662. Courtesy of Sergey Sosnovskiy via ancientrome.ru (CC BY-SA 4.0).

Figure 2: Detail of late 2nd-century sarcophagus showing children playing a ball game with the aid of an inclined slope. Musée du Louvre, Département des Antiquités grecques, étrusques et romaines, Cp 6467; Ma 99. Courtesy of Marie-Lan Nguyen via Wikicommons (CC BY 3.0).

Identifying 'marbles' in the archaeological record

A range of spherical objects in various materials from across the ancient world have also tentatively been described as 'marbles.' These include spherical glass objects in a range of museum collections without

archaeological contexts,[54] and bronze ones from children's graves of Greek date in Locri Epizefiri.[55] Additionally, a spherical burned bone object identified as a marble was been found together with a die in the same material in the theatre at Pompeii, and the association of the two objects may suggest they were both used for play.[56] A few other published examples including small stone, terracotta or glass balls come from 1st- and 2nd-century CE contexts in Vienna (*Vindobona*), Lyon (*Lugdunum*), Vieux (*Aregenua*), and Lillebone (*Juliobona*), with the glass examples from the latter site recovered in the tomb of a child.[57] Similar spherical glass objects from other parts of ancient world, such as Egypt, Cyprus, or the Aegean have been published as marbles, though it is unclear whether these were used for play or other purposes.[58] When these objects are found together *as a group*, it is possible to suggest their use for play as part of a set. Pollux and other authors mention that different types of nuts could be used for *tropa*, as we saw above, and similarly we may infer that it was the case too for marbles-type games. Spherical objects were not just for play, though, and inscribed examples have been interpreted as tools for divination or magic, so it is important to be cautious when interpreting this kind of artefact.[59]

Marble lane types

The wide variation in marble lane types and the poor preservation of many examples make it impossible to establish a strict typology. However, the creation of a loose typology with room for the addition of further subgroups or additional categories is meant to provide a useful resource for future scholars. It may also offer a means by which to unpick the types of games (rolling, throwing, or pushing/knocking). The typology which follows is thus intentionally broad and groups marble lanes according to a variety of features including the presence or absence of 'start' lines, the arrangement of the pockets, and the number of pockets present. Throughout these sections, we illustrate as many of these examples possible, with a view to

[54] Sternini, 1998, 109-110, V108-V110; Lubsen-Admiraal, 2003, 356 nos. 783-784.

[55] Cerchiai, 1982, 291.

[56] Pace, In press, scheda di contesto n. 154.

[57] Vindobona: Author's personal observations. Other sites: Schädler, 2019a, 67, figures 3-6.

[58] Egypt: Harden, 1936, 289-290, nos. 872-893. Cyprus: Lightfoot, 2017, 307, no. 468. Aegean: Zaphiropoulou 1973, 614, nos. 16-21.

[59] Brugnone, 2011; Berdeaux-Le Brazidec and Feugère, 2011, 17, no. 1.

providing a visual guide to the identification of marble lanes as more are discovered or identified.

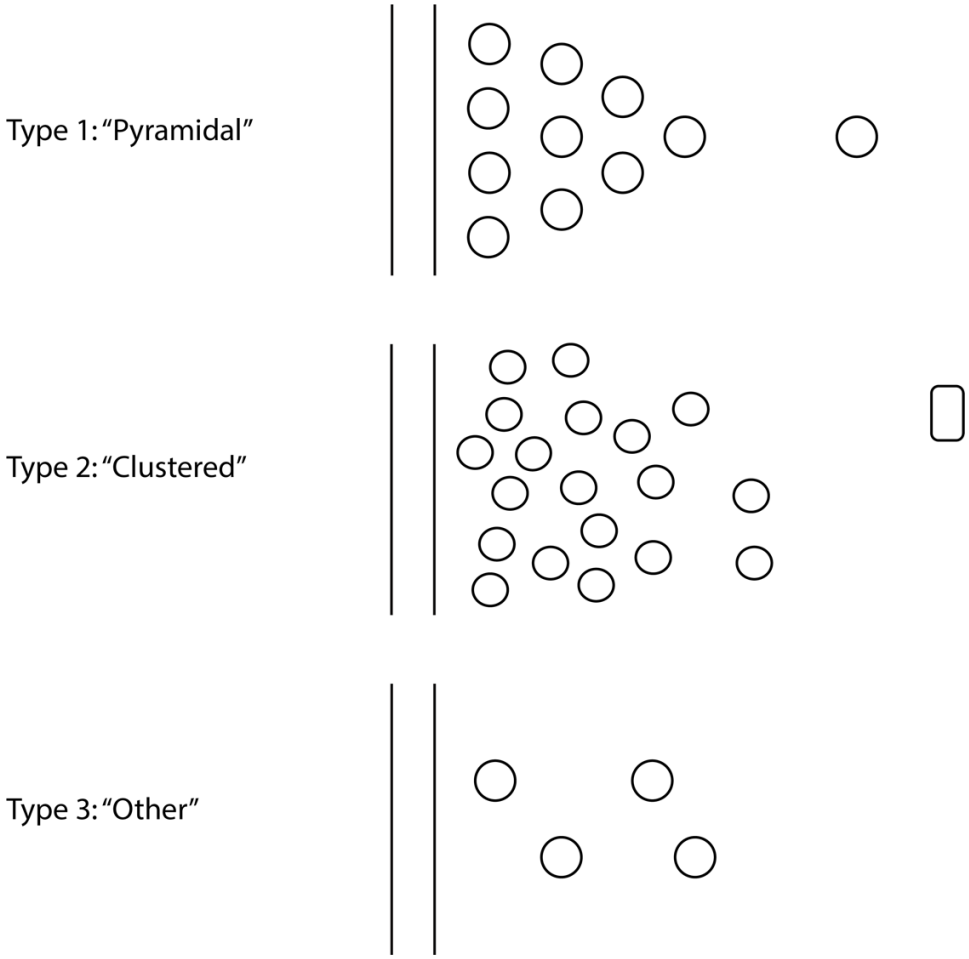


Figure 3: A schematic typology of marble lanes (Drawing: S. Courts).

