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Looking through the glass

Discussing the so-called glass “counters” from Pompeii

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This paper deals with a peculiar class of objects widely documented in Pompeii, namely the glass hemispheres. They are small glass objects, with a plano-convex section, whose function is still debated. Generally, these objects are recognised as counters moved on the *tabulae lusoriae*, although other functions have been proposed. This research aims to show that the only valid parameter to certify their ludic value is the direct association with other items provided with a primary ludic function.

Pompeii, game, play, ludic culture, gaming set

Questo lavoro si focalizza sull’analisi di una peculiare classe di materiali largamente attestati a Pompei, ovvero le semisfere in vetro. Si tratta di piccoli oggetti in vetro, a sezione piano-convessa, la cui funzione è dibattuta. Generalmente in questi oggetti sono riconosciute le pedine mosse sulle *tabulae lusoriae*, sebbene siano stati proposti anche altri impieghi. La presente ricerca si propone di dimostrare come l’unico parametro efficace per certificarne l’effettivo impiego nel gioco sia la loro associazione con altri oggetti, dotati di una funzione ludica primaria.

Pompei, gioco, cultura ludica, set da gioco

*Insidiosorum si ludis bella latronum,
gemmeus iste tibi miles et hostis erit*

Mart., 14, 18

The present work was developed within the frame of the ERC Locus Ludi project¹. It is, therefore, part of a wider investigation regarding Pompeian game-related material culture. Its goal is to reconstruct and map out the diffusion of game practices

in the Vesuvian city², thereby understanding their cultural value and significance³.

1. This research is part of the project ERC Advanced, *Locus Ludi*. The Cultural Fabric of Play and Games in Classical Antiquity (2017-2022) (European Union’s Horizon 2020 research and innovation programme, grant agreement No 741520) based at the university of Fribourg CH. On the theoretical frame of the project see Dasen 2018; Dasen 2019a; Dasen 2019b; Schädler 2019a; Dasen – Schädler 2019; Dasen – Vespa 2020; Bouvier – Dasen 2020; Dasen – Vespa 2021; Dasen – Haziza 2021; Carè – Dasen – Schädler 2022. For an overview of the project see the website: <https://locusludi.ch/> In the framework of the same project the Author has focalized his attention on specific aspects of the Pompeian ludic culture (see Pace 2020) and on particular classes of gaming objects (such as dice-shakers, see Anecchino 1977; Allison 2004, p. 58-59; Pace 2022).

2. This research in Pompeii research has usually focused on the relationship between games and places such as the *cauponae*, albeit these were certainly not the only places where recreational activities were carried out; on this topic see Wallace-Hadrill 1995, p. 43-54; Laurence 2007, p. 92-101; Newsome 2011, p. 4-5; Trifilò 2011, p. 325-330; Cool 2016a, p. 169. On the Pompeian “recreational” structures see Ellis 2004; DeFelice 2007; Monteix 2007; Monteix 2010, p. 113-132; Grossi 2011; Giacobello 2015a, p. 37-40; Ruiz de Arbuló - Gris 2017; Grossi 2017; Ellis 2018, p. 29-36; Le Guennec 2019, p. 33-121. For collections of ludic objects from habitation contexts beyond Pompeii, see the material from room 18 of the domus of the Nymphaeum of Cremona, see Cecchini – Bianchi – Diani 2015, p. 123-124; also Tassinari 2018, p. 254; Daniaux – Loustaud forthcoming.

3. The author is currently studying game-related materials from Pompeii. A monograph on the topic is in preparation. Cf. Pace forthcoming.

It is indeed a challenging task to properly approach Pompeian material culture, due to the peculiar ways in which it was formed, preserved and, eventually, documented⁴. These difficulties are further exacerbated by the very character of part of the material considered in the present paper, which consists of objects that cannot always be easily associated with the ludic sphere. While the function of some objects such as dice, knucklebones or some kinds of the so-called “*tesserae lusoriae*”⁵ is self-evident⁶, in other cases it eludes our interpretative categories and falls outside a univocal frame; this is because in some cases the same object can be used in different moments for different purposes⁷. The present paper will specifically focus on glass hemispheres, which represent one of the many enigmatic object types within the Pompeian material culture. Glass hemispheres are ubiquitous in all residential areas of the town and are generally interpreted as “counters”; this is not only valid for glass hemispheres found in Pompeii⁸, but also for those in the rest of the Roman world⁹ and beyond¹⁰.

Nevertheless, the exceedingly large Pompeian sample has raised some doubts on the ludic function of these objects, encouraging researchers to undertake other interpretative paths¹¹. Actually, scholars have recently provided several hypotheses

in this regard, ranging from calculating tools¹², to rings bezels¹³, elements of interior decoration¹⁴, and furniture inlays¹⁵.

Generally, the last two hypotheses are considered more likely, although *comparanda* from Pompeii are totally missing¹⁶. In this paper we will focus on the ludic purpose of this kind of object because this aspect represents a pivotal point to give the correct functional meaning to Pompeian material culture, while avoiding reaching conclusions based on potentially distorted evidence.

In the course of its “biography”, an object can become a game, even if only temporarily¹⁷. This is even more so in the case of artefacts such as the glass hemispheres, which, due to their morphology and simplicity of production, can be more markedly polyfunctional. Therefore, it is necessary to find a *ratio* that can allow us to identify the game-related use of such objects despite a strong “background noise”, which may prevent their correct interpretation.

It was, therefore, concluded that, for the scope of the present paper, the only suitable parameter to interpret glass hemispheres as “counters” was their discovery in direct association with other ludic material (with a primary ludic function such as dice, knucklebones and some kinds of the so-called “*tesserae lusoriae*”) forming what we could label a “ludic assemblage”¹⁸; it seems to be the only way to attest their ludic value and meantime to avoid circular argument. Other question deals with the hemispheres’ function within the games played in the city. We will return on this topic at the end of the paper, but in order to give a more “neutral” meaning, from a functional point of view, it is

4. On the methodological approach to the Pompeian material culture see Allison 1992; Berry 1997a; Berry 1997b; Allison 2001, p. 182; Allison 2004, p. 3-8; Allison 2006, p. 3-15; Allison 2007; Berry 2007; Laurence 2007, 1-10; Zanella 2020; Coralini 2020.
5. Cecchini 2015; Bianchi 2015; Lambrugo 2015b; Baratta 2019.
6. The author is aware that also dice or knucklebones can have other value (divinatory or ritual, for example), but the archaeological data available show that a ludic function for the objects here analyzed cannot be denied. On the divinatory/ritual use of the dice and knucklebones, Graf 2005; Costanza 2019, p. 187; 197; Klingshrin 2019.
7. Crawford 2009, p. 64
8. Varone 2003; Allison 2004, p. 76; Allison 2006, p. 24-25; Castiglione Morelli 2015, p. 351; Cool 2016a, p. 157-157; Morsiani 2017.
9. Crummy 1984, p. 92; Brewer 1986; Bacchelli – Pasqualucci – Mastrodonato 2000, p. 86; Cool – Baxter 2002, p. 370, tab. 2; Foy 2010, p. 458; Rustico 2013, p. 254-255; Derks 2015, p. 104; Alonso – Sabio Gonzales 2017, p. 44-45; Fellmann Brogli 2019, p. 90.
10. Krüger 1982; Meller 2001; Solberg 2007; Hall – Forsyth 2011, p. 1326.
11. Cool 2016a.

12. Béal 1983, p. 283; Cool 2016a, p. 171; Cool 2016b, p. 236.
13. Cerato 2000, p. 124.
14. Bacchelli – Pasqualucci – Mastrodonato 2000, p. 86; Cool 2016a, p. 158; Cool 2016a, p. 173.
15. Cool 2016a, p. 172; Cool 2016b, p. 243.
16. Cool 2016b, p. 236-237.
17. Crawford 2009, p. 62.
18. We can reconstruct the direct association between different gaming objects thanks the data collected at the moment of the excavation; when these are missing the proximity of the numbers of inventory has been considered a parameter to reconstruct a direct association. On the artefact assemblages Allison 2004, p. 76; Allison 2006, p. 395. For collections of ludic objects from habitation contexts beyond Pompeii, see Cecchini – Bianchi – Diani 2015, p. 123-124 and Tassinari 2018, p. 254 (domus of the Nymphaeum of Cremona). See also Daniaux – Loustaud 2022 (maison des Nones de Mars, Limoges).

better to call these object hemispheres instead than “counters” (it is better to use the word “counter” only when we are sure that they were used within boardgames and moved on a *tabula lusoria*).

The work carried out in the Pompeian store-rooms has allowed me to identify numerous contexts with game sets that also include glass hemispheres. In view of their association with other game tools, therefore, such hemispheres can be interpreted as gaming items. This paper will provide a list of such contexts – that belong to the last phase of city’s life, as testified by the available archaeological data – which will allow observations from various points of view.

The contexts are presented in progressive order, starting from the number of the *regio*, the *insula* and the “house number”.

FULLONICA OF STEPHANUS (I 6,7) (FIG. 1-3) (TAB. 1)

The *fullonica* of *Stephanus*¹⁹ was an atrium-house, opened onto the via dell’Abbondanza, transformed in a multipurpose building, used both as residence and fullery. In the north-east corner of the previous atrium was found a wooden wardrobe containing heterogeneous objects and among them it is possible recognize a gaming set composed by: one pottery dice-shaker (inv. 1469), two knucklebones (inv. 1496), one die (inv. 1497)²⁰, and one “Alexandrian *tessera*” (inv. 1507)²¹, also

three glass hemispheres (inv. 1498A-D)²², forty-two pebbles²³, and seven pottery sherds²⁴.

CASA DELLA STATUETTA INDIANA (I 8, 5)
(FIG. 4-6) (TAB. 2)

This large house probably belonged to an upper middle-class family, at least from the quality of the frescoes²⁵. It consists of an atrium, with an axial *tablinum*, lateral rooms, and a rear peristyle overlooked by service rooms. The eponymous object of the building was found by the excavators in October 1938 in one of these rooms, inside a wood wardrobe²⁶. It is a small ivory statue, perhaps originally the foot of a small table²⁷, representing a female figure that some have interpreted as the goddess *Laksimi*²⁸.

No epigraphic evidence on the identity of the house owner has been retrieved from the building. However, as suggested by the discovery of numerous navigational instruments and a series of graffiti representing sailing boats, the owner may have been involved in transmarine²⁹ commercial activities³⁰. He seems to have also had a strong passion for *scruta scita* (fine trinkets), as shown by some peculiar objects found in building³¹.

Two metal boxes arranged one on top of the other (Fig. 4) were found in the western part of the atrium, near the access to the *tablinum*. They contained³², among other things, 2 dice (inv. 7034A-B), as well as 10 black glass hemispheres (inv. 7035) and 10 white (inv. 7035).

19. *PPM* I 1990, p. 332-351; Bradley 2002, p. 27; Flohr 2003, p. 448; Flohr 2009, p. 179-181; Flohr 2011, p. 89-94.

20. «un dado [...] recante in 4 facce i segni 1, 2, 5 e 6, mentre i segni 3 e 4, poiché il dado è attraversato da un foro cilindrico, dovevano essere sui tappi che chiudevano le due estremità opposte del foro», Della Corte 1912, p. 286-287. On the dice and the methods for their documentation, see Béal 1983, p. 349-354; Poplin 2004-2005; Feugère 2013; Giacobello 2015b; de Voogt – Eerkens 2018, p. 99-101; Manniez 2019. On the hollow dice see Béal 1983, p. 345; Feugère – Picod 2014, p. 40-41 (DEJ-4002). On production of bone hollow objects see Feugère – Picod 2014, p. 38-39; Andreatta – Bianchi – Di Martino 2017, p. 119-120.

21. «una tessera anfiteatrale di osso, recante da una parte, in campo limitato da cerchi concentrici rilevati, l’emblema di una testa di maiale e dall’altra, in cifre romane e greche, il n. 14 rozzamente inciso (XIV e sotto ΙΔ)», Della Corte 1912, p. 287. These objects have generally been labelled as “*tesserae alessandrinae*”, see Bianchi 2015 and Bianchi 2021.

22. «tre pedine a sezione di sfera, di vario colore», Della Corte 1912, p. 287.

23. «quarantadue piccole ghiaie lenticolari, di pietra», Della Corte 1912, p. 287. These objects are not preserved in the storeroom.

24. «sette ghiaie artificiali di terracotta risultanti da cocci smussati», Della Corte 1912, p. 287. These objects are not preserved in the storeroom.

25. *PPM* I 1990, p. 797-801.

26. Castiglione Morelli del Franco – Vitale 1989, p. 194.

27. Ferrari 2016, p. 116-117.

28. Castiglione Morelli del Franco – Vitale 1989, p. 194; *contra* Ferrari 2016, p. 117

29. Castiglione Morelli del Franco – Vitale 1989, p. 194.

30. Castiglione Morelli del Franco – Vitale 1989, p. 194, fig. 7.

31. From the same house also come «una statuetta maschile in osso [...], di un monile in pasta vitrea e di un monile in cristallo di rocca, dei numerosi vasi in bronzo e vetro e, da ultimo, di un vaso in ceramica invetriata di provenienza alessandrina» Ferrari 2016, p. 119-120.

32. *Giornale degli Scavi* 1939, July 27th.

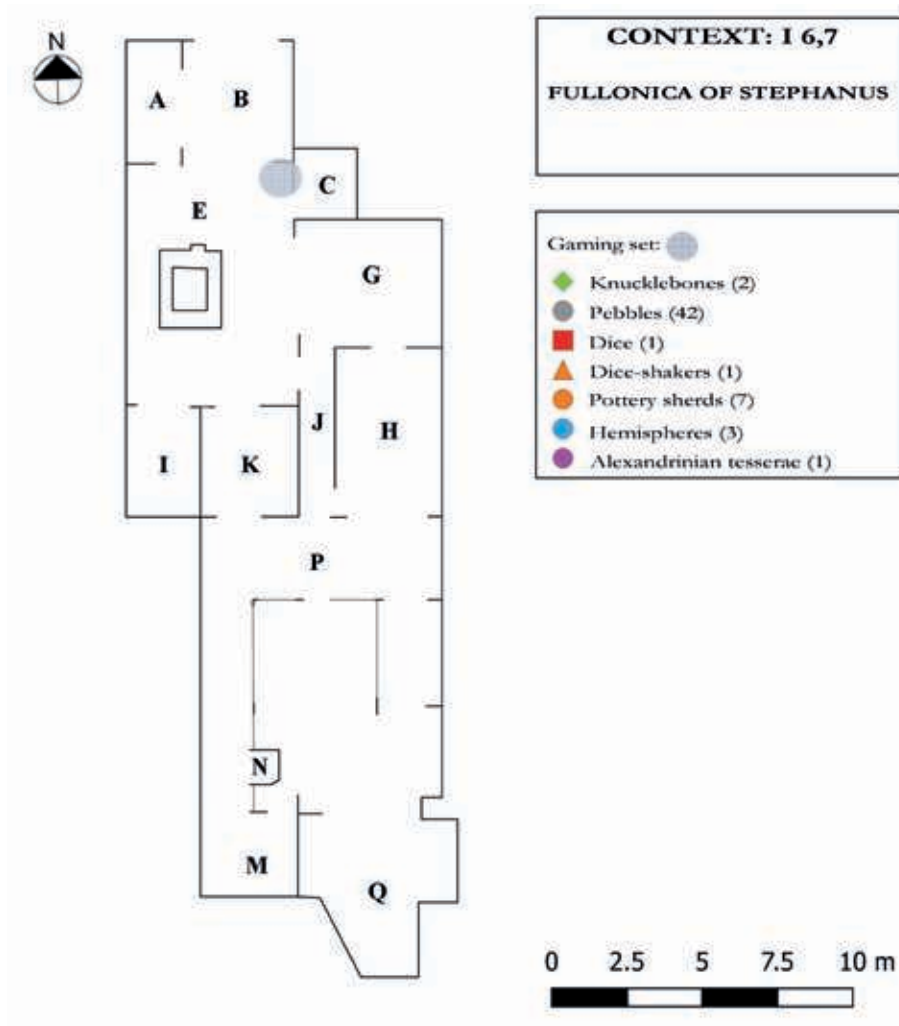


Fig. 1 - The *Fullonica* of *Stephanus* (I 6,7) with the placement of the gaming set (by QGIS).



Fig. 2 - One small pot (1.1) and two knucklebones (1.2-3). From the *Fullonica* of *Stephanus*.



Fig. 3 - One bone die (1.4), one bone “tessera alexandrina” (1.5) and three glass hemispheres (1.6-8). From the *Fullonica* of *Stephanus*.