Type 1: "Pyramidal" marble lanes

This type is identifiable by the pyramidal arrangement of the pockets. These lanes may occur with or without a 'start' line and in some cases the pockets may trail beyond the main grouping which forms the pyramid. Additional pockets may be located beyond or within the 'start' line(s). Examples of this type are attested exclusively at Dougga, Tunisia, at present

(cat. nos. 1-3), perhaps suggesting that they belong to a local or regional tradition of play in this part of North Africa.

Type 2: "Clustered" marble lanes

This type features a dense cluster of pockets near one end of the playing surface with a reduced number of pockets trailing towards the opposite end the lane. The dense cluster of pockets may be arranged at random, or in neat lines. Often there is a first row of four or five pockets, followed by a second row in a staggered order. Additionally, these lanes often feature a "starting line" and sometimes a 'special' pocket which differs in size or shape from the other pockets (e.g. it is often rectangular/square). Such special pockets may be located well beyond the main cluster itself or in other cases (and less frequently), they may be before or between the 'start' lines (e.g. cat. nos. 7, 35, 40). Clustered marble lanes have been recorded at Athens (cat. nos, 4-6), Cherchell (cat. nos. 7, 9), Dougga (cat. no. 8), Leptis Magna (cat. no. 13), *Thuburbo Maius* (cat. no. 14). Ephesus (cat. nos. 15- 18), Italica (cat. nos. 19-22), Ostia (cat. no. 23-26), Philippi (cat. no. 27), Timgad (cat. nos. 10-12), Rome (cat. nos. 29-36, 38-42), Fogliano (cat no. 37) and one in an unknown location (cat no. 28).

Type 3: "Other" types

Other possible playing surface layouts which do not conform to the two main layouts we have already discussed can sometimes be glimpsed, for example at Dougga (cat. no. 43), Italica (cat. no. 44), Ostia (cat. no. 45), Rome (cat. nos. 46-48, 44), Athens (cat. no. 49), Ephesus (cat. no. 50), Cherchell (cat. nos. 51, 56-57) and Timgad (cat. nos. 52-55). This may be because these playing surfaces represent a partial lane which was never finished, reuse of a fragmentary lane, or simply the fact that these were used for other games with different rules and requirements. Some of these lanes may in fact belong to the type-2 "clustered" marble lane, but have fewer pockets (e.g. at Athens, cat. no. 39).

One game or many? A discussion

The challenges of moving from typological analysis of the physical evidence to reconstruction games are considerable. However, recent work has emphasised the value of assembling the material evidence, as we have done above, and interrogating it for the information this provides about how

playing surfaces may have been used for play in the past.[60] Particularly important here is the theoretical concept of affordances, which in material culture studies has come to denote the characteristics of an object which allow for them to be used in a certain way, conditioning the use that people can make of them.[61] In other words, certain playing surface designs can facilitate certain types of play by indicating places which a piece can occupy, or the goals into which an object like nuts or a ball must be thrown. Archaeological research emphasizes that these affordances permit overlapping or contrasting uses for the same object.[62] As a result, we may not be able to reach definitive conclusions about how a playing surface was used in the past, but we may nevertheless make some salient observations. Additionally, research by Candace Richards in the theatre of Paphos, Cyprus has emphasised how considering the physical setting in which a game was found, and particularly its relationship to barriers like walls, can indicate the places where players could sit, stand, or kneel during a game.[63] These contextual insights can provide important clues about how gaming surfaces may have been used in the past. In what follows, we discuss the implications of the affordances offered by the various kinds of marble lanes discussed above.

The limited existing scholarship on marbles lanes has sometimes suggested that there is a degree standardisation across this kind of playing surface.[64] In some regards, this view still holds true — some aspects of marble lanes certainly *do* appear to be standardised. Most notably, almost all of the examples recorded in this study are rectangular, feature a pair of parallel lines, and have a number of circular pockets. However, the typological outline presented above demonstrates that there is a certain degree of variation across the types of marble run included in our catalogue, and this variation may indicate that the lanes were not *entirely* standardised. Three specific features merit further consideration here, namely:

(i) The pairs of parallel "starting lines" which appear on many marble lanes;

[60] Schädler, 2019b; Kurke, 1999, 252.
[61] Norman, 2002; Risatti, 2007, 25-8.
[62] Hodder, 2012, 50.
[63] Richards, 2021.
[64] Schädler, 2019a, 66.

(ii) Variations in the overall layout of the pockets;
(iii) The variable accessibility of the lanes themselves in their original contexts.

In examining these aspects of marble lanes, we do not seek to suggest that any or all of the considerations we discuss here are relevant for every example under discussion, given that they are so different among themselves. Our aim is therefore not to reconstruct the roles in their totality, but to examine some ways that the differing nature of the lanes can inform us about whether are looking at one game or many. We shall now talk about each of these considerations in greater detail.

"Starting lines"

Parallel "starting lines" are not present on all marble lanes and on lanes where they *are* present they often delineate large zones, thereby offering considerably differing play experiences. Additionally, some of these "starting lines" contain pockets, which as we saw above some scholars suggest may have served as obstacles. The absence of such carved "starting lines" on some marble runs is admittedly not necessarily indicative of their absence in antiquity. Some such lines may have been weathered away, especially if carved only shallowly, making them difficult to see, while other lines could have been applied in paint or charcoal.[65] It is also worth commenting on the fact that the distance between these sets of parallel lines is considerable. Unlike in some games, especially modern cue sports, where players are allowed to choose a "starting point" along a line during some predefined phases of the game, if the lines on marble lanes delineated the "starting zone", this would have a material impact on how much space a player had to manoeuvre relative to the various arrangements of pockets before taking a shot. Additionally, in the marble lane on the steps of the Temple of Venus and Rome, there are grooves which arise from wear it is also possible that they were intentionally made to direct or channel the path of marbles as they were rolled (cat. no. 29). This would mean that although the broad rules of the game were comparable in the abstract, there may have been considerable differences in what it was like to play on them, as

[65] For this suggestion in relation to whole gaming boards, rather than part of one, see Lavan, 2021, 241. A charcoal board may have been identified at the Villa of Hadrian at Tivoli, mentioned by Bruno, Carboni and Manderscheid, 2011, 518.

certain arrangements of pockets and/or lines, grooves and other elements of lane design would encourage players to favour some areas of a "starting zone" over others.

The position of pockets within these "starting lines" is more problematic. The clearest illustration of this is recorded at Timgad (cat no. 23), where one pocket was enclosed by these parallel lines. Similarly, at Cherchell (cat no. 8), these parallel lines contain no fewer than four pockets. If the game started from within these parts of the playing surface, why place pockets within them? Doing so would mean that the places from which players could start their throw/roll/play would be limited. This impediment could conceivably reflect a desire to somehow encumber the plays, but it would have meant that the possible ways to reach the final pocket(s) would have been even more circumscribed than on the examples without pockets in the rectangles. The somehow privileged status of pockets in their relation to these parallel lines is also hinted at by a marble lane in the Casa dei Pesci in Ostia (cat. no. 45), where one larger circular pocket appears to be separated from the others by a pair of parallel lines. We might instead hypothesise that in at least some instances, the pockets enclosed within these parallel lines are not part of the starting line of the game, but in fact represent a privileged goal. For example, it is possible that landing a marble within these pockets may have resulted in players scoring a greater number of points than if they managed to land a marble in other holes.

Pocket configurations

The differing layouts of pockets would have considerably changed how games were played. The catalogue presented in this article show that there are considerable variations in the layouts of pockets on marble lanes. There is no need to exhaustively discuss the layout of every individual lane here, and instead we can focus on some key characteristics. First, while the ruleset as originally suggested by Luigi Bruzza (outlined above) emphasises the importance of the pocket(s) farthest from the 'starting lane' as being the objective which players must aim for, these pockets appear to be absent from many of the lanes contained in this catalogue. In fact, they are attested on a lane in an unknown location (cat. no. 28), possibly Cherchell (cat. no. 7), Ephesus (cat. nos. 16-17), possibly Ostia (cat. no. 26), and Rome (cat. nos. 29-32), and perhaps a few other cases, but this represents a minority of the playing surfaces discussed here. In other words, the absence of a clear 'goal'

in many instances suggests that this cannot have been the only objective when playing on many of the marble lanes presented here. An alternative interpretation is that on some or all these lanes, given pockets were worth more points, based on the difficulty with which they could be reached, like in modern games such as skee-ball, although this is not a close parallel. Alternatively, players were required to land their marbles into holes in a predefined order, perhaps starting with the easiest and ending with the most difficult; under this scenario, the first player to get one of their marbles into every one of the pockets would be the winner. Another possibility is to suggest that a player would capture opponents' marbles once they managed to roll their own marble into a pocket already occupied by one or more of another player's or players' marble(s).

Second, the number of pockets varies substantially. If the sole aim of the game was to target a specific pocket, and this pocket remained fixed throughout the game, then some marble lanes would have meant for relatively easy, simple, and repetitive games. This is perhaps best indicated by the example from the Casa dei Pesci in Ostia (cat. no. 45), which only features four pockets. It may be that this lane was never completed, but this hypothesis cannot be proven, and we cannot exclude that this lane was, in fact, complete. In this instance, the existing pockets would have presented very little obstacle to a player aiming to reach the largest pocket. Instead, some other rules must have been in play, though we have not been able to reconstruct any of them in any detail here.

Third, the differing arrangements of pockets on marble lanes would have influenced how they were played. The very creation of a typology, with at least two, and probably three, distinct types, underlines the fact that there is considerable variation between them. Our Type 1 (pyramidal lanes) are generally neatly arranged, and this could suggest a very clear plan at the point at which they were carved, linked to well defined set of rules and objectives for players. This type of playing surface may conceivably have been used for a throwing or rolling game where each pocket, or each pocket in a specific row, held a certain pre-determined value. The winner may have been the player who racked up the most points and/or got their marble in the most distant pocket. The same may be true of some Type 2 (clustered lanes). Some of our Type 2 (clustered lanes) may have been used for a similar style of play as the pyramidal lanes, but other examples within this type could have been used for push games in which players had to throw or roll

marbles so as to push other marbles into the pockets, like in modern Ringer or Ring Taw.

Others, including some of our Type 2 (clustered lanes) are considerably less clearly organised. This may be because the irregular arrangement of pockets added a degree of suspense or challenge to play, but it could also indicate that the aim of the game was different. It is also not impossible that other lanes falling into our Type 3 (other lanes) were used for (a) different game(s), though they could also have just been poorly preserved or incomplete or remained unfinished.

These interpretations are almost entirely speculative, but they have been presented to underline the fact that in view of our shortage of textual evidence and the diversity of marble lane configurations we cannot assume the similarity of some components (a rectangular shape, a parallel double line, and a variable number of circular pockets) means that the games played on these lanes were all the same.

The position of marble lanes

The position of marble lanes may hint at how games were played on them. Most of the examples presented here are placed in open areas, where they can be accessed from all sides. An emblematic example comes from Dougga (cat. no. 2), which is located in the middle of the street the Arch of Septimius Severus and the Baths of the Cyclopes. This lane stands in the centre of the street where players and spectators could clearly see — and throw — from potentially any side. The depictions on sarcophagi discussed above demonstrate that in some instances, game participants in rolling games (whether or not these were played on marble lanes) could stand to the side of the inclined launching board, as we as behind it. Standing alongside such an inclined board would have been relatively easy for these unenclosed lanes.