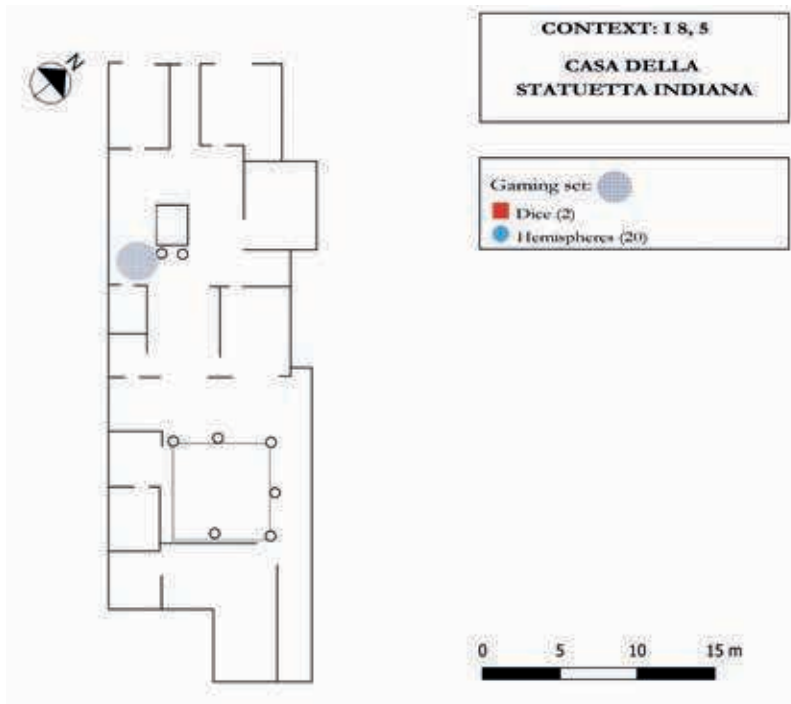


Fig. 4 - Casa della statuetta indiana (I 8, 5) with the placement of the gaming set (by QGIS).



Fig. 5 - Two bone dice (2.1-2) from the Casa della statuetta indiana.

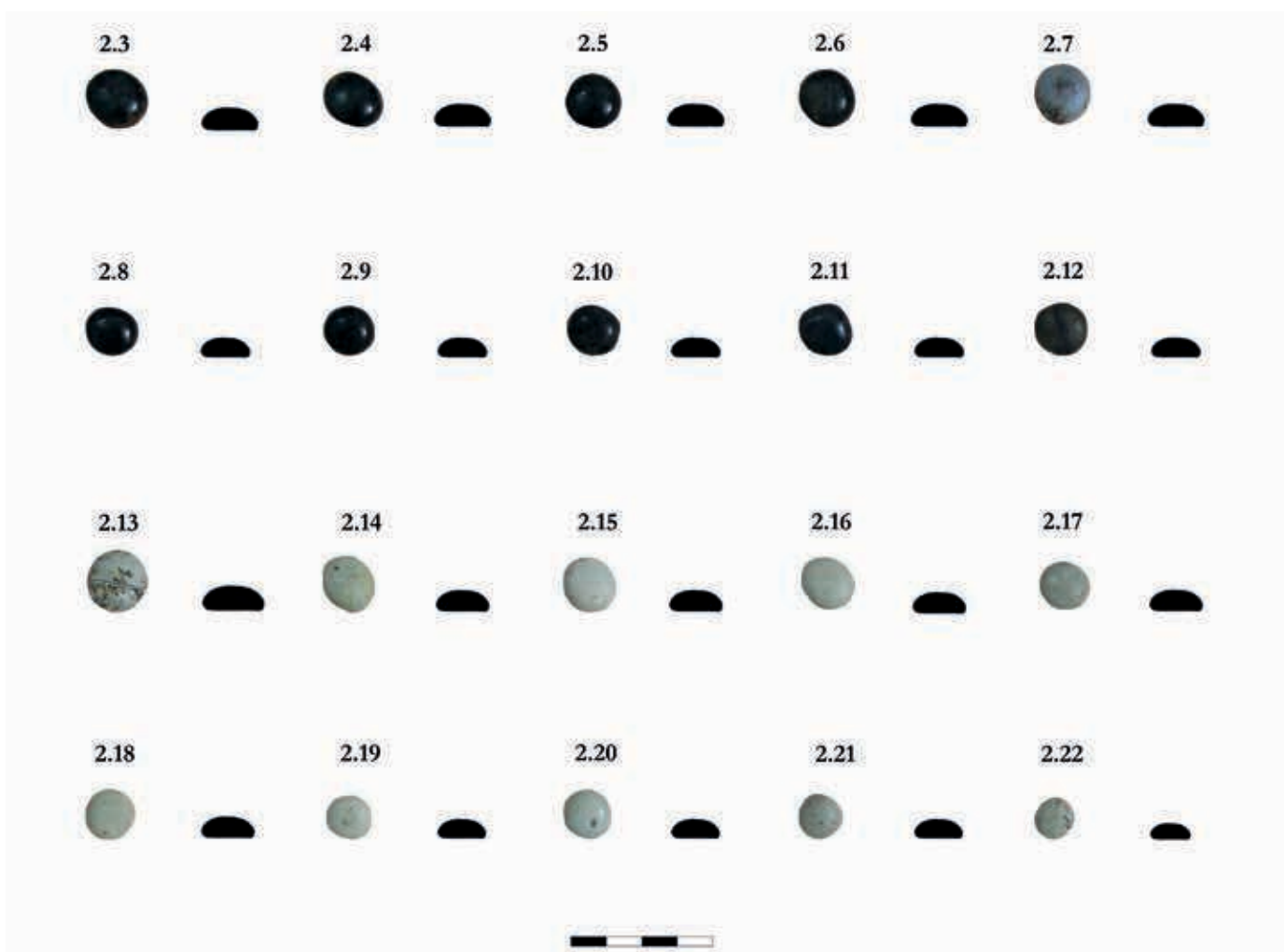


Fig. 6 - Twenty glass hemispheres (2.3-22) from the Casa della statuetta indiana.

HOUSE WITH WORKSHOP (I 9, 8) (FIG. 7-10) (TAB. 3)

This is a house used both as a workshop and residence³³. It was provided with a large but short *atrium* without *impluvium*³⁴. In a room located in the innermost part of the building (whose function is uncertain) was found a ludic assemblage composed by³⁵: 4 small pottery pots (inv. 9313)³⁶,

5 bone tokens (inv. 9345-9346, 9348-9350)³⁷ and 6 hemispheres in glass (inv. 9360). Also a small plain pottery vase (9315A), called “fritillo”³⁸ by the excavators, which contained 7 glass hemispheres of various colours (9315B)³⁹ can be added to the gaming set.

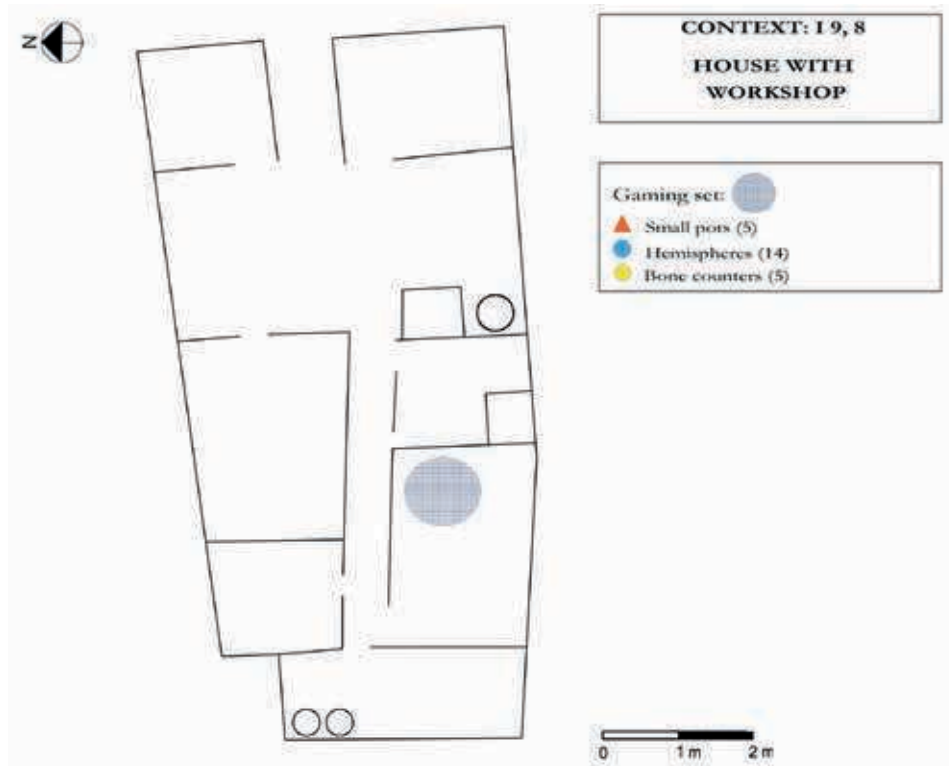


Fig. 7 - House with workshop (I 9, 8). With the placement of the gaming set (by QGIS).

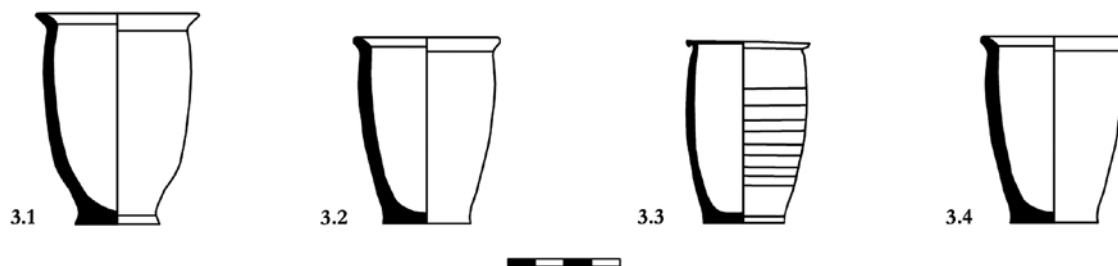


Fig. 8 - Four small pots (3.1-4). From the house with workshop.

33. Upon her overall analysis of the materials found in this building, Fiorenza Proto does not identify a clear purpose for this building, labelling it as “uncertain”, Proto 2006, p. 26. On this kind of structures, Pirson 2007, p. 468-469.
 34. *PPM II* 1991, p. 138.
 35. *Giornale degli Scavi* 1952, July 4th; about the building also see Ciarallo 2012, p. 399-402.
 36. On the ludic value of these objects see Pace 2022.

37. These tokens cannot be identified as “Alexandrian”, presenting the two inscriptions on their opposite sides; see Bianchi 2021.
 38. *Giornale degli Scavi* 1952, July 4th.
 39. The excavators reported that the jar contained «alcuni bottoni di varie forme, di vario colore e grandezza», excavation diary 1952, month of July. In the warehouses there are 7 coloured glass hemispheres (inv. 9315B).

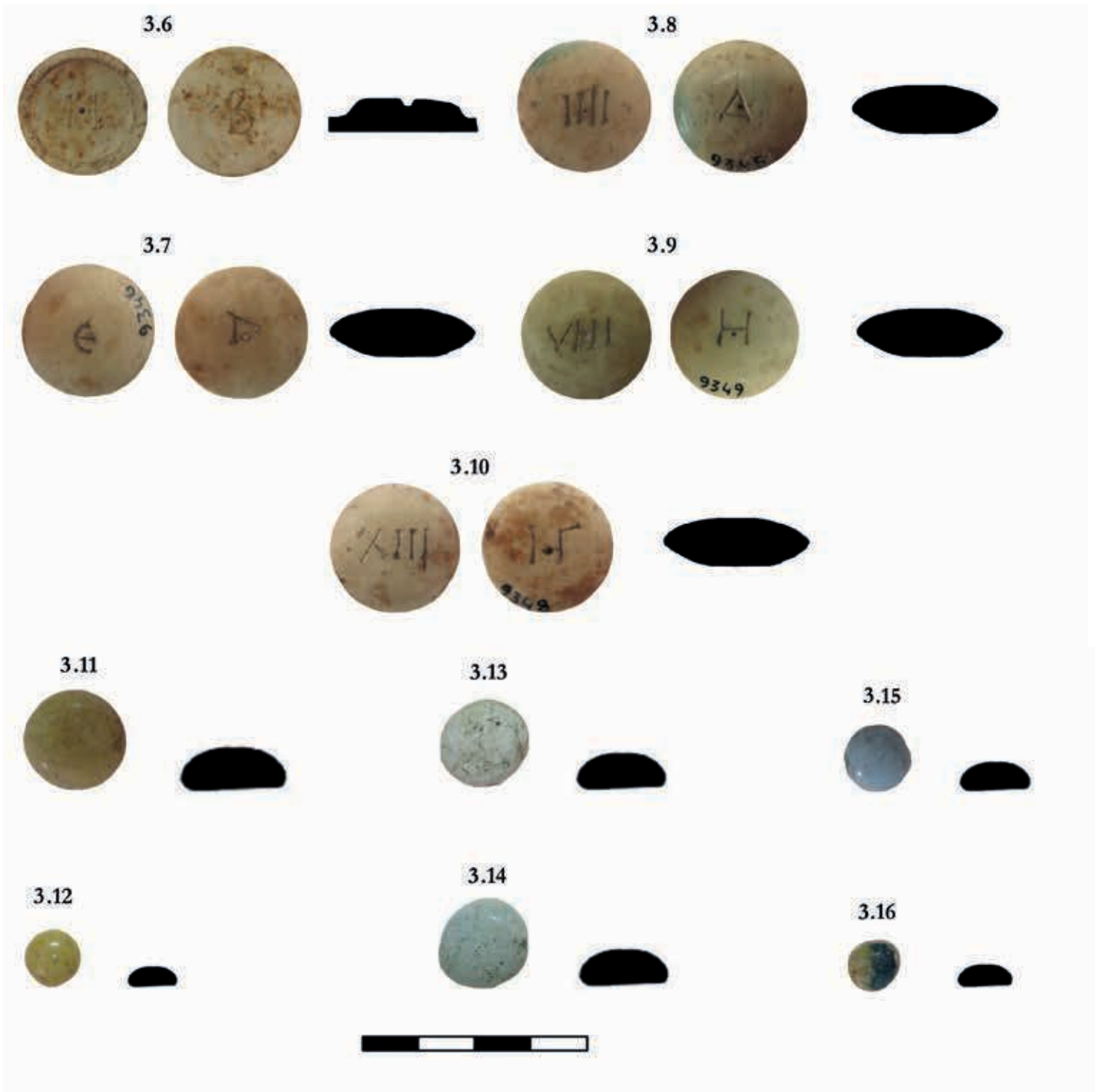


Fig. 9 - Five bone token (3.6-10) and six glass hemispheres (3.11-16). From the house with workshop.

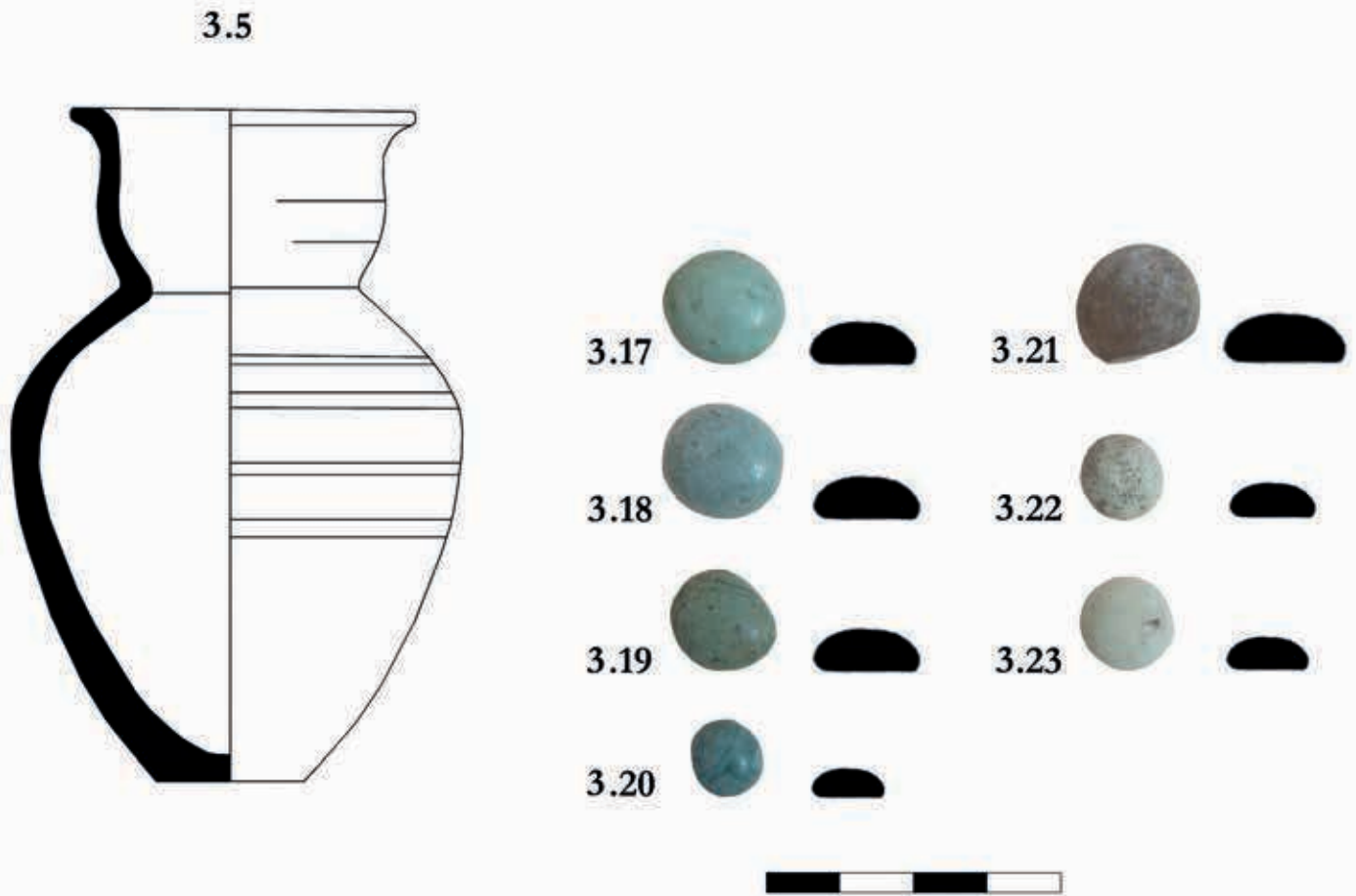


Fig. 10 – One small pot (3.5) and seven glass hemispheres (3.17-23).