Other marble lanes, especially those located on steps, which are seemingly out in the open are, in reality, harder to access. For example, a marble lane in the Square of the Winds at Dougga (cat. no. 3) is located on the lower step of a flight of stairs. Similar examples on steps appear for example in Ostia on the steps of Temple of Mars and Venus (cat. no. 26), in Rome, for example, on the steps of the Temple of Venus and Rome (cat. nos. 30-31) and the Basilica Julia (cat. nos. 32-33, 47), or in the Octagon at Ephesus (cat. nos. 16-17). Players standing on lower steps could easily access

these marble lanes, as could those standing on lower stairs, but those on upper levels may have had to stoop to throw or roll their ball, perhaps putting them at a disadvantage. This arrangement might also have facilitated a more relaxed game in which players could sit on the steps while they waited for their turn, allowing for a longer period of gaming — could this mean that marble lanes on steps were intended for use in games played by a larger number of players, where there would be more waiting between turns? Or for games where larger numbers of spectators were envisaged?

Finally, several marble lanes are located in intercolumniations or thresholds. This is attested in both private contexts, as in the Casa dei Pesci at Ostia (cat. nos. 25, 45) and probably also in public contexts, for example in the Basilica Julia at Rome (cat. nos. 32-33) as well as elsewhere. These lanes may have been placed so as to take advantage of shade during the hottest parts of the day, but this positioning could have also presented implications for gameplay. In both cases the short ends of the marble lanes face against the columns and/or wall which enclose them. This may suggest that players were in these instances *constrained* to play from the long sides. It is unclear what difference this would have made in terms of game mechanics, but these spatial distinctions would have created differing affordances for players. As a result, it may be hypothesised that they substantially influenced the ways in which it was possible to throw or roll marbles or other rounded objects. The proximity to these obstacles may even indicate that these lanes were used for a variant game, wherein players were required to bounce a marble off either the obstacles at the ends of the playing field, or perhaps other marbles, like we see in some modern marble games played today.

Conclusions: a family of games

Marble lanes are one of the less well-understood playing surfaces of the Roman world and it is very likely that we shall never fully understand the rules of the games which were played on them. Gathering together a wider range of marble lanes from across the Mediterranean demonstrates the heterogeneity of these kinds of playing surfaces, which present at least three different loosely groupable layouts. These layouts, and the considerable variation within each of them, would have had a major influence on the experience of games that could be played on them. As a result, it may be more appropriate to talk about marble lanes in terms of a family of related

games rather than trying to reconstruct the individual specifics of play. A parallel may be seen here, for example, in discourses around mancala games, which acknowledge that rules vary from region to region or community to community.[66] Similarly, it is not uncommon today for each individual family to have its own special rules which offer a variation on modern, mass-manufactured board games. It has become increasingly common for archaeologists to talk about how the material culture of the ancient world embodies the *koine* or shared cultural horizons of lands under Rome rule.[67] Yet it is important to recognise that within these wider shared cultural horizons, games were both perhaps 'internationally' recognisable, while also holding the potential to be intensely local in nature. For example, our Type 1 marble lanes as yet appear to be located solely in North Africa, as noted above, perhaps reflecting a specific game which developed and was played in this region. The variation between different types of marble lanes, and the difficulties we face in connecting them to concrete rules, should therefore encourage us to think about how the experience of play in the past was far from uniform.

Appendix: a catalogue of marble lanes

The catalogue presented here is intended to enlarge the available corpus of marble lanes from across the ancient world. As noted above, this work is ongoing, and some of the locations as well as the dates of the lanes presented here remains to be clarified in future work.

Type 1: pyramidal marble lanes

1. Unknown domestic context, Dougga

Pyramidal marble lane with ten evenly sized circular pockets and a double "starting line" at the pyramid's base. The arrangement of the pockets is somewhat haphazard, with the upper rows failing to centre over the foundational row of pockets (References: Schädler, 2013, 55).

[66] De Voogt, 1997

[67] Versluys, 2014.

2. Street between the Baths of the Cyclopes and the Arch of Septimius Severus. Dougga

Pyramidal marble lane with nine evenly sized circular pockets and a double "starting line" at the pyramid's base. All eight pockets are incorporated into the pyramid, with the apex pocket being smaller and shallower than the other pockets (Unpublished. Photograph Sophie Hay).

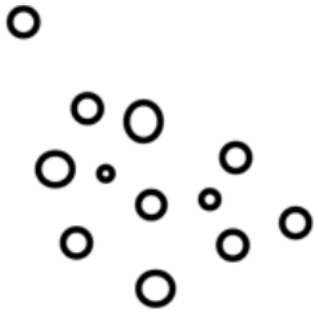
3. Place de la Rose des Vents, on the first step in front of the tribunal, Dougga

Pyramidal marble lane with eight evenly sized circular pockets. Six pockets make up the pyramid, and the remaining two trail onward from the pyramid's apex (Unpublished. Photograph Sophie Hay).

Type 2: clustered marble lanes

4. Stylobate, at the fourth intercolumn space, from the SE corner Hadrian's, Library, Athens

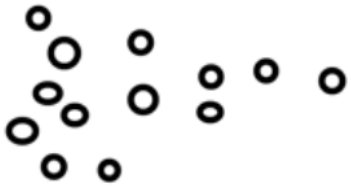
A clustered marble lane with twelve pockets. eleven pockets are clustered tightly together in a seemingly random manner. One remaining



pocket trails away towards the opposite end of the playing surface (References; Carè, 2021, 236-7, figure 7b).

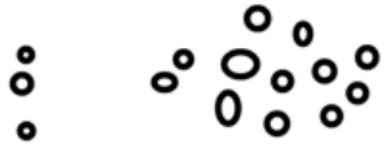
5. First step of the propylon, Hadrian's Library; Athens

A clustered marble lane with thirteen pockets. Nine pockets are clustered tightly together in a seemingly random manner. The remaining four pocket trail away towards the opposite end of the playing surface (References; Carè, 2021, 237-8, figure 7d).