CASA DEL MENANDRO (I 10, 4) (FIG. 11-13)
(TAB. 4)

The House of Menander is one of the most prestigious residences of Pompeii, provided with a lavish residential area and adjoining private baths⁴⁰. The house is also renowned for its fine decorations, which include the eponymous fresco⁴¹.

For the purpose of this paper, I will focus on Room 1 of the building⁴², which was right at the

entrance of the house. Despite its extremely simple architecture and decoration, the room yielded a particularly significant find.

This consisted in two 2 bone dice (inv. 4254)⁴³ and 20 glass hemispheres of various colours and sizes (inv. 4258)⁴⁴, which were probably part of a game set⁴⁵. A large quantity of heterogeneous material, including bone brooches and pins, possibly linked to the *mundus muliebris*⁴⁶, was found with these items.

40. Maiuri 1933; *PPM* II 1991, p. 241-397; Ling 1997, p. 47-144; Dickmann 1999, p. 317-318; *ibid.* p. 355-356; Ling 2003; Ling – Ling 2005, p. 3-106; Varriale 2012, p. 165-168; Lorenz 2014, p. 188.

41. Varriale 2012, p. 163; Lorenz 2014, p. 189.

42. Maiuri 1933, p. 36-37; Ling 1997, p. 138; *ibid.*, p. 265; Allison 2004, p. 76; Allison 2006, p. 299.

43. Allison 2006, p. 299.

44. Varone 2003, p. 193, M2; Allison 2006, p. 59, n. 14.

45. Allison 2004, p. 76; Allison 2006, p. 395. *Contra* see Cool 2016b, p. 236.

46. Allison 2006, p. 299.

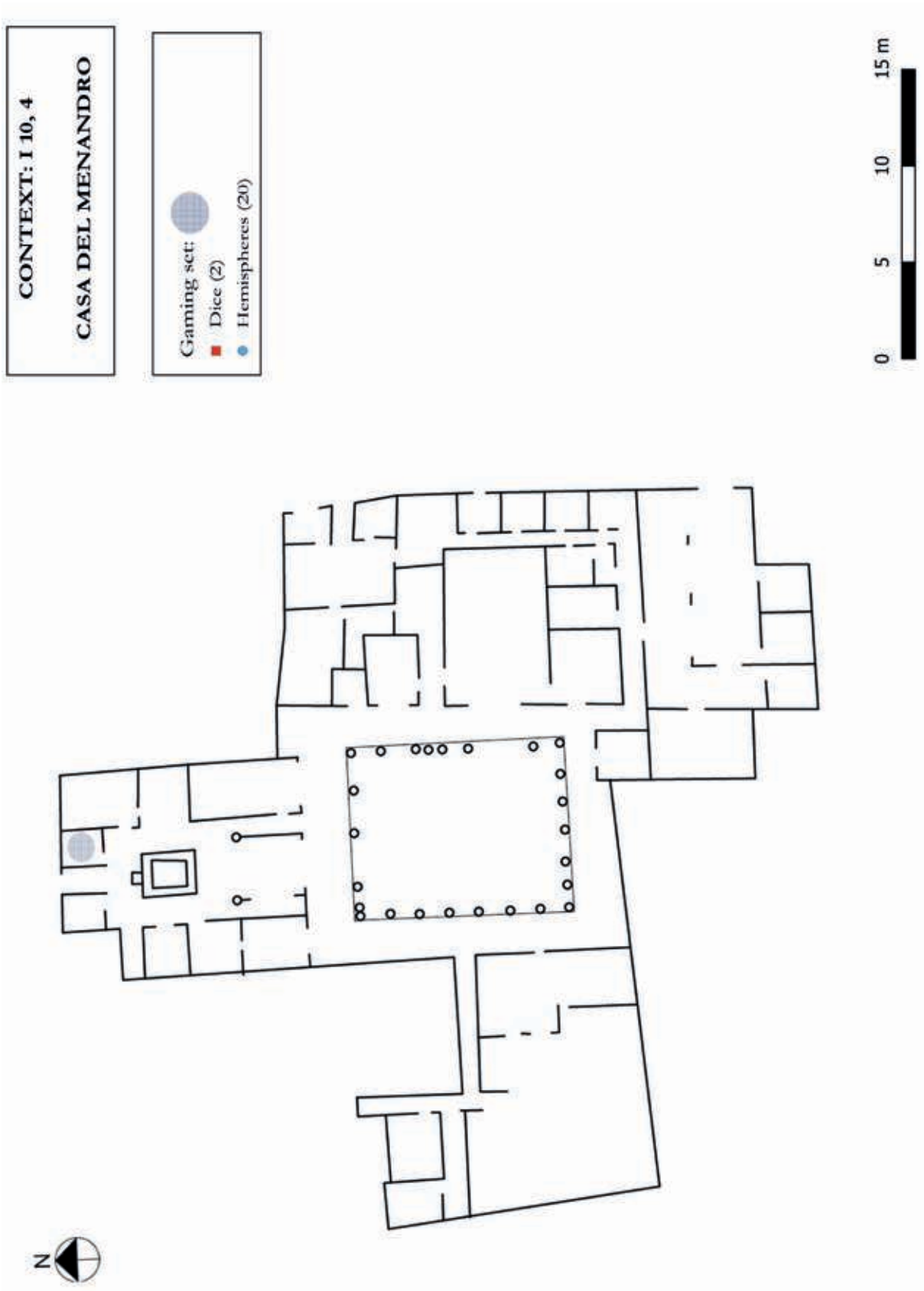


Fig. 11 - The Casa del Menandro (I 10, 4). With the placement of the gaming set (by QGIS).

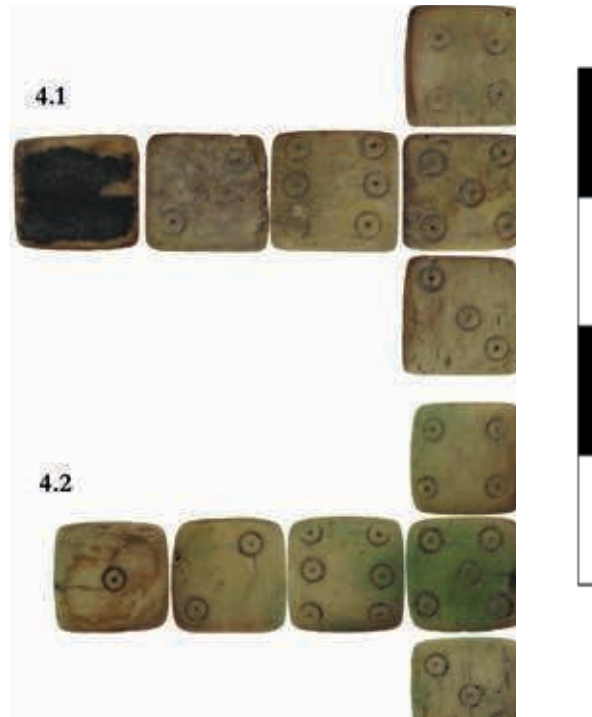


Fig. 12 - Two bone dice (4.1-2). From the Casa del Menandro.

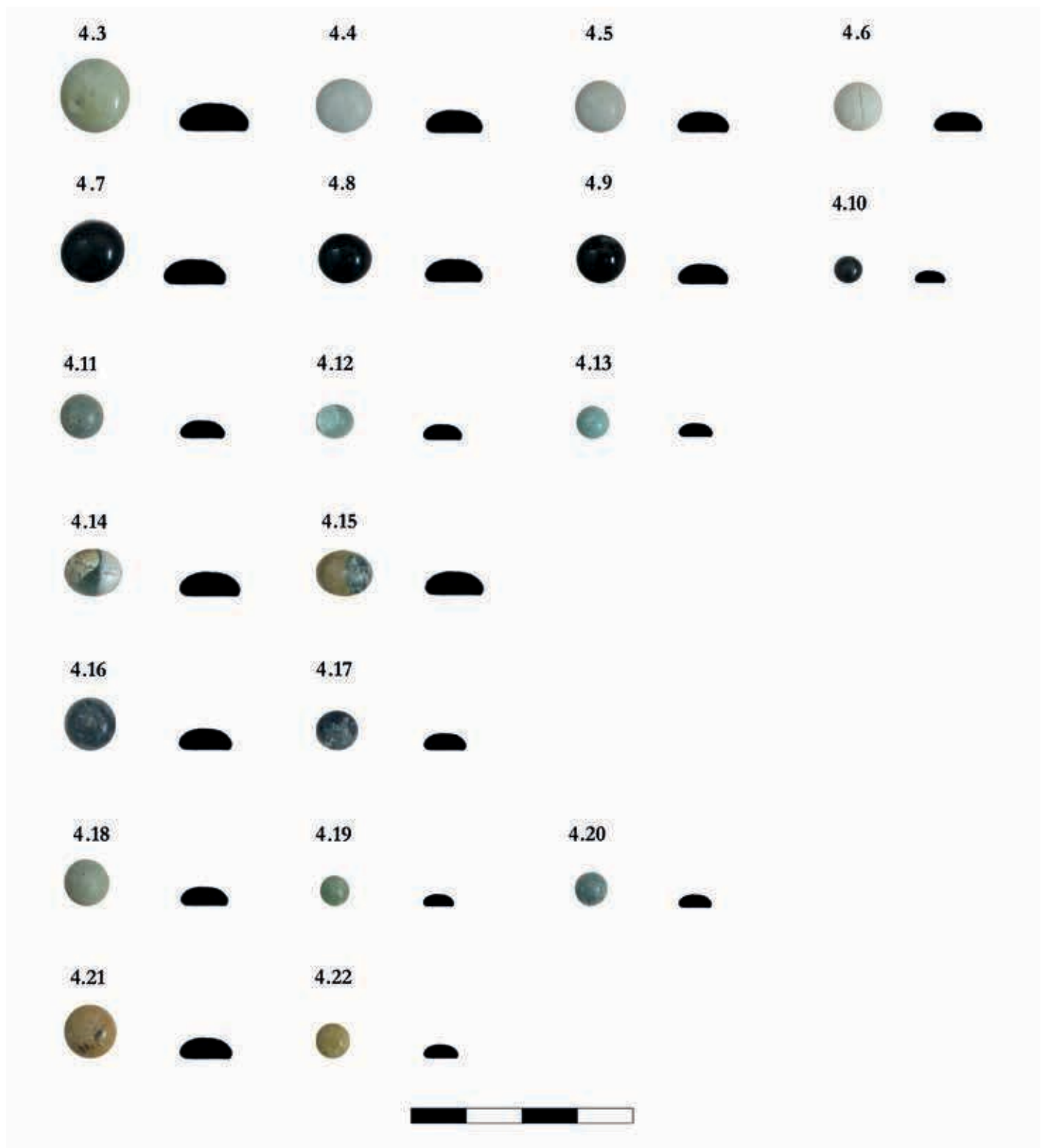


Fig. 13 - Twenty glass hemispheres (4.3-22). From the Casa del Menandro.

BUILDING (I 14, 11-15) (FIG. 14-18) (TAB. 5)

There are no specific publications on this building, only partially excavated in the 1950's and 1960's⁴⁷. The entrance at no. 12 leads to a large porticoed courtyard. The whole southern side of the *insula* is occupied by communicating commercial structures (nos. 11, 13, 14, 15)⁴⁸.

On September 25th, 1958 the excavators found several objects including 2 dice (inv. 12246A-B) and 72 glass hemispheres, of which 22 black, 27 white, 23 of other colours (inv. 12243A) «nel terzo ambiente entrando per la fauce n. 12 all'insula XIV, Regio I⁴⁹».

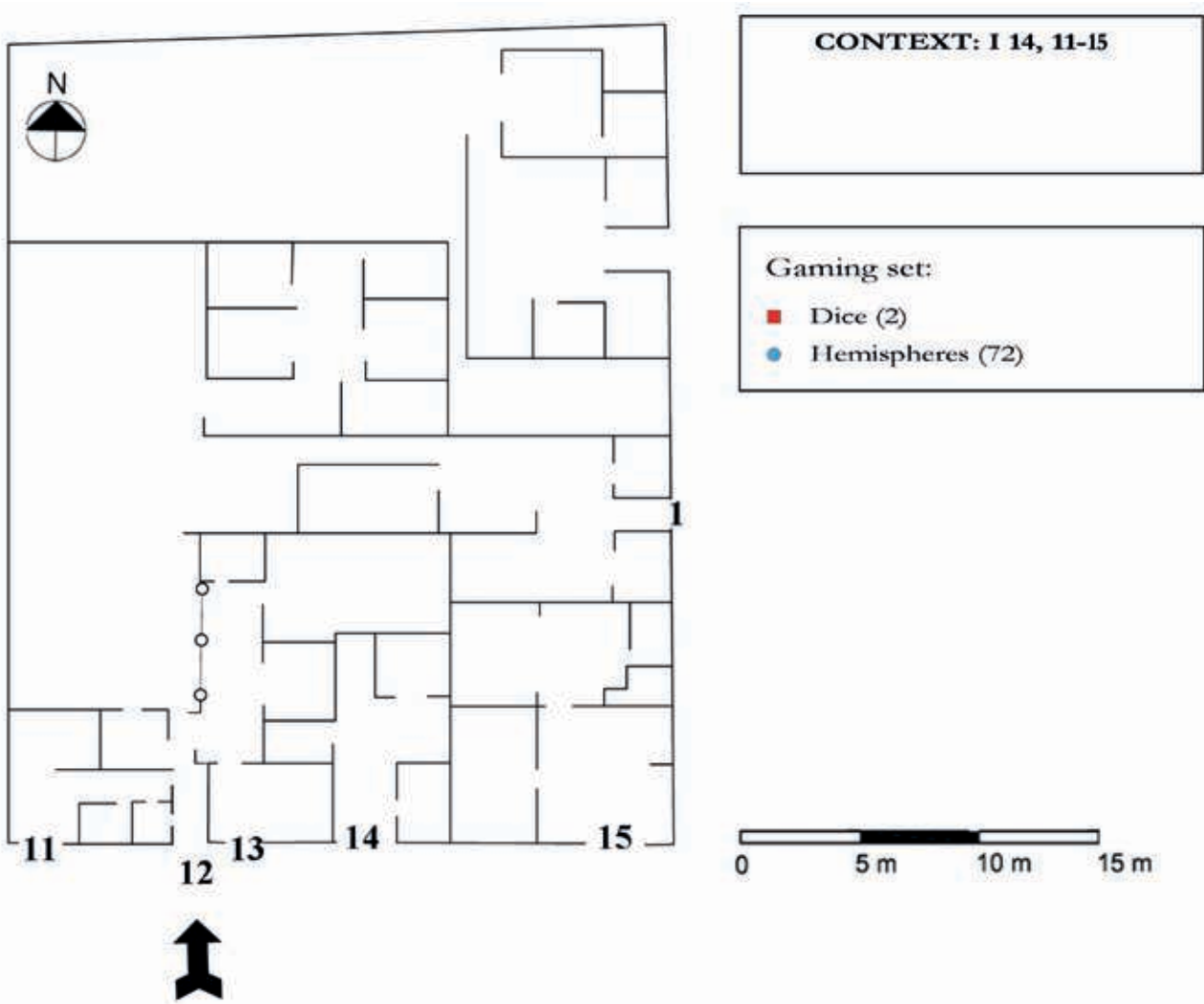


Fig. 14 - Building I 14, 11-15.