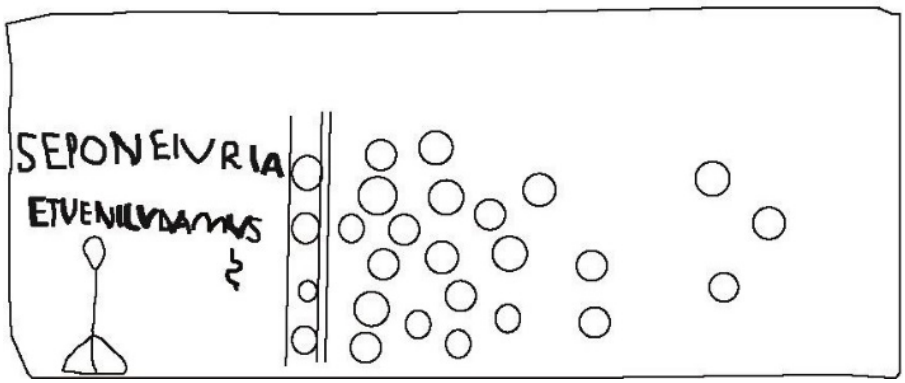
6. Second steps of the propylon, Athens

A clustered marble lane with twelve pockets. nine pockets are clustered tightly together in a seemingly random manner. The remaining three pockets are arranged in a line at the opposite end of the playing surface (References: Carè, 2021, 237-8, figure 7e).



7. Forum, Cherchell

A clustered lane with twenty-six preserved circular pockets, a triple "starting line", and an inscription. Four pockets of varying size are arranged linearly between the "starting lines." Seventeen further pockets of varying size and depth are tightly clustered in a seemingly random manner. Two further pockets arranged in a row are spaced away from the cluster starting the trail towards the far end of the playing surface. The final three pockets are in a widely spaced pyramid, orientated towards the far end of the playing surface (References; Akli, 2017, 157; Schädler, 2013, 55; Schädler, 2019a, 66; Waille, 1893).



8. Reused in the southern wall of the Byzantine fortress, Dougga

Clustered marble lane with eleven circular pockets and three rectangular pockets. The circular pockets are tightly clustered and arranged in three rows, with the first and third rows containing four pockets and the second row containing three pockets. The three rectangular pockets are more widely spaced, with one row of two, and the final pocket trailing away towards the opposite end of the playing surface (Unpublished. Photograph Sophie Hay).

9. Capitolium, North Forum, Cherchell

A clustered marble lane with 9 round pockets. Five pockets are tightly clustered and arranged in a linear fashion comprising one row of three pockets and one row of two pockets. A second closely clustered group of three pockets form an inverse pyramid with one row of one pocket and one row of two pockets. A final pocket is arranged at the far end of the playing surface. Not illustrated. (References: Akli 2023, 418-9, figures 3-4, no. 2, 419, figure 4, no. 2; 420, figure 5, no. 2; 433, figure 16, no. A.2.).

10. Forum, North Portico, Timgad

A clustered marble lane with 13 pockets of varying size and depth and a double "starting line." Seven pockets cluster closely together in a seemingly random arrangement, followed by a loose group of six pockets arranged across three lines to form a pyramid, with three pockets on the bottom row, two on the middle row and a single pocket on the top row trailing away. Not illustrated. (References: Akli 2023, 425, figure 10, A; 426, figure 11, A; 432, figure 15, A.1).

11. Forum, South Portico, Timgad

A clustered marble lane with 11 round pockets, one rectangular pocket, and a double "starting line." The 11 round pockets cluster closely together in a seemingly random arrangement, A final pocket, comprising a horizontally aligned rectangular depression, is arranged at the far end of the playing surface. Not illustrated. (References: Akli 2023, 425, figure 10, B; 426, figure 11, B).

12. Forum, South-west entrance, Timgad

A clustered marble lane with seven round pockets and one rectilinear pocket, a double "starting line." Seven round pockets are tightly clustered and arranged in a loosely linear fashion comprising one row of one pocket, one row of four pockets and one row of three pockets. A final pocket, comprising a horizontally aligned rectangular depression, is arranged at the far end of the playing surface. Not illustrated. (References: Akli 2023, 425, figure 10, C; 426, figure 11, C, 432, figure 15, B.1).

13. Unknown location, Leptis Magna

A clustered marble lane with seven preserved pockets and a double "starting line." Six pockets cluster closely together in a seemingly random manner, while the seventh trails towards the opposite end of the playing surface. Not illustrated. (Bianchi Bandinelli *et al.*, 1964, tav. 67).

14. Unspecified location, Thuburbo Maius

A clustered marble lane with ten preserved circular pockets and one rectilinear pocket. All eleven pockets cluster closely together in five rows. The first row contains three circular pockets, the second row contains two circular pockets, the third row contains two circular pockets with the single rectangular pocket between them, the fourth row contains two circular pocket and the fifth row contains only a single pocket (Unpublished. Photograph U. Schädler).

15. Androcles Monument, Ephesus

A clustered marble lane gaming board with 13 round pockets and one rectilinear pocket preserved. 11 round pockets are tightly clustered and arranged in a linear fashion comprising three rows of three pockets and one row of two pockets. A further row of two pockets is spaced slightly further away from the large cluster. A final pocket, comprising a vertically aligned rectangular depression, is arranged at the far end of the playing surface (Unpublished. Photograph U. Schädler).

16. Octagon, Ephesus

A clustered marble lane with 14 pockets of varying size and depth. 11 pockets cluster closely together in a seemingly random arrangement, followed by a rectangular pocket and two more circular pockets behind this last (Unpublished. Photograph U. Schädler)

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17. Octagon, Ephesus

A clustered marble lane with 14 preserved circular pockets varying in size and depth. 13 of these pockets cluster relatively closely together and are in a seemingly random arrangement. A final large circular pocket is located a slight distance from the primary cluster (Unpublished. Photograph U. Schädler)

18. Ayasoluk, Byzantine fortification, near the church of St John. Ephesus

A partially preserved clustered marble lane with seven tightly clustered pockets of varying size and depth (Unpublished. Photograph U. Schädler)

19. Proedria of the Theatre, Italica

A clustered-type marble lane with 10 pockets arranged in four/five staggered rows, and a double "starting line." Not illustrated. References*:* Bendala Galán, 1973, 267, lám. XIX, figure 6; Rodríguez Gutiérrez 2003, 162-163, figure 7.