47. *PPM II*, p. 947- 953. It is plausible that it was part of the *hospitium*, located in the same *insula* (I 14, 1), of which it constituted the back entrance.

48. *PPM II* 1991, p. 947.

49. *Giornale degli Scavi* 1958, September 25th. The ludic set cannot be located precisely within the building with the data available.

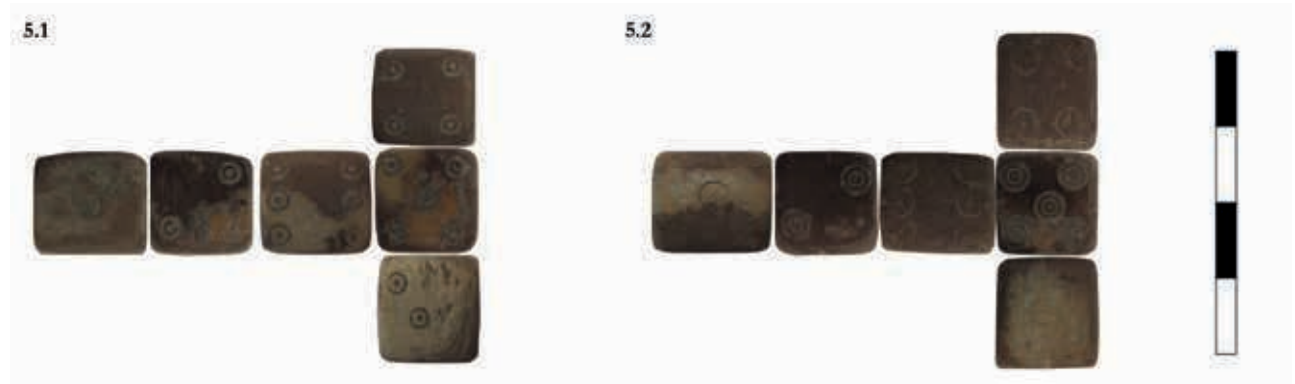


Fig. 15 - Two bone dice (5.1-2). From building I 14, 11-15.

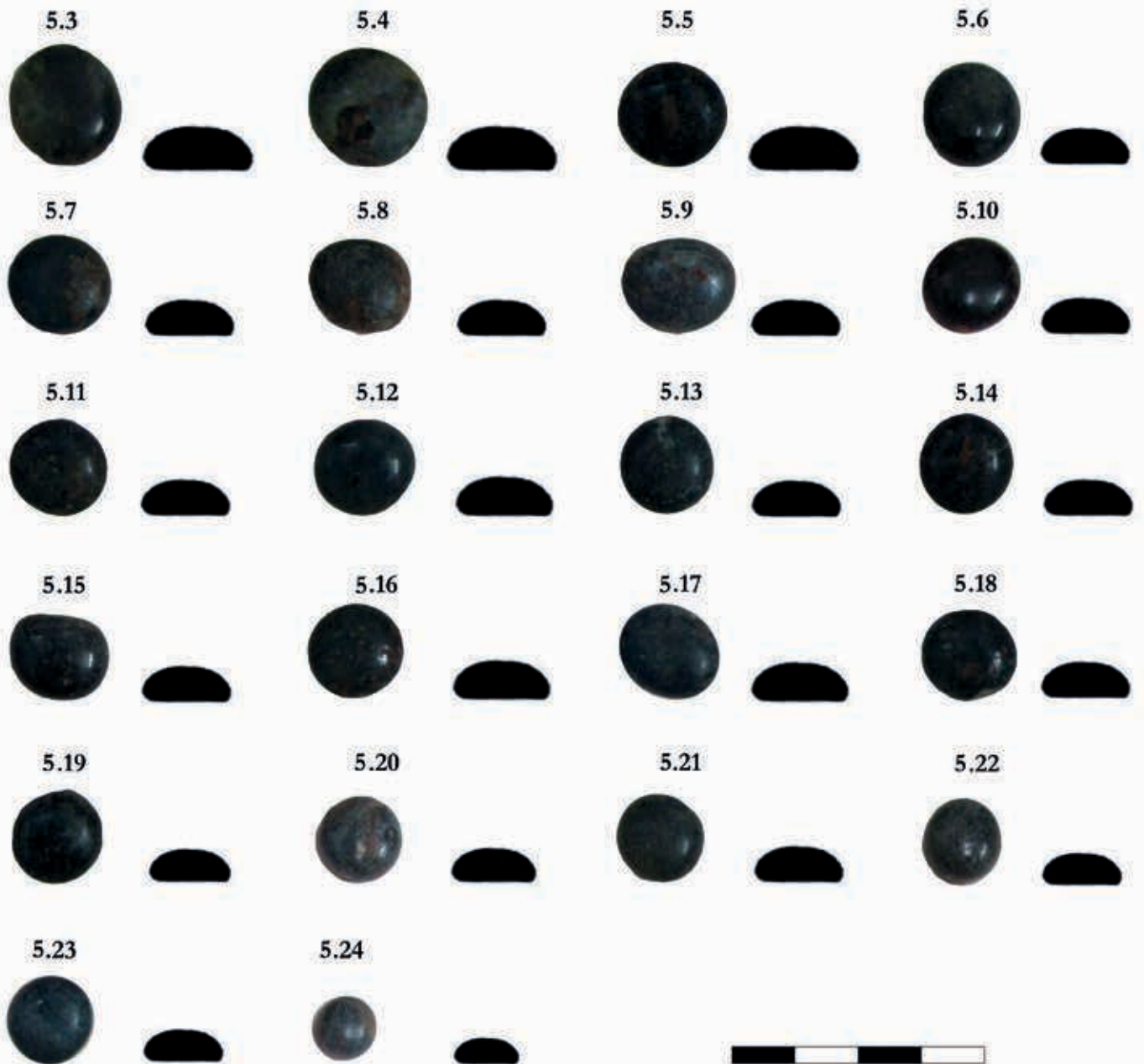


Fig. 16 - Glass hemispheres (5.3-24). From building I 14, 11-15.

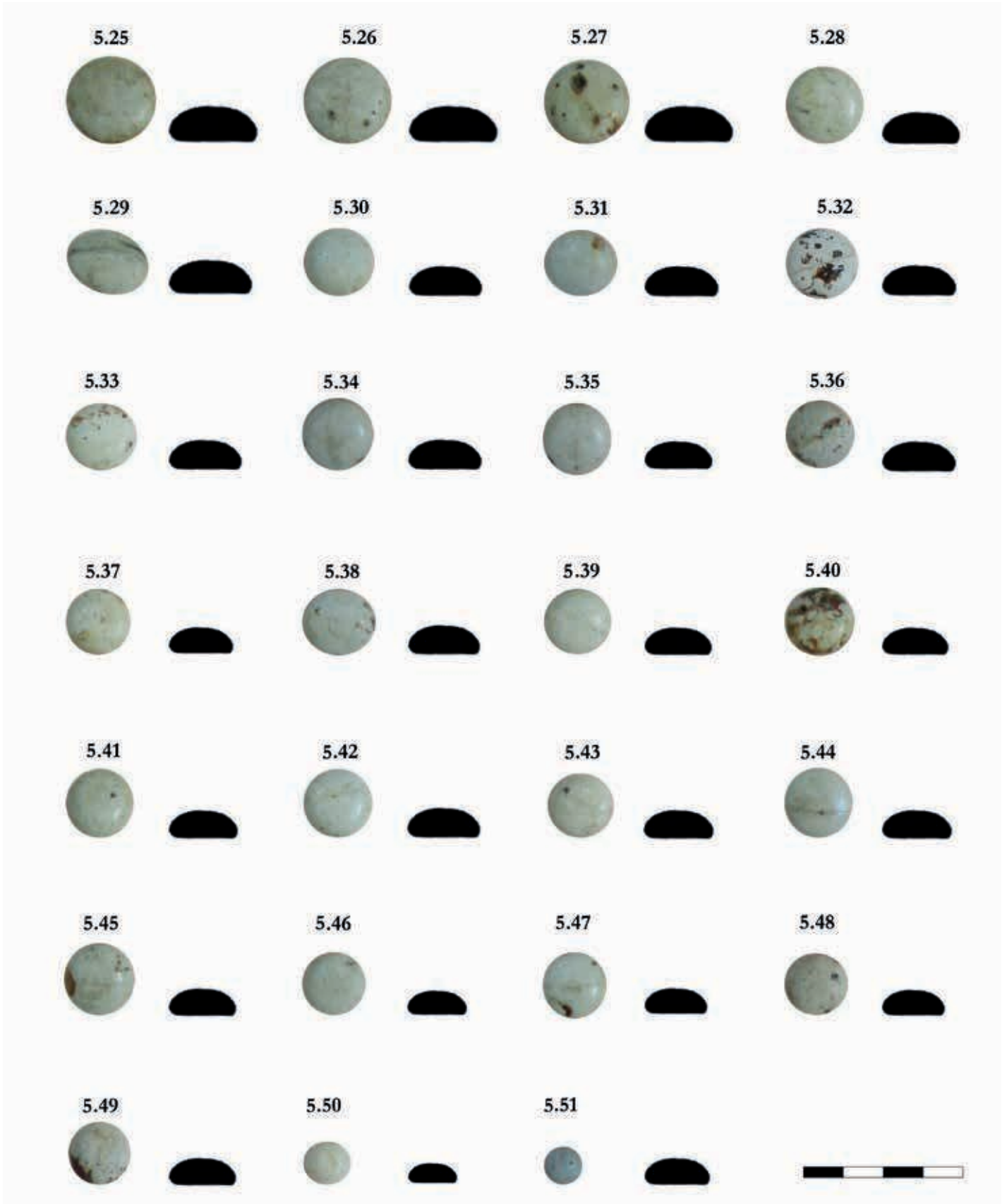


Fig. 17 - Glass hemispheres (5.25-51). From building I 14, 11-15.

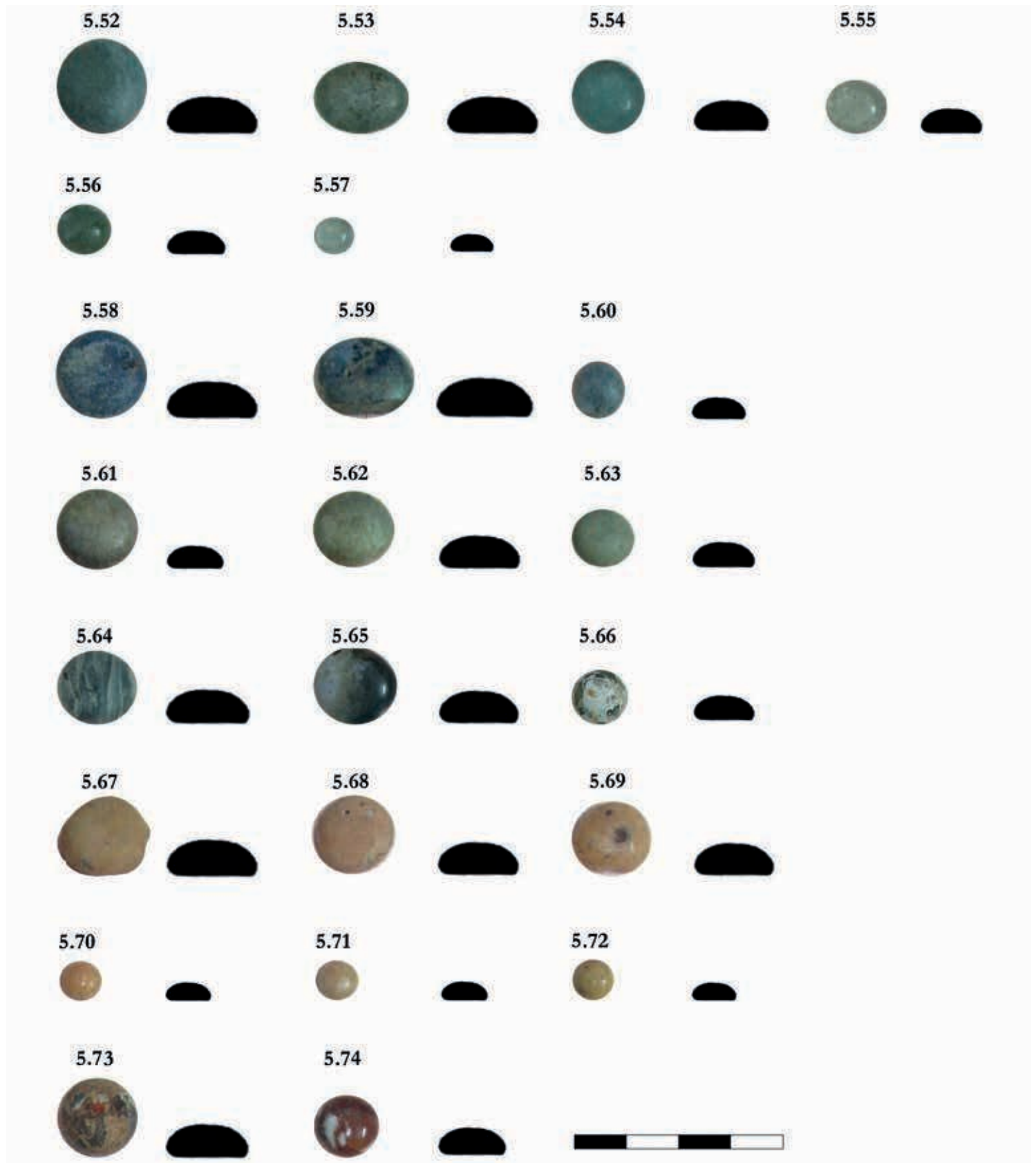


Fig. 18 – Glass hemispheres (5.52-74). From building I 14, 11-15.

HOUSE (I 16, 3) (FIG. 19-21) (TAB. 6)

This small two-storey house⁵⁰ is gathered around an *atrium* on which open some rooms⁵¹. It is known for the paintings of the *lararium*, representing *Minerva* and the *Genius loci*⁵². In Room 5, which overlooks the

atrium, was most likely located a wooden wardrobe containing a large quantity of objects. These include 1 bone token (inv. 11881A), 4 “*tesserae lusoriae*” of various types (inv. 11881B-E)⁵³, 8 glass hemispheres (inv. 11876A)⁵⁴ and 1 «frammento di vetro o di cristallo dalla superficie molata» (inv. 11876F)⁵⁵.

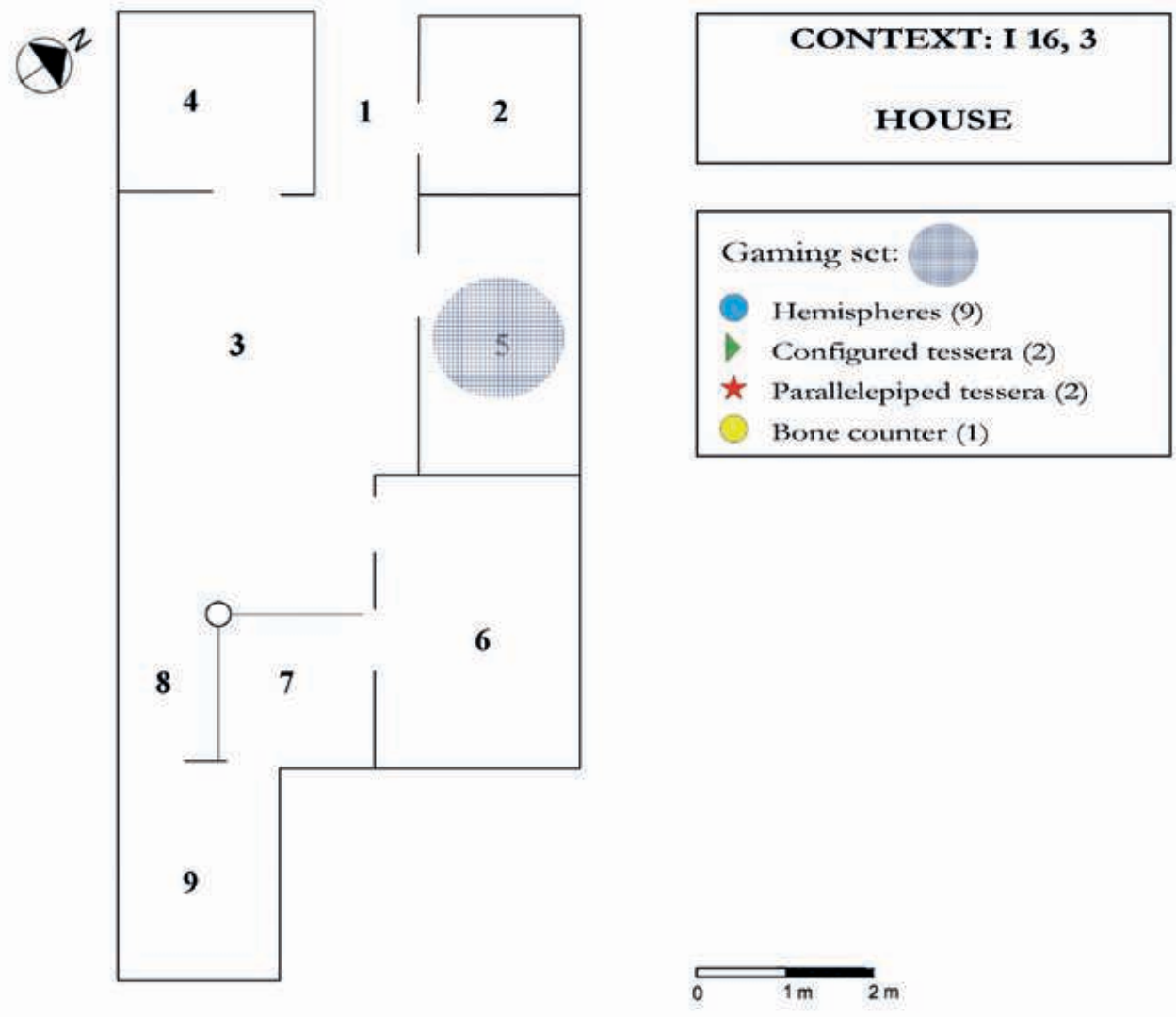


Fig. 19 – House I 16, 3 with the placement of the gaming set (by QGIS).