20. "En las calles de excavación," Italica

A clustered marble lane seven pockets in an unspecified arrangement. Not illustrated. (Bendala Galán, 1973, 267).

21. Junction of roads on north and east sides of the insula containing the Birth of Venus mosaic, Italica

A clustered marble lane with 18 pockets and a double parallel"starting line." 16 pockets are clustered tightly together and arranged in three irregular rows. A further two pockets are arranged in a parallel linesome distance from the tight cluster. Not illustrated (Bendala Galán, 1973,267; lám. XX, figure 10).

22. "En el sector últimamente descubierto", Italica

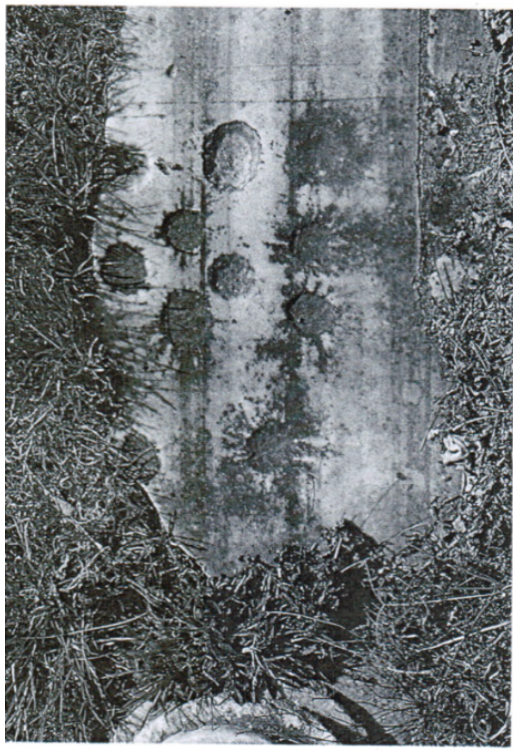
A clustered marble lane with 15 pockets staggered over three rows and a double parallel "starting line." Not illustrated (Bendala Galán, 1973, 267, lám. XVIII, figure 4).

23. Threshold between Porticus 13 and Room 15, Domus della Fortuna Annonaria, Ostia

A clustered marble lane with 11 preserved pockets arranged in three rows. The first row, which curves gently, contains five pockets, the second row which also curves contain four pockets and the final row, which is off-centre contains two wells (Schädler, 1994, 55).

24. "Christian Basilica", Domus dei Tigriniani (III, I, 4), Ostia

Partially preserved clustered marble lane with a cluster of nine preserved pockets and a double "starting line". The pockets vary in size and depth (Schädler, 1994, 54-5).



25. Casa dei Pesci, Ostia

A poorly preserved clustered marble lane with at least eight, and possibly more, poorly preserved pockets. Eight of the preserved pockets are arranged in two curving rows of three/four and a possible ninth pocket stands alone, trailing towards the opposite end of the playing surface (Unpublished. Photo U. Schädler).

26. Steps, Temple of Mars and Venus, Ostia

A partially preserved clustered marble lane with nine preserved pockets and a double "starting line" (Dasen, 2020, 311-312, figure 6).

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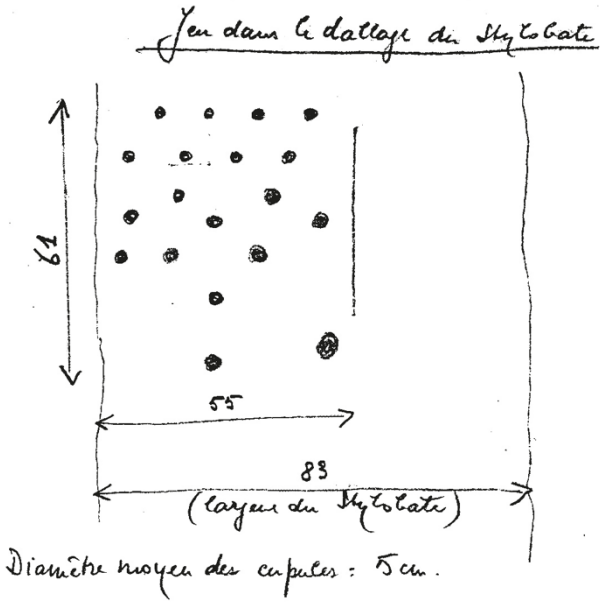
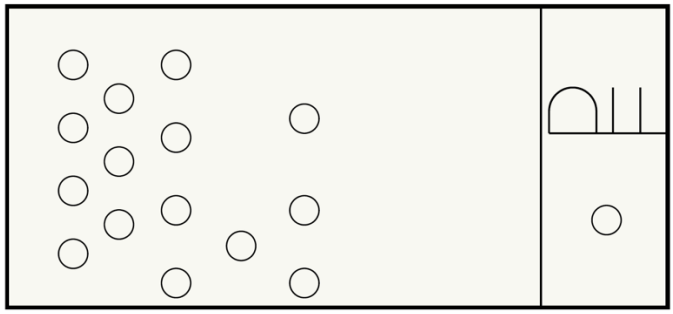
27. Forum, Philippi

A clustered marble lane with 19 pockets. 16 pockets are clustered tightly together and arranged in five irregular rows. A further three pockets trail away towards the opposite end of the playing surface. Not illustrated. (Sève and Weber, 2018, 784-787M 11).



28. Location unknown

A clustered marble lane with 15 circular pockets, a delineating line that is typologically distinct from the "starting lines," and an inscription. 11 pockets are tightly clustered in a linear arrangement with the first and second rows containing four pockets and the centermost row featuring three pockets. The third of these tightly clustered rows has more space between the four pockets than the first row does. Four further pockets aligned in one row of one and then one row of three are widely spaced. The final pocket is



located behind an incised line and is slightly off centre. An inscribed monogram reading *PEL* (*P(alma) E(t) L(aurus)*) is arranged beside this pocket, potentially indicating that this pocket is the most valuable in terms of points (Bruzza, 1877, no. 24; Schädler, 2013, 55; Schädler, 1994, 55; Trifilò, 2011, 315).