50. Fergola – Sampaolo 1990; Stefani – Borgongino 2010, p. 91, fig. 8.

51. *PPM* II 1991, p. 983.

52. Fröhlich 1991, p. 264, L 35; Giacobello 2008, p. 234; Stefani – Borgongino 2010, p. 95 nota 82.

53. Stefani – Borgongino 2010, p. 93; Baratta 2019, p. 71-72.

54. Stefani – Borgongino 2010, p. 93.

55. All the objects stored in the wooden wardrobe are reported in Stefani – Borgongino 2010, p. 93.

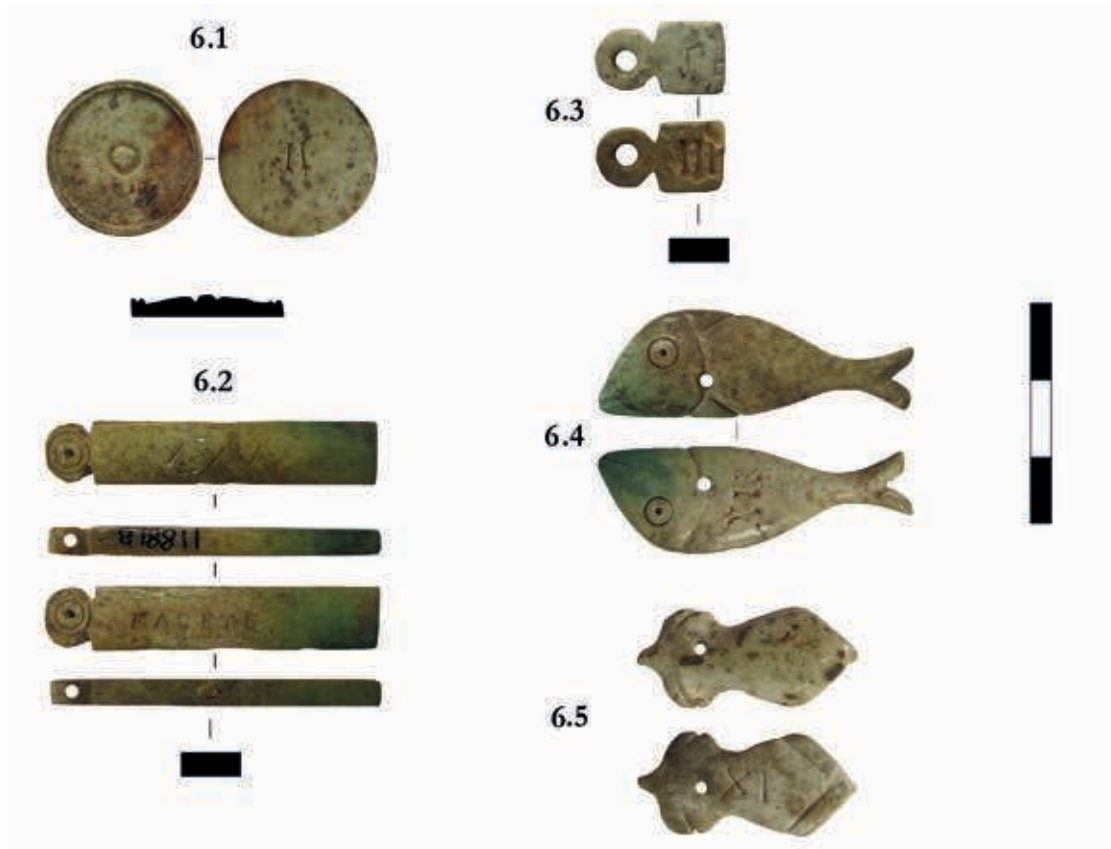


Fig. 20 - One bone token (6.1), two parallelepiped "tesserae" (6.2-3) and two configured "tesserae" (6.4-5). From the house I 16, 3.

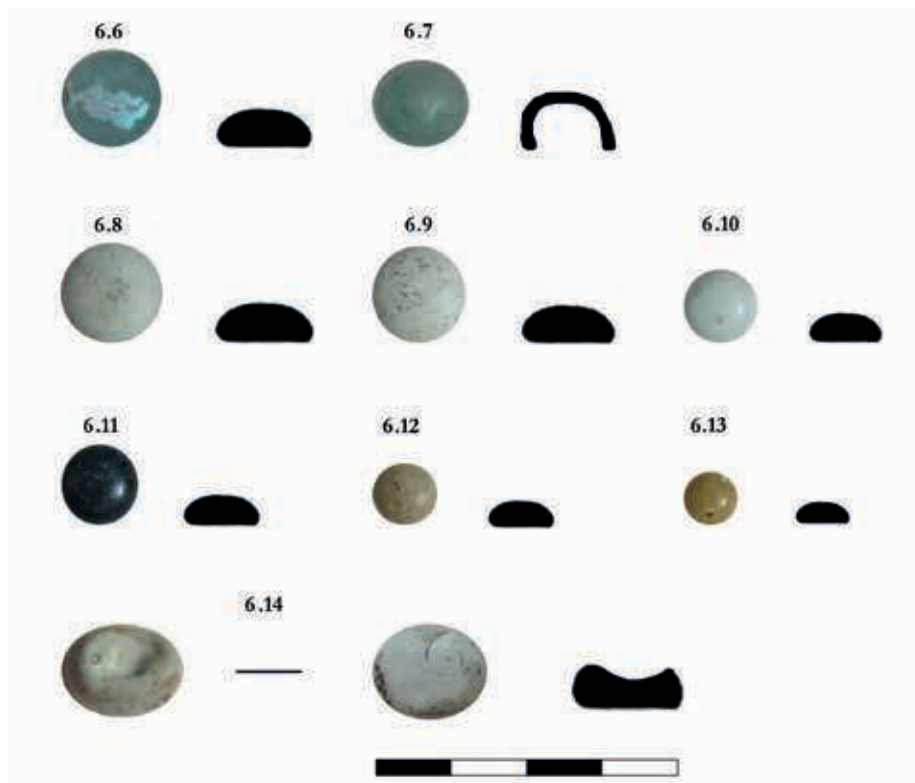


Fig. 21 - Glass hemispheres (6.6-13) and a lenticular object (6.14) from the house I.16.3.

VILLA DEI MISTERI (FIG. 22-24) (TAB. 7)

The Villa of the Mysteries⁵⁶, located outside the Herculaneum Gate, is known for the famous series of frescoes found in a room in the western part of the structure⁵⁷. Like many others buildings in the Pompeian countryside, the living part was closely

connected with the production area, recognizable by the presence of spaces allocated to grape pressing and storage⁵⁸.

In the area of the *torcularium*⁵⁹, was found a gaming set composed by two small pottery pots (*fritilli*)⁶⁰, two dice and forty glass hemispheres⁶¹.

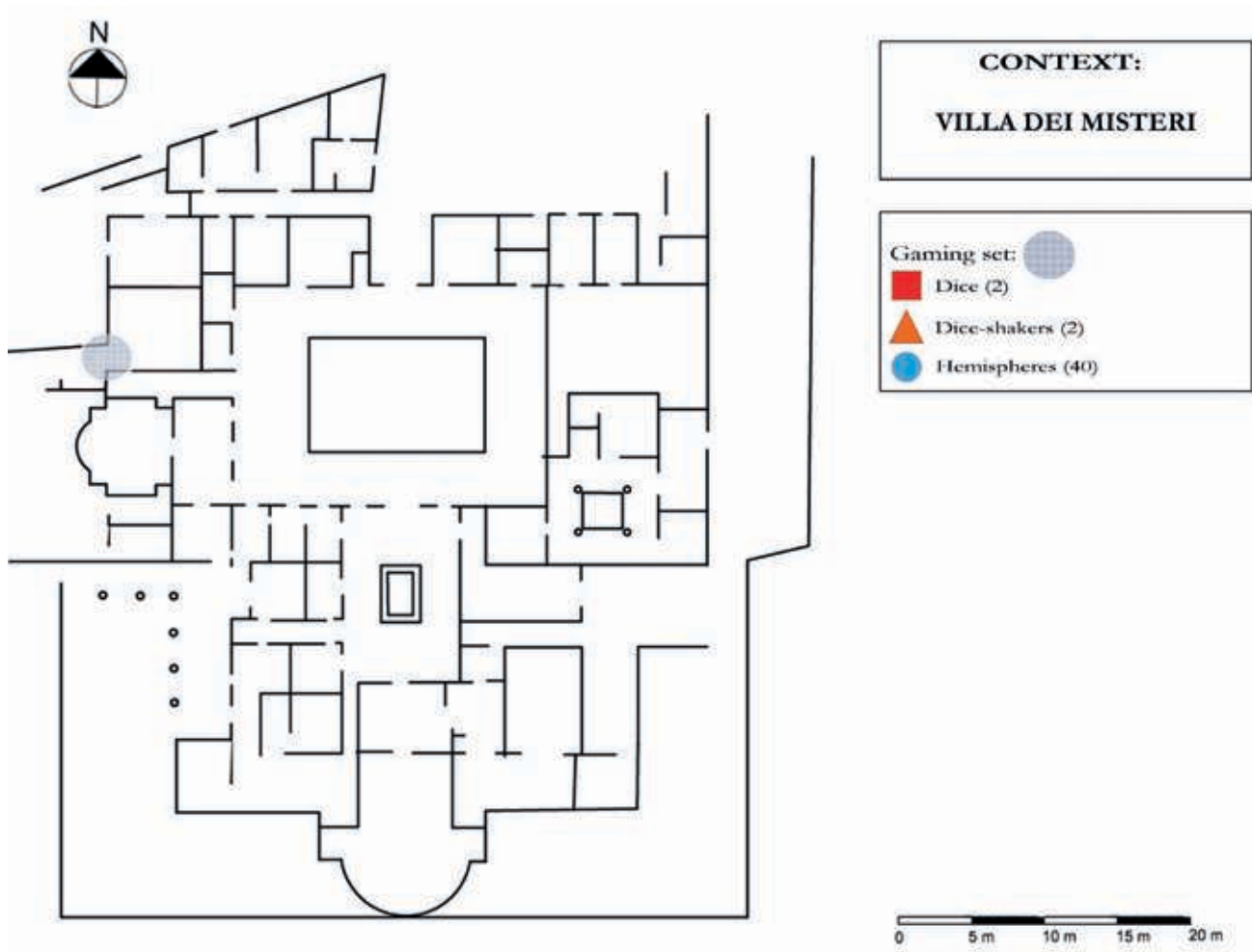


Fig. 22 - The Villa dei Misteri with the placement of the gaming set (by QGIS).

56. Maiuri 1960; Civale 2007, p. 135-135; Esposito – Rispoli 2013.

57. Maiuri 1960, p. 51-84; Logenfellow 2000; Bergmann 2007.

58. For the Villa Regina in Boscoreale see De Caro 1994, p. 35-46; for the structure found in Ponticelli (NA), Cascella – Vecchio 2012, p. 172-175; on the Villas of Terzigno, Cicirelli 1989; Cicirelli 2003; on the rustic Villas of Scafati (via Spinelli and via Poggiomarino), De' Spagnolis Conticello 1993-1994.

59. Maiuri 1960, p. 40-44.

60. *Giornale degli Scavi* 1930, March 4th.

61. «quaranta bottoni in pasta vitrea di varia grandezza», *Giornale degli Scavi* 1930, March 4th.

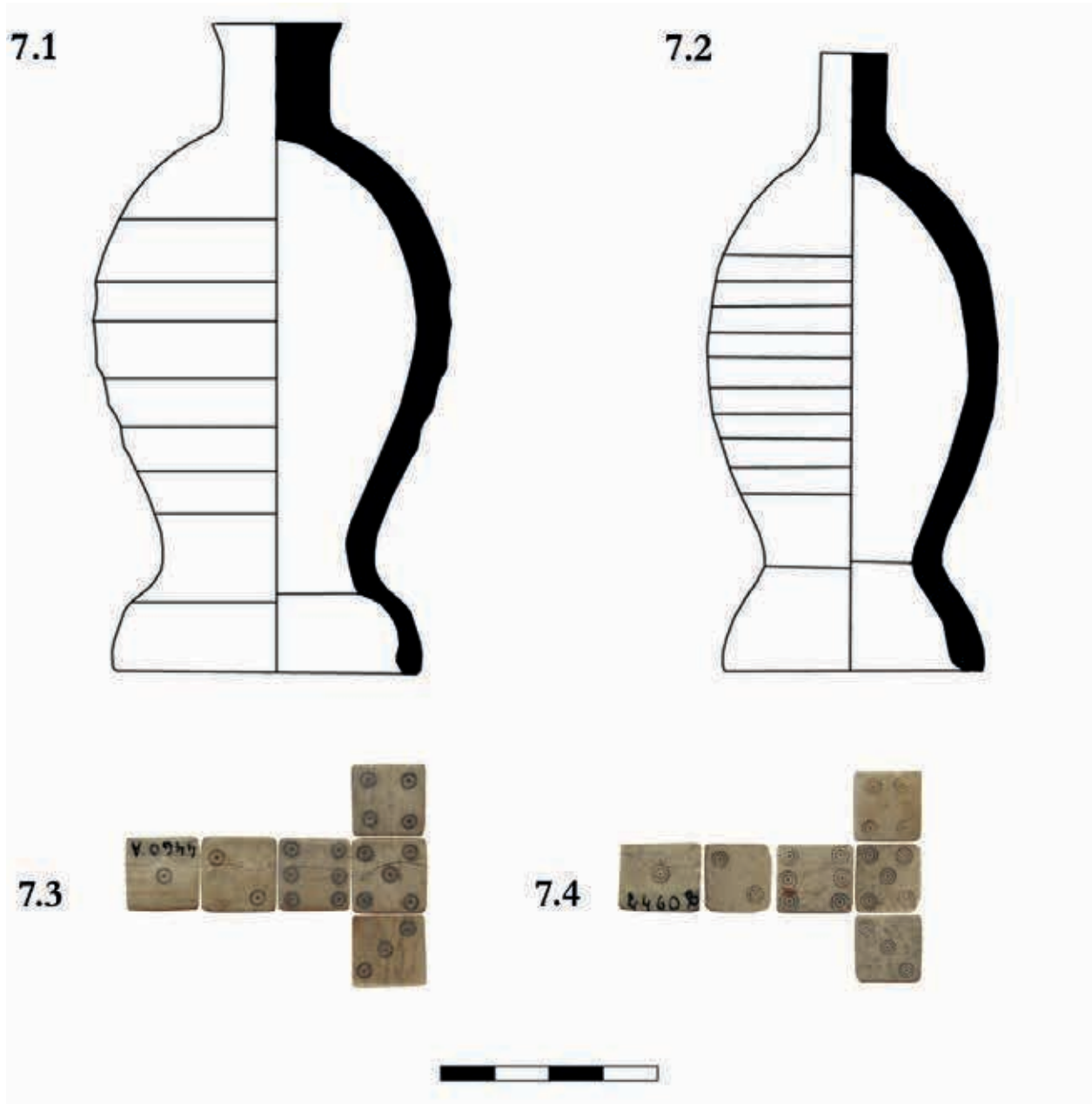


Fig. 23 - Two small pots (7.1-2) and two bone dice (7.3-4). From the Villa dei Misteri.

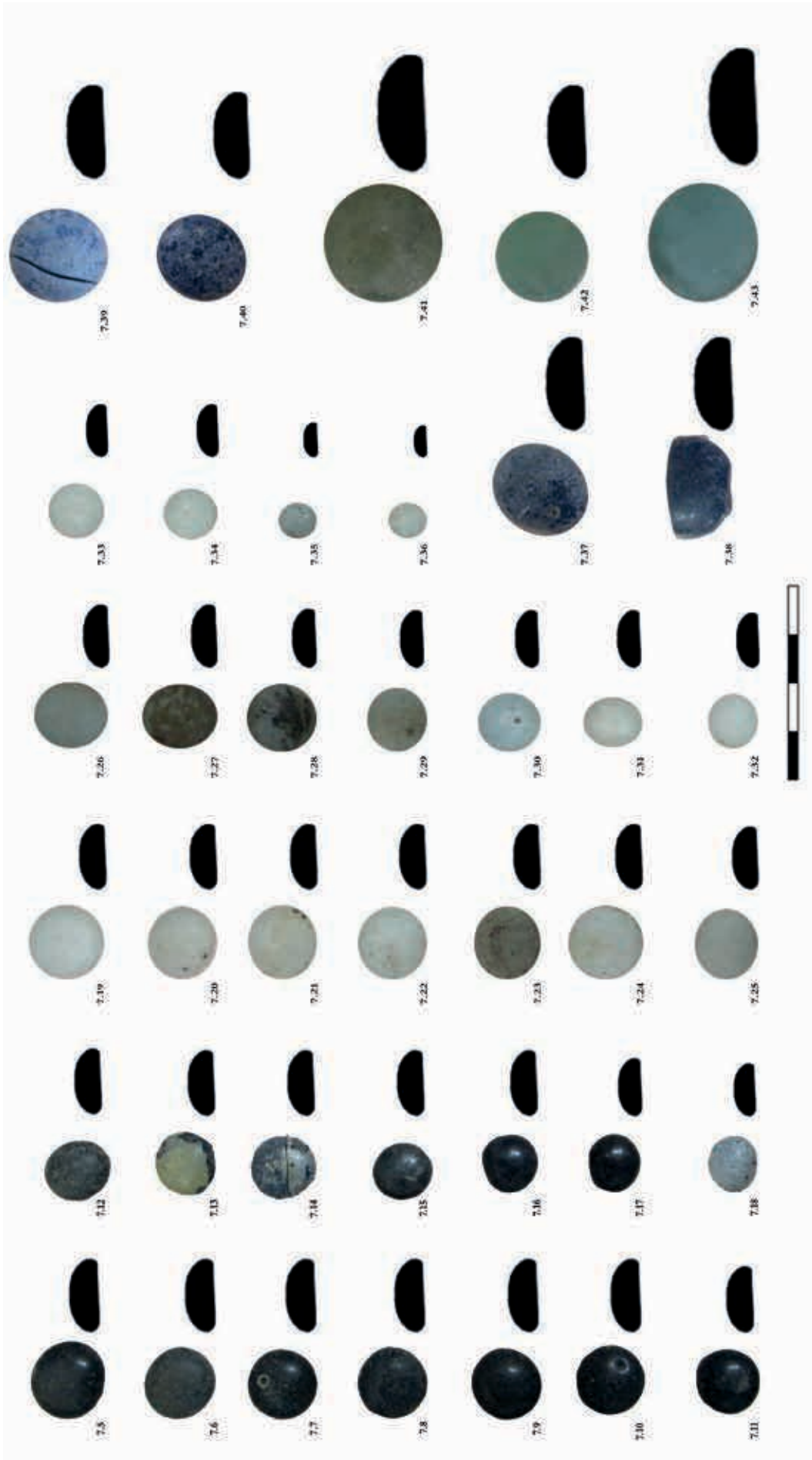


Fig. 24 – Glass hemispheres (7.5-18) from the Villa dei Misteri.

DISCUSSION

The evidence presented above allows us to discuss a sample of 177 glass hemispheres, found in association with other ludic equipment, likely interpretable as gaming items, on which some observations on their composition can be made.

The first aspect I will consider is object size. This parameter was already employed by Hilary Cool for the analysis of the material found at the *Insula VI* of the *Regio I* in Pompeii. By comparing the Pompeian sample with a dataset of counters from seven 1st century AD burials, Cool identified a “dividing point” to interpret the function of these objects at the size of 1.5 cm. In this frame, all items larger than 1,5 cm would indeed be “counters”; those measuring less would be something else, perhaps elements used in the interior decoration of houses⁶².

In light of the available aforementioned evidence, this type of approach does not seem to be fully satisfactory, given the large variability in sizes observed both within the overall sample and at each context considered (Fig. 25). The average size within our dataset is 1.4 cm, but with a wide variability in dimensions, ranging between a minimum of 0.6 cm and a maximum of 2.2 cm (Fig. 25).

Within the sample, the sizes are homogeneously distributed over the entire range of values, excluding the extremes and a peak of 1.8 cm (20% of the total) and 1.7 cm (14% of the total), whose “weight” is however mitigated by their concentration in the same context (I 14, 11-15).

Indeed, by applying *a priori* parameters based on object size, we would exclude a significant portion of items, as these latter would be considered unsuitable for ludic practices in view of its size.

Another issue can be the chromatic one (Fig. 26-27). In this respect, a predominance of white and black seems evident (attested at 38% and 29% of the total) (Fig. 27); in terms of percentages, these two colours are more frequently found in association with larger specimens. This evidence is particularly evocative as it finds an echo in literary sources, such as the well-known

passage of the *Laus Pisonis* where black and white counters are mentioned⁶³.

However, the evidence suggests proceeding with caution⁶⁴, even if a chromatic parameter seems to be valid in some contexts, that is, for example, in the game set consisting of two dice, 10 white and 10 black glass hemispheres, found in the Casa della Statuetta Indiana (I 8, 5). The black hemispheres in this context are all significantly above the average size in the sample (1.4 cm), ranging between a maximum of 2 cm and a minimum of 1.7 cm. By contrast, some of the white pieces are smaller.

The material from the Casa del Menandro (I 10, 4) even more demonstrates the complexity of this issue. Out of a total of 20 hemispheres from this context, only 4 are black and 4 are white. Most of the black and white counters are limited in size, similarly to the 3 azure, 3 green, 2 blue, 2 yellow and 2 two-toned found with them⁶⁵. The same can be stressed for the objects from the Villa dei Misteri where 18 white hemispheres are “balanced” by 14 black, 4 blue, 2 green and 1 azure.

Given the above, therefore, not even a chromatic parameter can be considered a valid criterion, as demonstrated by the evidence found in the building I 14, 11-15 where the 72 objects found in this context, cover all the available size ranges. The most conspicuous groups – with the largest average sizes – are black (22) and white (27), followed by azure (6), yellow (6), blue (3), green (3) and other colours (5). With the available evidence, it seems difficult to be able to infer any valid interpretative parameter from this sample; the same can be said for most of the contexts analysed (Fig. 26).

63. *Laus Pisonis* 193-194 (“*calculus et vitreo peraguntur milite bella, ut niveus nigro, nunc et niger alliget albos*”); Torre 2015, p. 18. That counters were generally made of glass, is suggested by others Latin authors; Ovid warns “*sive latrocinii sub imagine calculus ibit, fac pereat vitreo miles*” (if you make a counter walk in the war game make sure that your pawn is won by the enemy of glass), *Ov., Ars Am.*, 2, 207-208. Ovid explains “*discolor ut recto grassetur limit miles*”, (how to make advance counters of different colours), *Ov., Trist.*, 2, 477-480.

64. For an overview of the counters from funerary contexts in Italy, in which a great chromatic variability is evident, see Airoidi 2015, p. 116-117.

65. Cool doesn’t agree on the ludic value of this assemblage, Cool 2016b, p. 236.

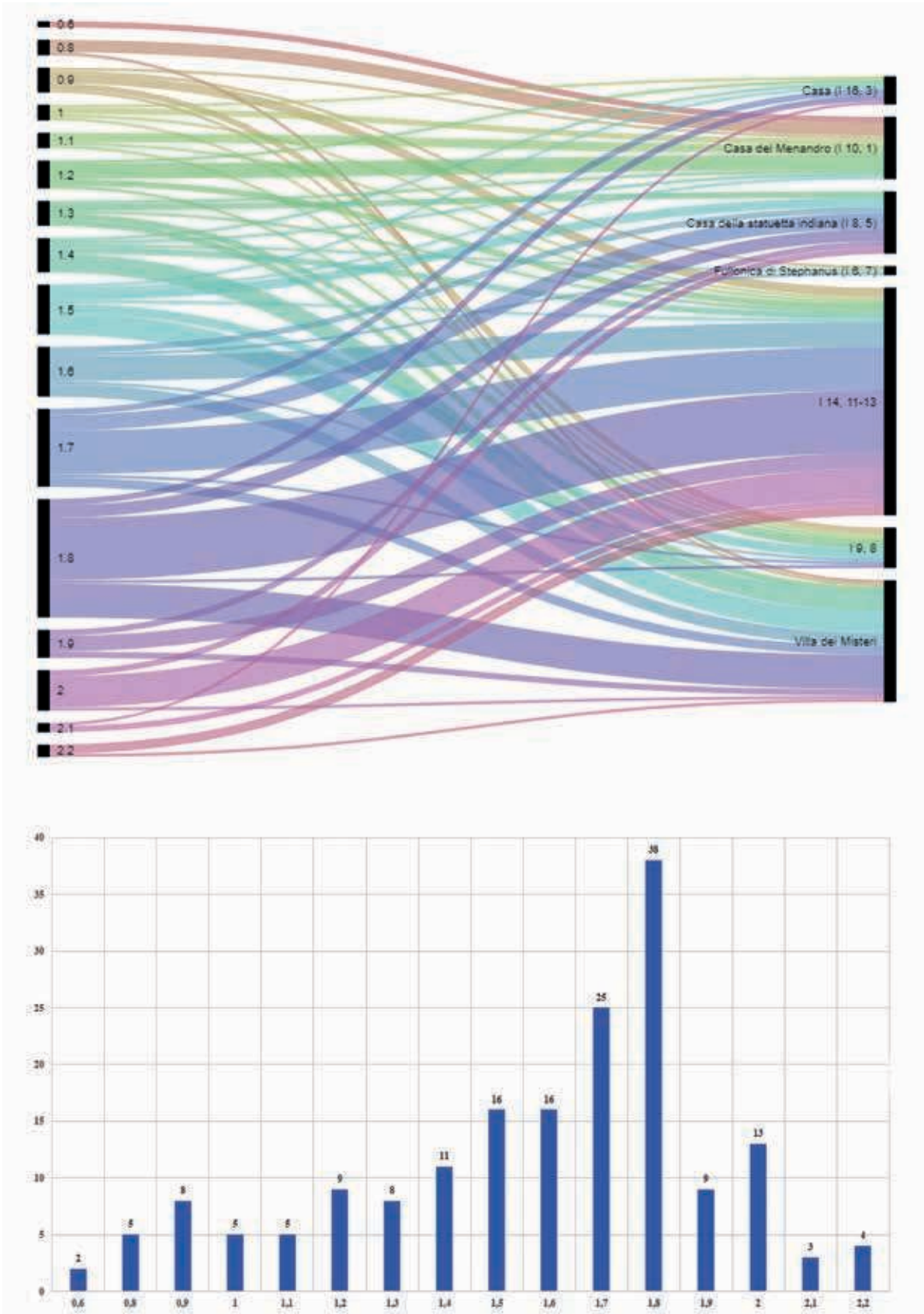


Fig. 25 - Above, dimensional distribution of the dataset context by context (diagram generated by RAWGraphs). Below, a dimensional overview of the dataset.

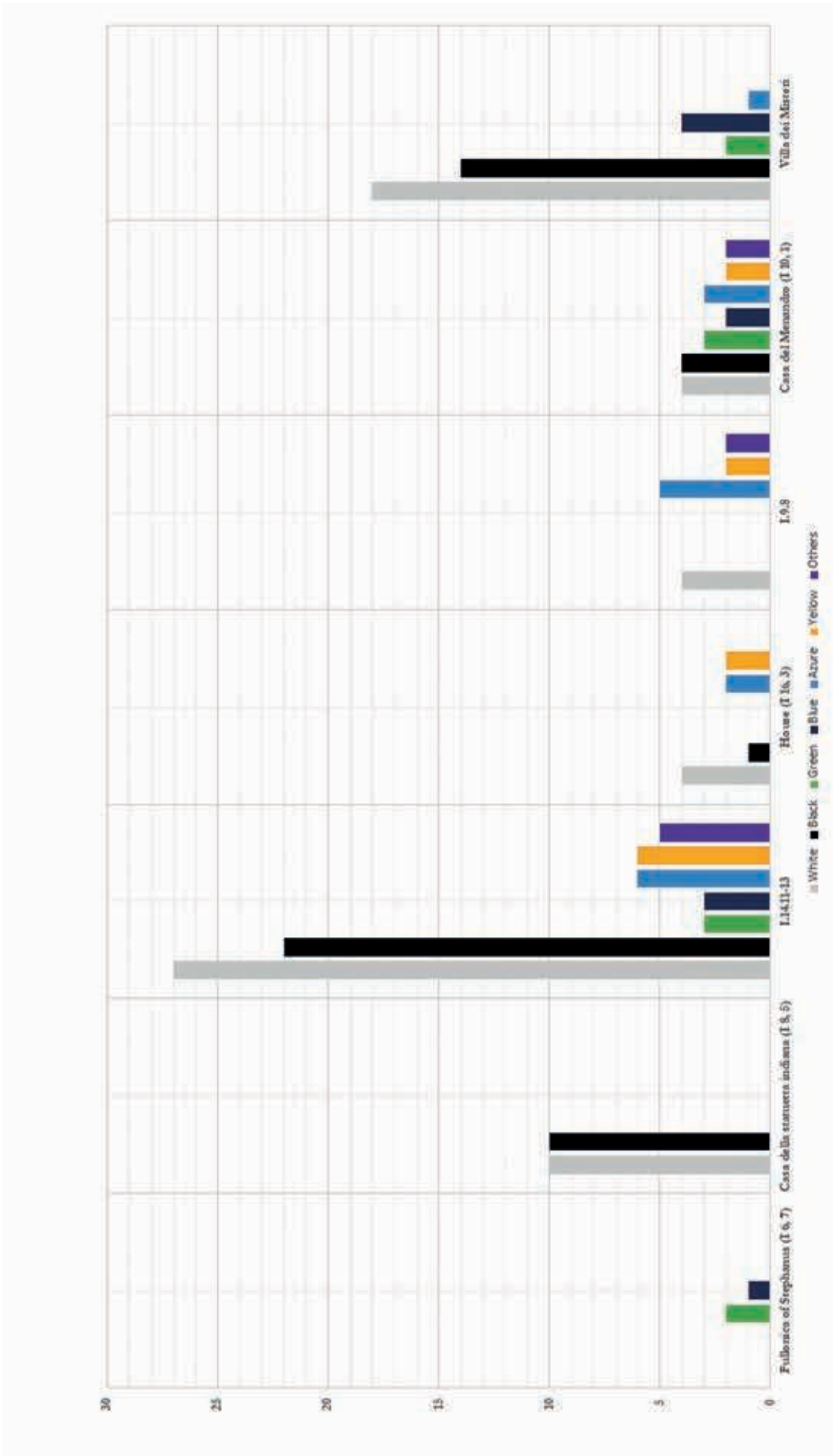


Fig. 26 – Chromatic overview of the dataset (context by context).

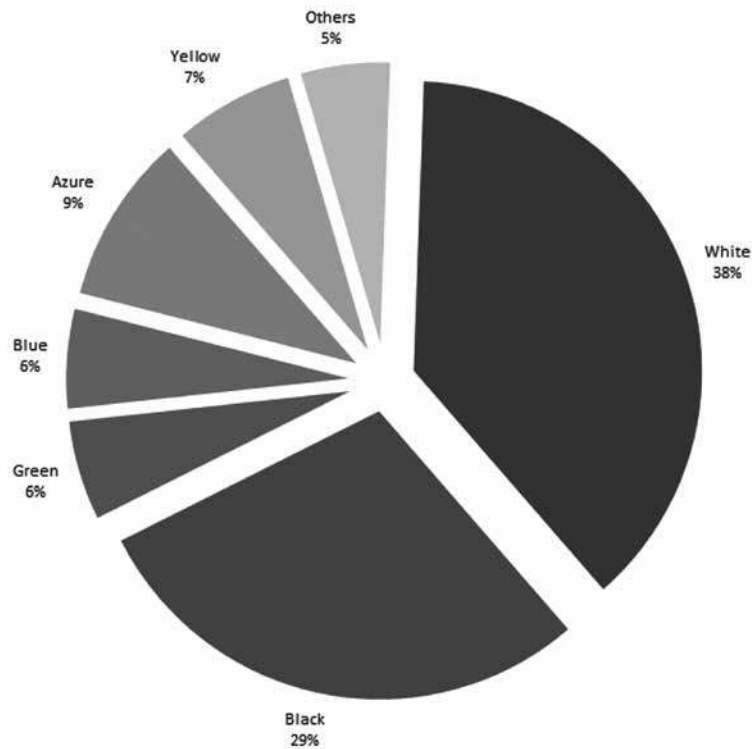


Fig. 27 – Chromatic overview of the dataset.