29. Steps, Temple of Venus and Rome, Rome

A clustered marble lane with twenty preserved circular pockets and one rectilinear pocket. 14 pockets of varying size and depth cluster closely together, though they are not arranged in any clear rows. Six further pockets, which likewise vary in size and depth scattered in a trail towards the opposite end of the playing surface. The final pocket, which is rectilinear, is slightly removed from the rest and is centred within the playing surface (Schädler, 2013, 54; Schädler, 2019a, 67, figure 1; Schädler, 1994, 56).

30. Temple of Venus and Rome, Rome

A partially preserved clustered marble lane with 12 preserved circular pockets and one rectilinear(?) pocket. 11 circular pockets of varying size and depth cluster closely together and are arranged in four clear rows. The single rectilinear pocket, which may in fact be two circular pockets that have merged together is situated in the centre of third row. One final circular pocket is slightly removed from the rest and is somewhat off-centre from the remainder of the pockets (Unpublished. Photograph U. Schädler).

31. Temple of Venus and Rome, Rome

A partially preserved clustered marble lane with at least nine preserved circular pockets and a possible double "starting line". Seven circular pockets of varying size and depth cluster relatively close together and begin to trail away from the double "starting line." No clear arrangement is apparent. Two further circular pockets are enclosed within the possible double starting line (Unpublished. Photograph U. Schädler).

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32. Western end, Basilica Julia, Rome

A clustered marble lane with 16 preserved pockets. 10 pockets of varying size and depth are arranged over three rows and cluster closely together. Five further pockets, which vary in size, are widely and randomly arranged in a trail towards the opposite end of the playing surface. The final pocket is far removed from the rest and is centred within the playing surface. This board is located on a threshold (Schädler, 1994, 54, 57; Trifilò, 2011, 315. Photograph U. Schädler).

33. Basilica Julia, Rome

A poorly preserved clustered marble lane with 19 preserved pockets wide, shallow single "starting line". 15 of the pockets cluster closely together

in an irregular arrangement and vary in size and depth. The remaining four pockets trail away from the dense cluster of pockets and towards the opposite end of the playing surface (Unpublished. Photograph U. Schädler).

34. Baths of Caracalla, Rome

A poorly preserved clustered marble lane with 18 preserved pockets(?) and a triple "starting line." 14 of the preserved pockets cluster in a linear fashion towards the triple starting line, with two pockets bisected by the uppermost line of the triple "starting line". Two further pockets are located well behind the triple "starting line" and the final two pockets trail away from the main cluster and towards the opposite end of the playing surface (Schädler, 2019a, 66-67, figure 2).

35. Corner of the Via Nazionale and Via dei Fornari, Rome

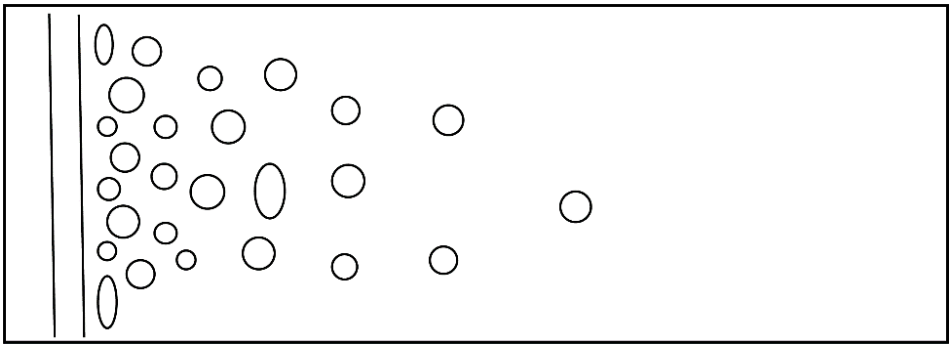
A partially preserved clustered marble lane with 19 preserved pockets and a double "starting line." 18 of the preserved pockets cluster in an apparently random arrangement. One further pockets is located behind the double "starting line." Not illustrated. (Gatti, Notizie degli scavi 1904, p. 157, figure 15).

36. Corner of the Via Nazionale and Via dei Fornari, Rome

A partially preserved clustered marble lane with 16 preserved circular pockets and a single rectangular pocket. 12 of the preserved pockets cluster in an apparently random arrangement. This is followed by a line of three widely spaced circular pockets. The single, horizontally orientated rectangular pocket is crowned by one circular pocket, and has a final circular pocket centered behind it. This latter half of the playing field is separated from the more clustered side by a monogram reading PEL (*P(alma) E(t) L(aurus)*). Not illustrated. (Gatti, Notizie degli scavi 1904, p. 157, figure 15).

37. Grave of Kamenios, San Donato, Fogliano

A clustered marble lane measuring 1.61 x 0.60 x 0.05m reused as the base of the grave which is dated to AD 385. The playing surface comprises 23 circular pockets, three rectilinear pockets, and a double "starting line." 17 circular pockets of varying size and the three rectilinear pockets of variable size cluster closely together in a broadly linear fashion. The remaining six circular pockets trail away towards the opposite end of the playing surface in a widely-spaced pyramidal pattern (Elter 1884, 71; Ebanista, 2017, 55).



38. Near the modern entrance, Forum Romanum, Rome

A partially and poorly preserved clustered marble lane with 17 preserved pockets and a double "starting line." 16 of the preserved pockets cluster in a broadly linear arrangement in close proximity to the double "starting line." The first four, which are closest to the "starting line" are large and shallow, while the remainder vary in size and depth. One final large, shallow pocket is located at the far end of the playing surface (Unpublished. Photograph U. Schädler).

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39. Near the modern entrance, Forum Romanum, Rome

A clustered marble lane with 14(?) preserved pockets and a possible double "starting line." Nine pockets of varying size and depth cluster closely together in close proximity to the "starting line". Five further pockets, which vary in size, are spaced apart and a trail towards the opposite end of the playing surface along two diagonal lines (Unpublished. Photograph U. Schädler).