A further approach that is worth trying, is a quantitative one, which aims to identify any recurring distribution pattern in the number of counters with the same colour within game sets. The only object collection that seems suitable for analysis within this parameter, is that from the aforementioned Casa della Statuetta Indiana (I 8, 5). In this case, there is indeed a perfect correspondence between black and white hemispheres (10 for each group), all rather large, despite a few exceptions. Similarly, in the Casa del Menandro (I 10, 4), the number of white and black hemispheres is equivalent (4), so as the blue and yellow ones (2), while the number of the azure ones (3) differs. These are the contexts, in which the evidence is more “readable”, while in other cases the situation is rather unclear.

In spite of the above, the quantitative parameter can be useful when trying to identify game sets exclusively constituted of “counters”, which would otherwise be impossible to recognise through associations with other game equipment.

A further analytical method can perhaps be attempted, as the evidence from the *fullonica* of

Stephanus suggests (I 6, 7). Here, only 3 glass hemispheres, of various colours and sizes (inv. 1498), are part of the composite game set found in the wooden wardrobe, located in the north-east corner of the atrium. However, the find of 42 pebbles and 7 ceramic cut-outs with the rest of the material, which the excavator hypothesized could be «occorrenti forse per un gioco⁶⁶», does not seem a coincidence. This should stimulate reflection on the fact that glass hemispheres were only one of the many types of objects that could be used as gaming items. A good example in this respect is a quotation from Petronius’ *Satyricon* in which *Trimalchio* used “gold and silver coins” instead of “traditional” counters⁶⁷. Therefore, when customary game tools were not available, they could be replaced by any other object, be it of different material, poorer, richer or simply improvised⁶⁸.

66. Della Corte 1912, p. 287.

67. Petron., *Sat.*, 33, *aureos argentosque habebat denarius*; on the “precious” counters, see also Slavazzi 2015, p. 94.

68. This is suggested, for example, by the find of the base of a glass ointment jar reused as a counter in structure I 16, 3 (object n. 6.7 in the catalogue).

After all, it is reasonable to presume that not all glass hemispheres included in game sets were “born” as gaming items. They may have instead acquired a ludic function *in itinere*, during their “life”. This could explain the apparently chaotic aspect of the evidence. This hypothesis may also be confirmed by the fact that most of the object collections presented here consist of glass hemispheres of different colour, which could indicate their progressive agglutination over time⁶⁹. That this discrepancy may be due to objects being missing, added and integrated to game sets over time does not seem unfounded. While this may be discouraging for researchers, it does not seem to have prevented ancient players from their amusements⁷⁰.

In what kind of games could glass hemispheres be used? Answering this question would be much easier if we had the *tabulae lusoriae* used by the inhabitants of Pompeii, but there is no evidence on this. This, of course, does not mean that they did not exist; they were probably made in perishable material and did not survive or, maybe, they were not documented at the time of the excavation. Wood game boards are, in general, extremely rare⁷¹. However, in Pompeii their existence is proved by indirect evidence. Representations of portable *tabulae lusoriae*, probably in wood, come from two city *cauponae*. Two players sitting one in front of the other, and arguing over a contested dice throw, are represented on the fresco of the so-called *caupona* of *Salvius* (VI 14, 36), while holding a game board on their knees. Another fresco (VI 10, 1) illustrates a small portable *tabula*, resting on a three-legged table⁷², around which two opponents incited by two spectators face each other. Epigraphic evidence also might support the existence of game boards. In an electoral poster (whose interpretation requires caution), placed right at the entrance of his house (IX 7, 9), *Popidius Montanus* and other *latrunculari*, probably a group

of friends with whom he used to meet to play the *latrunculi*⁷³, vowed to vote for a certain *Lucius Popidius Ampliatus* for the position of *aedilis*. From a literary point of view, it is crucial the passage from Petronius’ *Satyricon* where *Trimalchio* is reported to use a “wooden chessboard”⁷⁴ to play.

However, the lack of *tabulae lusoriae* forces us to resort to other evidence such as dice⁷⁵ or knucklebones to prove the existence of ludic activities and to try to understand which of them. The association between glass hemispheres and dice can lead us to identify exclusively the *ludus duodecim scripta* (a race game similar to modern backgammon). To play it was necessary two dice and fifteen counters for each player⁷⁶. A game of *ludus duodecim scripta* is most likely represented on the fresco of the aforementioned *caupona* of *Salvius*, where dice and counters (of different colours) are used together⁷⁷.

Another game very well-liked by the Romans, at least among those we know about, was the aforementioned *ludus latruncularum*, which is comparable to the modern draughts game. In this case, the game set included a chessboard-like *tabula* (*tabula latruncularia*) and an equal number of counters (*latrunculi* or *latrones*) for each player. These were, at least theoretically, in different colours, as suggested by the sources⁷⁸, but their number varied depending on how many boxes were on the board. Dice were not necessary, being a strategy game where success was not determined by luck⁷⁹; the aim of the game was to eliminate all the opponent’s counters⁸⁰.

From the archaeological point of view, in the absence of the *tabulae latrunculariae*, the *ludus latruncularum* can only be identified through the

69. On the diachronic distribution of the material, see Cool 2016a, p. 162-164; Cool 2016b, p. 234, tab. 8.1.

70. Varone 2003, p. 193; on the discrepancy of counters’ sets from funerary contexts, albeit from a different cultural and chronological context, see Schädler 2019c, p. 42-43; Ignatiadou 2019, p. 146-150; Graells i Fabregat 2021.

71. Dasen 2018, p. 32, n. 53

72. Giacobello 2015a, p. 40; De Carolis 2007, p. 96-104; *ibidem*, p. 166-168.

73. Della Corte 1912, p. 220; *CIL* IV 7851; Varone - Stefani 2009, p. 413; Giacobello 2015a, p. 40.

74. Petron., *Sat.*, 33, *tabula terebentina*.

75. On the dice game, see Schädler 2013b; Torre 2015, p. 17-18.

76. Schädler 1995; Schädler 2019b, p. 128-129; Schädler 2019c.

77. Giuseppe Fiorelli describes the scene in this way at the moment of the discovery: «disposti in varie fila molti *latruncoli* [pedine] di diversi colori, e cioè gialli, neri, e bianchi» Fiorelli 1876, p. 194.

78. Martial speaks of *calculus hac gemino discolor hoste perit* (“on the other hand, a piece of different colour is lost due to two enemies”); Mart. 14:17.

79. Torre 2015, p. 15-16.

80. Schädler 1994; Schädler 2013a; Schädler 2013c; Torre 2015, p. 18; Lambrugo 2015a, p. 26.

set of counters that accompanied it. This is not possible in the present work. As mentioned above, by methodological choice only associations between different ludic tools have been considered in this paper.

The ludic assemblages found in house I 16, 3 and in the house with workshop I 9, 8 are particular. There, the absence of dice and their varied composition could be related to completely different ludic practices, whose identification is challenging as they are entirely unknown to us.

CONCLUSION

The data presented here suggests we should reflect accurately on the ludic purpose of the glass hemispheres. In some case it is possible to propose a use as counters but in many other it is unlikely. When there are not the conditions to propose a use as counters (mainly due to a too high chromatic variety inside the same set) we can provide other explanations. Especially when associated with dice, hemispheres may not have been used within game boards but more likely as scorekeeper or a kind of fiches⁸¹.

An overview of the material presented here, however, can help identify some trends in the evidence. By combining archaeological data and written sources it seems evident that characteristics such as colour – black or white – and larger

dimensions are often found together in hemispheres used as counters. It is evident that in collections of ludic objects, at least among those analysed in the present work, the largest groups are those consisting of white and black glass hemispheres, which are generally also those larger in size⁸². However, the great variability in the sample analysed, both in terms of objects' size and colour, would warn against using certain approaches uncritically and applying "linear" theoretical categories to the archaeological evidence.

In the present paper, it seemed that the only *ratio* for attributing a ludic function to the glass hemispheres analysed was their belonging to a ludic assemblage. The author is aware that this approach may also lead to an *a priori* exclusion of the material used in ludic practices that falls outside such interpretative categories. It is the same process adopted by archaeologists who want to reconstruct the minimum number of fragmented ceramic vessels based on the analysis of their diagnostic parts.

To conclude, the data here presented underline, once more, the difficulty to approach a class of material as the glass hemispheres. Probably, it is impossible to find parameters to understand their function as a whole. In this perspective, the best way to interpret correctly their functional value is to exploit the data of the context. Only artifact assemblages, case by case, can give us the key to understanding how they were used.

81. Schädler 2002, p. 92.

82. Rustico 2013, p. 254.

TABLE 1 – GAMING SET FROM THE *FULLONICA* OF *STEPHANUS* (I 6,7).

Cat.	Inv.	Object	Material	Dimension	Description
1.1	1469	Small pot	Pottery	h: 12; ø mouth: 5,9; ø feet: 2,4	Pyriiform body. Pottery: 10R 8/3 (<i>pink</i>).
1.2	1496	Knucklebone	Bone	2,8 × 1 × 0,9	/
1.3	1496	Knucklebone	Bone	2,4 × 1,5 × 2	/
1.4	1497	Die (hollow)	Bone	2 × 2 × 1,8	3 and 4 side hollow.
1.5	1507	‘Alexandrianian <i>tessera</i> ’	Bone	/	On <i>recto</i> : boar’s snout. On <i>verso</i> : XIV – ΙΔ.
1.6	1498A	Hemisphere	Glass	ø: 1,6	Plano-convex section. Greenish.
1.7	1498B	Hemisphere	Glass	ø: 1,4	Plano-convex section. Greenish.
1.8	1498D	Hemisphere	Glass	ø: 0,9	Plano-convex section. Blu.
1.9	/	Pebble	Stone	/	Not preserved
1.10	/	Pebble	Stone	/	Not preserved
1.11	/	Pebble	Stone	/	Not preserved
1.12	/	Pebble	Stone	/	Not preserved
1.13	/	Pebble	Stone	/	Not preserved
1.14	/	Pebble	Stone	/	Not preserved
1.15	/	Pebble	Stone	/	Not preserved
1.16	/	Pebble	Stone	/	Not preserved
1.17	/	Pebble	Stone	/	Not preserved
1.18	/	Pebble	Stone	/	Not preserved
1.19	/	Pebble	Stone	/	Not preserved
1.20	/	Pebble	Stone	/	Not preserved
1.21	/	Pebble	Stone	/	Not preserved
1.22	/	Pebble	Stone	/	Not preserved
1.23	/	Pebble	Stone	/	Not preserved
1.24	/	Pebble	Stone	/	Not preserved
1.25	/	Pebble	Stone	/	Not preserved
1.26	/	Pebble	Stone	/	Not preserved
1.27	/	Pebble	Stone	/	Not preserved
1.28	/	Pebble	Stone	/	Not preserved
1.29	/	Pebble	Stone	/	Not preserved
1.30	/	Pebble	Stone	/	Not preserved
1.31	/	Pebble	Stone	/	Not preserved
1.32	/	Pebble	Stone	/	Not preserved
1.33	/	Pebble	Stone	/	Not preserved
1.34	/	Pebble	Stone	/	Not preserved
1.35	/	Pebble	Stone	/	Not preserved
1.36	/	Pebble	Stone	/	Not preserved
1.37	/	Pebble	Stone	/	Not preserved
1.38	/	Pebble	Stone	/	Not preserved
1.39	/	Pebble	Stone	/	Not preserved
1.40	/	Pebble	Stone	/	Not preserved
1.41	/	Pebble	Stone	/	Not preserved
1.42	/	Pebble	Stone	/	Not preserved

Cat.	Inv.	Object	Material	Dimension	Description
1.43	/	Pebble	Stone	/	Not preserved
1.44	/	Pebble	Stone	/	Not preserved
1.45	/	Pebble	Stone	/	Not preserved
1.46	/	Pebble	Stone	/	Not preserved
1.47	/	Pebble	Stone	/	Not preserved
1.48	/	Pebble	Stone	/	Not preserved
1.49	/	Pebble	Stone	/	Not preserved
1.50	/	Pebble	Stone	/	Not preserved
1.51	/	Pottery sherd	Pottery	/	Not preserved
1.52	/	Pottery sherd	Pottery	/	Not preserved
1.53	/	Pottery sherd	Pottery	/	Not preserved
1.54	/	Pottery sherd	Pottery	/	Not preserved
1.55	/	Pottery sherd	Pottery	/	Not preserved
1.56	/	Pottery sherd	Pottery	/	Not preserved
1.57	/	Pottery sherd	Pottery	/	Not preserved

TABLE 2 – GAMING SET FROM THE CASA DELLA STATUETTA INDIANA (I 8, 5).

Cat.	Inv.	Object	Material	Dimension	Description
2.1	7034A	Die (hollow)	Bone	2 × 1,8 × 1,8	3 and 4 side hollow.
2.2	7034B	Die (hollow)	Bone	2,3 × 2 × 1,8	3 and 4 side hollow.
2.3	7035	Hemisphere	Glass	ø: 2	Plano-convex section. Black.
2.4	7035	Hemisphere	Glass	ø: 1,9	Plano-convex section. Black.
2.5	7035	Hemisphere	Glass	ø: 1,9	Plano-convex section. Black.
2.6	7035	Hemisphere	Glass	ø: 1,8	Plano-convex section. Black.
2.7	7035	Hemisphere	Glass	ø: 1,8	Plano-convex section. Black.
2.8	7035	Hemisphere	Glass	ø: 1,8	Plano-convex section. Black.
2.9	7035	Hemisphere	Glass	ø: 1,8	Plano-convex section. Black.
2.10	7035	Hemisphere	Glass	ø: 1,7	Plano-convex section. Black.
2.11	7035	Hemisphere	Glass	ø: 1,7	Plano-convex section. Black.
2.12	7035	Hemisphere	Glass	ø: 1,7	Plano-convex section. Black.
2.13	7035	Hemisphere	Glass	ø: 2	Plano-convex section. White.
2.14	7035	Hemisphere	Glass	ø: 1,7	Plano-convex section. White.
2.15	7035	Hemisphere	Glass	ø: 1,7	Plano-convex section. White.
2.16	7035	Hemisphere	Glass	ø: 1,6	Plano-convex section. White.
2.17	7035	Hemisphere	Glass	ø: 1,6	Plano-convex section. White.
2.18	7035	Hemisphere	Glass	ø: 1,5	Plano-convex section. White.
2.19	7035	Hemisphere	Glass	ø: 1,5	Plano-convex section. White.
2.20	7035	Hemisphere	Glass	ø: 1,5	Plano-convex section. White.
2.21	7035	Hemisphere	Glass	ø: 1,3	Plano-convex section. White.
2.22	7035	Hemisphere	Glass	ø: 1,3	Plano-convex section. White.

TABLE 3 – GAMING SET FROM HOUSE WITH WORKSHOP (I 9, 8).

Cat.	Inv.	Object	Material	Dimension	Description
3.1	9313A	Small pot	Pottery	h: 7,2; ø mouth: 5,9; ø feet: 3	Pottery: 10R 6/8 (light red).
3.2	9313B	Small pot	Pottery	h: 6,1; ø mouth: 5,2; ø feet: 3,1	Pottery: 2.5YR 6/8 (light red).
3.3	9313C	Small pot	Pottery	h: 6,4; ø mouth: 4,2; ø feet: 2,8	Pottery: 10R 6/8 (light red).
3.4	9313D	Small pot	Pottery	h: 6; ø mouth: 5,3; ø feet: 3	Pottery: 10R 6/8 (light red).
3.5	9315A	Small pot	Pottery	h: 8,6; ø mouth: 4,5; ø feet: 2	Pottery: 10R 6/8
3.6	9350	Token	Bone	ø: 2,2	Engraved on the opposite faces: II – B
3.7	9346	Token	Bone	ø: 2,2	Engraved on the opposite faces: III – Γ
3.8	9345	Token	Bone	ø: 2,3	Engraved on the opposite faces: IIII – Δ
3.9	9349	Token	Bone	ø: 2,3	Engraved on the opposite faces: VIII – H
3.10	9348	Token	Bone	ø: 2,2	Engraved on the opposite faces: XIII – ΙΓ
3.11	9360A	Hemisphere	Glass	ø: 1,8	Plano-convex section. Yellowish.
3.12	9360A	Hemisphere	Glass	ø: 0,9	Plano-convex section. Yellowish.
3.13	9360A	Hemisphere	Glass	ø: 1,7	Plano-convex section. Whitish.
3.14	9360A	Hemisphere	Glass	ø: 1,6	Plano-convex section. Whitish.
3.15	9360A	Hemisphere	Glass	ø: 1,3	Plano-convex section. Azure.
3.16	9360A	Hemisphere	Glass	ø: 1	Plano-convex section. Two-tone: Yellow and Blue.
3.17	9315B	Hemisphere	Glass	ø: 1,5	Plano-convex section. Azure.
3.18	9315B	Hemisphere	Glass	ø: 1,5	Plano-convex section. Azure.
3.19	9315B	Hemisphere	Glass	ø: 1,3	Plano-convex section. Azure.
3.20	9315B	Hemisphere	Glass	ø: 0,9	Plano-convex section. Azure.
3.21	9315B	Hemisphere	Glass	ø: 1,5	Plano-convex section. Reddish.
3.22	9315B	Hemisphere	Glass	ø: 1,1	Plano-convex section. White.
3.23	9315B	Hemisphere	Glass	ø: 1,2	Plano-convex section. White.

TABLE 4 – GAMING SET FROM THE CASA DEL MENANDRO (I 10, 4).

Cat.	Inv.	Object	Material	Dimension	Description
4.1	4254	Die	Bone	1,1 × 1,1 × 1,1	/
4.2	4254	Die	Bone	1,2 × 1,2 × 1,2	/
4.3	4258	Hemisphere	Glass	ø: 1,5	Plano-convex section. White.
4.4	4258	Hemisphere	Glass	ø: 1,2	Plano-convex section. White.
4.5	4258	Hemisphere	Glass	ø: 1,1	Plano-convex section. White.
4.6	4258	Hemisphere	Glass	ø: 1,1	Plano-convex section. White. Broken.
4.7	4258	Hemisphere	Glass	ø: 1,4	Plano-convex section. Black.
4.8	4258	Hemisphere	Glass	ø: 1,2	Plano-convex section. Black.
4.9	4258	Hemisphere	Glass	ø: 1,2	Plano-convex section. Black.
4.10	4258	Hemisphere	Glass	ø: 0,8	Plano-convex section. Black.
4.11	4258	Hemisphere	Glass	ø: 1	Plano-convex section. Azure.
4.12	4258	Hemisphere	Glass	ø: 0,8	Plano-convex section. Azure.
4.13	4258	Hemisphere	Glass	ø: 0,8	Plano-convex section. Azure.
4.14	4258	Hemisphere	Glass	ø: 1,3	Plano-convex section. Two-tone: white and azure.

Cat.	Inv.	Object	Material	Dimension	Description
4.15	4258	Hemisphere	Glass	ø: 1,2	Plano-convex section. Two-tone: azure and yellow.
4.16	4258	Hemisphere	Glass	ø: 1,2	Plano-convex section. Blu.
4.17	4258	Hemisphere	Glass	ø: 0,9	Plano-convex section. Blu.
4.18	4258	Hemisphere	Glass	ø: 1	Plano-convex section. Greenish.
4.19	4258	Hemisphere	Glass	ø: 0,6	Plano-convex section. Greenish.
4.20	4258	Hemisphere	Glass	ø: 0,6	Plano-convex section. Greenish.
4.21	4258	Hemisphere	Glass	ø: 1,1	Plano-convex section. Yellowish.
4.22	4258	Hemisphere	Glass	ø: 0,8	Plano-convex section. Yellowish.

TABLE 5 – GAMING SET FROM BUILDING I 14, 11-15.

Cat.	Inv.	Object	Material	Dimension	Description
5.1	12246A	Die	Bone	1,7 × 1,8 × 1,8	/
5.2	12246B	Die	Bone	1,5 × 1,3 × 1,3	/
5.3	12243A	Hemisphere	Glass	ø: 2,1	Plano-convex section. Black.
5.4	12243A	Hemisphere	Glass	ø: 2,1	Plano-convex section. Black.
5.5	12243A	Hemisphere	Glass	ø: 2	Plano-convex section. Black.
5.6	12243A	Hemisphere	Glass	ø: 1,9	Plano-convex section. Black.
5.7	12243A	Hemisphere	Glass	ø: 1,9	Plano-convex section. Black.
5.8	12243A	Hemisphere	Glass	ø: 1,9	Plano-convex section. Black.
5.9	12243A	Hemisphere	Glass	ø: 1,9	Plano-convex section. Black.
5.10	12243A	Hemisphere	Glass	ø: 1,9	Plano-convex section. Black.
5.11	12243A	Hemisphere	Glass	ø: 1,8	Plano-convex section. Black.
5.12	12243A	Hemisphere	Glass	ø: 1,8	Plano-convex section. Black.
5.13	12243A	Hemisphere	Glass	ø: 1,8	Plano-convex section. Black.
5.14	12243A	Hemisphere	Glass	ø: 1,8	Plano-convex section. Black.
5.15	12243A	Hemisphere	Glass	ø: 1,8	Plano-convex section. Black.
5.16	12243A	Hemisphere	Glass	ø: 1,8	Plano-convex section. Black.
5.17	12243A	Hemisphere	Glass	ø: 1,8	Plano-convex section. Black.
5.18	12243A	Hemisphere	Glass	ø: 1,8	Plano-convex section. Black.
5.19	12243A	Hemisphere	Glass	ø: 1,7	Plano-convex section. Black.
5.20	12243A	Hemisphere	Glass	ø: 1,7	Plano-convex section. Black.
5.21	12243A	Hemisphere	Glass	ø: 1,6	Plano-convex section. Black.
5.22	12243A	Hemisphere	Glass	ø: 1,6	Plano-convex section. Black.
5.23	12243A	Hemisphere	Glass	ø: 1,6	Plano-convex section. Black.
5.24	12243A	Hemisphere	Glass	ø: 1,2	Plano-convex section. Black.
5.25	12243A	Hemisphere	Glass	ø: 2,2	Plano-convex section. White.
5.26	12243A	Hemisphere	Glass	ø: 2,2	Plano-convex section. White.
5.27	12243A	Hemisphere	Glass	ø: 2,2	Plano-convex section. White.
5.28	12243A	Hemisphere	Glass	ø: 2	Plano-convex section. White.
5.29	12243A	Hemisphere	Glass	ø: 2	Plano-convex section. White.
5.30	12243A	Hemisphere	Glass	ø: 2	Plano-convex section. White.
5.31	12243A	Hemisphere	Glass	ø: 1,8	Plano-convex section. White.
5.32	12243A	Hemisphere	Glass	ø: 1,8	Plano-convex section. White.

Cat.	Inv.	Object	Material	Dimension	Description
5.33	12243A	Hemisphere	Glass	ø: 1,8	Plano-convex section. White.
5.34	12243A	Hemisphere	Glass	ø: 1,8	Plano-convex section. White.
5.35	12243A	Hemisphere	Glass	ø: 1,8	Plano-convex section. White.
5.36	12243A	Hemisphere	Glass	ø: 1,8	Plano-convex section. White.
5.37	12243A	Hemisphere	Glass	ø: 1,8	Plano-convex section. White.
5.38	12243A	Hemisphere	Glass	ø: 1,7	Plano-convex section. White.
5.39	12243A	Hemisphere	Glass	ø: 1,7	Plano-convex section. White.
5.40	12243A	Hemisphere	Glass	ø: 1,7	Plano-convex section. White.
5.41	12243A	Hemisphere	Glass	ø: 1,7	Plano-convex section. White.
5.42	12243A	Hemisphere	Glass	ø: 1,7	Plano-convex section. White.
5.43	12243A	Hemisphere	Glass	ø: 1,7	Plano-convex section. White.
5.44	12243A	Hemisphere	Glass	ø: 1,7	Plano-convex section. White.
5.45	12243A	Hemisphere	Glass	ø: 1,7	Plano-convex section. White.
5.46	12243A	Hemisphere	Glass	ø: 1,7	Plano-convex section. White.
5.47	12243A	Hemisphere	Glass	ø: 1,7	Plano-convex section. White.
5.48	12243A	Hemisphere	Glass	ø: 1,6	Plano-convex section. White.
5.49	12243A	Hemisphere	Glass	ø: 1,6	Plano-convex section. White.
5.50	12243A	Hemisphere	Glass	ø: 1,6	Plano-convex section. White.
5.51	12243A	Hemisphere	Glass	ø: 1,1	Plano-convex section. White.
5.52	12243A	Hemisphere	Glass	ø: 2	Plano-convex section. Azure.
5.53	12243A	Hemisphere	Glass	ø: 2	Plano-convex section. Azure.
5.54	12243A	Hemisphere	Glass	ø: 2	Plano-convex section. Azure.
5.55	12243A	Hemisphere	Glass	ø: 1,6	Plano-convex section. Azure.
5.56	12243A	Hemisphere	Glass	ø: 1,3	Plano-convex section. Azure.
5.57	12243A	Hemisphere	Glass	ø: 1,2	Plano-convex section. Azure.
5.58	12243A	Hemisphere	Glass	ø: 2	Plano-convex section. Blue.
5.59	12243A	Hemisphere	Glass	ø: 2	Plano-convex section. Blue.
5.60	12243A	Hemisphere	Glass	ø: 1,4	Plano-convex section. Blue.
5.61	12243A	Hemisphere	Glass	ø: 1,8	Plano-convex section. Greenish.
5.62	12243A	Hemisphere	Glass	ø: 1,8	Plano-convex section. Greenish.
5.63	12243A	Hemisphere	Glass	ø: 1,8	Plano-convex section. Greenish.
5.64	12243A	Hemisphere	Glass	ø: 1,6	Plano-convex section. Multi-coloured.
5.65	12243A	Hemisphere	Glass	ø: 1,8	Plano-convex section. Two-tone: greenish and gray.
5.66	12243A	Hemisphere	Glass	ø: 1,2	Plano-convex section. Two-tone: greenish and gray.
5.67	12243A	Hemisphere	Glass	ø: 2	Plano-convex section. Yellowish.
5.68	12243A	Hemisphere	Glass	ø: 1,7	Plano-convex section. Yellowish.
5.69	12243A	Hemisphere	Glass	ø: 1,8	Plano-convex section. Yellowish.
5.70	12243A	Hemisphere	Glass	ø: 0,9	Plano-convex section. Yellowish.
5.71	12243A	Hemisphere	Glass	ø: 0,9	Plano-convex section. Yellowish.
5.72	12243A	Hemisphere	Glass	ø: 0,9	Plano-convex section. Yellowish.
5.73	12243A	Hemisphere	Glass	ø: 1,7	Plano-convex section. Multi-coloured.
5.74	12243A	Hemisphere	Glass	ø: 1,4	Plano-convex section. Two-tone: yellowish and white.

TABLE 6 – GAMING SET FROM HOUSE I 16, 3.

Cat.	Inv.	Object	Material	Dimension	Description
6.1	11881A	Token	Bone	ø: 2,4;	Engraved on the lower face: II.
6.2	11881B	Parallelepiped <i>tessera</i> ⁸³	Bone	5,7 × 1,1 × 0,4	Engraved on the opposite faces: XXV / FACETE.
6.3	11881E	Parallelepiped <i>tessera</i>	Bone	1,5 × 0,9 × 0,2 (preserved)	Engraved on the opposite faces: PE / III ⁸⁴ .
6.4	1881C	Configured <i>tessera</i>	Bone	5,5 × 1,8 × 0,3	Fish shaped. Engraved on the lower face: XII
6.5	11881D	Configured <i>tessera</i>	Bone	4,4 × 2,1 × 0,6	Plucked goose shaped. Engraved on the lower face: XI.
6.6	11876A	Hemisphere	Glass	ø: 1,8	Plano-convex section. Azure.
6.7	11876A	Hemisphere (hallow)	Glass	ø: 1,7	Plano-convex section. Azure.
6.8	11876A	Hemisphere	Glass	ø: 1,8	Plano-convex section. White.
6.9	11876A	Hemisphere	Glass	ø: 1,7	Plano-convex section. White.
6.10	11876A	Hemisphere	Glass	ø: 1,5	Plano-convex section. White.
6.11	11876A	Hemisphere	Glass	ø: 1,4	Plano-convex section. Black.
6.12	11876A	Hemisphere	Glass	ø: 1,2	Plano-convex section. Yellowish.
6.13	11876A	Hemisphere	Glass	ø: 1	Plano-convex section. Yellowish.
6.14	11876F	Lenticular object ⁸⁵	Glass (?)	ø: 2,1	Vitrified surface. White.

TABLE 7 – GAMING SET FROM THE VILLA DEI MISTERI.

Cat.	Inv.	Object	Material	Dimension	Description
7.1	4481A	Small pot	Pottery	h: 10,1; ø mouth: 4,8	Pottery: 2.5YR 7/6 (light reddish brown).
7.2	4481B	Small pot	Pottery	h: 10,1; ø mouth: 5,3	Pottery: 2.5YR 7/6 (light reddish brown).
7.3	4460A	Die	Bone	1,3 × 1,3 × 1,3	/
7.4	4460B	Die	Bone	1,3 × 1,3 × 1,3	/
7.5	4461A	Hemisphere	Glass	ø: 1,9	Plano-convex section. Black.
7.6	4461A	Hemisphere	Glass	ø: 1,8	Plano-convex section. Black.
7.7	4461A	Hemisphere	Glass	ø: 1,8	Plano-convex section. Black.
7.8	4461A	Hemisphere	Glass	ø: 1,8	Plano-convex section. Black.
7.9	4461A	Hemisphere	Glass	ø: 1,8	Plano-convex section. Black.
7.10	4461A	Hemisphere	Glass	ø: 1,6	Plano-convex section. Black.
7.11	4461A	Hemisphere	Glass	ø: 1,5	Plano-convex section. Black.
7.12	4461A	Hemisphere	Glass	ø: 1,5	Plano-convex section. Black.
7.13	4461A	Hemisphere	Glass	ø: 1,5	Plano-convex section. Black.
7.14	4461A	Hemisphere	Glass	ø: 1,4	Plano-convex section. Black. Broken.
7.15	4461A	Hemisphere	Glass	ø: 1,4	Plano-convex section. Black.
7.16	4461A	Hemisphere	Glass	ø: 1,4	Plano-convex section. Black.
7.17	4461A	Hemisphere	Glass	ø: 1,4	Plano-convex section. Black.

83. *Riscoprire Pompei* 1993, p. 202, n. 89 (M.R. Borriello); Stefani, Borgongino 2010, p. 93; Guàrdia i Llorens 2017, 182, fig. 5; Baratta 2019, 148-149, n. 69.

84. Probably, it is possible read on this *tessera* PE[RIVRE] and the number III[I]; on the association between PERIVRE and IIII on the parallelepiped *tesserae* see Rodríguez Martín 2016, 214, fig. 6; Baratta 2019, 55.

85. «Frammento di vetro o di cristallo dalla superficie molata», Stefani – Borgongino 2010, p. 93.

Cat.	Inv.	Object	Material	Dimension	Description
7.18	4461A	Hemisphere	Glass	ø: 1,4	Plano-convex section. Black.
7.19	4461B	Hemisphere	Glass	ø: 1,8	Plano-convex section. White.
7.20	4461B	Hemisphere	Glass	ø: 1,8	Plano-convex section. White.
7.21	4461B	Hemisphere	Glass	ø: 1,8	Plano-convex section. White.
7.22	4461B	Hemisphere	Glass	ø: 1,8	Plano-convex section. White.
7.23	4461B	Hemisphere	Glass	ø: 1,8	Plano-convex section. White (burnished).
7.24	4461B	Hemisphere	Glass	ø: 1,8	Plano-convex section. White.
7.25	4461B	Hemisphere	Glass	ø: 1,7	Plano-convex section. White.
7.26	4461B	Hemisphere	Glass	ø: 1,7	Plano-convex section. White.
7.27	4461B	Hemisphere	Glass	ø: 1,7	Plano-convex section. White (burnished).
7.28	4461B	Hemisphere	Glass	ø: 1,6	Plano-convex section. White (burnished).
7.29	4461B	Hemisphere	Glass	ø: 1,5	Plano-convex section. White (burnished).
7.30	4461B	Hemisphere	Glass	ø: 1,5	Plano-convex section. White.
7.31	4461B	Hemisphere	Glass	ø: 1,5	Plano-convex section. White.
7.32	4461B	Hemisphere	Glass	ø: 1,4	Plano-convex section. White.
7.33	4461B	Hemisphere	Glass	ø: 1,3	Plano-convex section. White.
7.34	4461B	Hemisphere	Glass	ø: 1,3	Plano-convex section. White.
7.35	4461B	Hemisphere	Glass	ø: 0,9	Plano-convex section. White.
7.36	4461B	Hemisphere	Glass	ø: 0,8	Plano-convex section. White.
7.37	4461C	Hemisphere	Glass	ø: 1,9	Plano-convex section. Blue.
7.38	4461C	Hemisphere	Glass	ø: 1,8	Plano-convex section. Blue. Broken.
7.39	4461C	Hemisphere	Glass	ø: 1,6	Plano-convex section. Blue. Broken.
7.40	4461C	Hemisphere	Glass	ø: 1,6	Plano-convex section. Blue.
7.41	4461D	Hemisphere	Glass	ø: 2,2	Plano-convex section. Green.
7.42	4461D	Hemisphere	Glass	ø: 1,5	Plano-convex section. Green.
7.43	4461D	Hemisphere	Glass	ø: 2	Plano-convex section. Azure.
7.44	4461	Hemisphere	Glass	ø: /	Not preserved.

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