40. *In front of the N-E corner of the Basilica Iulia, Forum Romanum, Rome*

A partially preserved clustered marble lane with 13(?) preserved pockets and a double "starting line." 12 pockets of varying size and depth cluster closely together in close proximity to the "starting line" and are arranged in a broadly linear fashion. One pocket is situated between the double "starting lines" (Unpublished. Photograph U. Schädler).

41. South colonnade, Forum of Caesar, Rome

An extremely poorly preserved clustered marble lane with 14(?) preserved pockets. 13 pockets of varying size and depth cluster closely together. One pocket is centred at the opposite end of the playing surface (Unpublished. Photograph U. Schädler).

42. Basilica Aemilia, Rome

A poorly preserved clustered marble lane with 13(?) preserved pockets and a double "starting line". 13 pockets of varying size and depth cluster closely together and are arranged in a linear fashion. The first row consists of five pockets, while the second and third rows, which both trail away diagonally consist of four pockets each. (References: Freyburger 2016, 144, ab. 10).

Type 3: Other types?

43. Unknown location, Dougga

A possible clustered marble lane with six, possibly seven preserved pockets and a double "starting line." The pockets which vary in size and depth are arranged in two haphazard lines. (Unpublished. Photograph Sophie Hay).

44. Junction of roads on north and east sides of the block containing the Birth of Venus mosaic, Italica

A possible clustered type marble lane with eight pockets (arranged in one row of five and one of two) and a double parallel "starting"line." The pockets are arranged in two rows, the first row has five pockets and the

second row has three pockets. Not illustrated. (References: Bendala Galán, 1973, 267, lám. XVII, figure 3).

45. Casa dei Pesci, Ostia

A marble run with four or five preserved pockets which vary in size and depth. The largest, deepest pocket is separated from the remaining four by a double "starting line" (Unpublished. Photograph U. Schädler).

46. Southeast exedra steps, Baths of Trajan, Rome

A partially preserved marble run with at least nine surviving pockets and a double parallel "starting line". Five pockets are tightly clustered and arranged in two lines. A further four pockets are more widely dispersed in two diagonal lines which trail towards the opposite end of the playing surface. Not illustrated. (Bruno, Carboni and Manderscheid, 2011, 519-520, figure 4).

47. Eastern steps, Basilica Julia, Rome

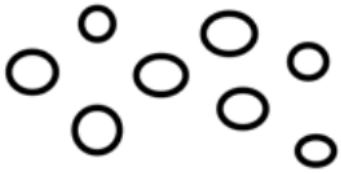
A possible marble lane with nine(?) preserved pockets and a possible "starting line". All nine pockets cluster closely together in three rows. The first and second row contain four pockets each, while the third row contains one possible pocket (Unpublished. Photograph U. Schädler).

48. Temple of Antoninus and Faustina, Rome

A partially and poorly preserved possible marble lane with at least seven preserved circular pockets arranged over three rows (Unpublished. Photograph U. Schädler).

49. N side of stereobate, Temple of Hadrian, Athens

A possible clustered type marble with eight pockets. The pockets are arranged in a seemingly random manner (References: Carè, 2021, 236-7, figure 7c).



50. Library of Celsus (Uppermost step in front of North entrance), Ephesus

A partial marble lane with three pockets and a double "starting line". (Unpublished. Photograph U. Schädler).

51. Capitolium, North Forum, Cherchell

A possible clustered-type marble lane with six round pockets. Three pockets are tightly clustered to form an inverse pyramid with one row of one pocket and one row of two pockets. A single pocket is isolated in the middle.

On the far side of the playing surface two further pockets are arranged in a linear fashion. Not illustrated. (References: Akli 2023, 418-9, figures 3-4, no. 4; 420, figure 5, no. 4. 433, figure 16, no. A.4.).

52. Library, Timgad

A possible marble lane with five round pockets. There are two rows of two pockets separated by a single pocket which is centred between the two rows. Not illustrated. (References: Akli 2023, 425, figure 10, G; 428-9, figure 13, no. 7.).

53. Library, Timgad

A possible marble lane with five round pockets. There are two rows of two pockets separated by a single pocket which is centred between the two rows. Not illustrated. (References: Akli 2023, 425, figure 10, G; 428-9, figure 13, no. 8.).

54. West Portico of the Forum, Timgad

A possible marble lane with five tightly clustered round pockets arranged over two rows. One row has two pockets, and one row has three pockets. Not illustrated. (References: Akli 2023, 425, figure 10, D; 426, figure 11, D).

55. Decumanus Portico, Timgad

A possible marble lane with seven loosely clustered pockets. The pockets are arranged in a seemingly random manner. Not illustrated. (References: Akli 2023, 425, figure 10, E; 427, figure 12, E.).

56. Curia, North Forum, Cherchell

A possible marble lane with five loosely clustered round pockets arranged over two rows. One row has two pockets, and one row has three pockets. (References: Akli 2023, 418-9, figures 3-4, no. 6; 421, figure 6, no. 6; 433, figure 16, no. B.6).

57. Pavement in south of North Forum, Cherchell

A possible marble lane with three circular pockets and one rectangular pocket arranged to form a square. Not illustrated. (References: Akli 2023, 418-9, figures 3-4, no. 9; 422, figure 8, no. 9; 434, figure 16, no. D.9).

Abbreviations

CIL = *Corpus Inscriptionum Latinarum*, I-XVII, Berlin: De Gruyter, 1893-1986.

ILS = Dessau, Hermann. *Inscriptiones Latinae Selectae,* 1892-1916, 3 vols. Berlin: Apud Weidmannos.

OLD = Glare, P. G. W. 2012. *Oxford Latin Dictionary*. 2nd ed. Oxford: Oxford University Press.

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Varro, *apud Nonium* = ed. Wallace Martin Lindsay 'De citationibus apud Nonium Marcellum', *Philologus* 64, 438-464.

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