

Iron Age glass eye beads in southern Portugal (7th–2nd centuries BCE)

Cuentas de vidrio oculadas de la Edad del Hierro del sur de Portugal (ss. VII – II a. n. e.)

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Abstract: Eye beads are among the most characteristic and recognizable types of Pre-Roman glass beads in the Mediterranean and beyond. However, their diversity and their cultural and chronological significance are often overlooked. This is the result of the summary and incomplete publication of many examples, but also of classification systems which, while valid, have failed to explore their informative potential. Based on a survey of Iron Age eye beads from southern Portugal, this study proposes an explicit and open typological system. The data compiled suggests that the decorative patterns of the eye beads in the study area have a chrono-cultural significance which might point to changes in the supply chains as well as in the connectivity patterns of local communities between the Early and the Late Iron Age.

Keywords: Iron Age; ancient glass; adornment objects; Mediterranean trade; consumption.

Resumen: *Las cuentas oculadas son uno de los tipos más característicos y reconocibles de cuentas de vidrio prerromanas en el Mediterráneo y más allá. Sin embargo, su diversidad, y su significado cultural y cronológico no siempre son debidamente reconocidos. Ello es resultado de la publicación somera e incompleta de muchos ejemplares, pero también de la adopción de sistemas clasificatorios que, a pesar de válidos, no dan cuenta del potencial informativo de estas piezas. Con base en el estudio de las cuentas oculadas de la Edad del Hierro del sur de Portugal, este trabajo propone un sistema de clasificación explícito y abierto. Los datos recopilados sugieren que los patrones decorativos de las cuentas oculadas en el área de estudio tienen un significado crono-cultural, que podría señalar cambios en las cadenas de suministro y los patrones de conectividad de las comunidades locales entre la I y la II Edad del Hierro.*

Palabras clave: *Edad del Hierro; vidrio antiguo; abalorios; comercio mediterráneo; consumo.*

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1. SETTING THE STAGE: SOME PRELIMINARY REMARKS ON THE STUDY OF GLASS EYE BEADS

Eye beads are one of the most characteristic components of the Pre-Roman glass repertoires of both Europe and the Mediterranean. The practice of decorating glass beads with spots and, later, increasingly complex eye-like motifs developed in the Near East, particularly in Egypt, shortly after the beginning of systematic glass production around the mid-2nd millennium BCE (Spaer, 1985). From there the model progressively spread to other areas. Their manufacture in European Late Bronze Age glass-making workshops is well attested (i.e., Fratresina, Rovigo, Italy; Bellintani and Stefan, 2009, tab. 3). While these early eye beads achieved some dissemination in Central Europe (Bellintani, 2014, fig. 4), the model would only reach its widest diffusion during the Iron Age. In fact, the concept of eye bead survived the collapse of the 2nd millennium glass tradition(s) relatively unscathed; it appeared again in full force during the following millennium, spreading from the Near East to the Mediterranean, primarily through Phoenician traders and the crafts centres they established across the Inner Sea (Barthélemy, 1995). Trade with these and other Mediterranean centres was likely responsible for the (re) introduction of the concept of eye beads to other areas of Europe, where local craftspeople take it up, producing eye beads in accordance with their own skills, tastes, and traditions (Venclová, 1983; Kunter, 1995). Thus, eye beads became nearly ubiquitous from the Levant (Spaer, 2001, pp. 77-98; Golani, 2013, pp. 203-206 and 280-281), Greece (Haevernick, 1974a) and the Black Sea (Aleksejeva, 1975, 1978) to Italy (Koch, 2011, pp. 75-76) and the Central and Western Mediterranean islands (Uberti, 1993; Ruano Ruiz, 1996; Giammelaro, 2008; de Nicolás Mascaró, 2014; García González *et al.*, 2021), and from Poland (Purowski, 2012, figs. 16-17) and Central Europe (Haevernick, 1960, 1974a, 1974b; Venclová, 1983; 1990, pls. 8-9; Kunter, 1995; Wagner, 2006, taf. 32-33) to France (Feugère, 1992, pp. 154-155; Rolland, 2021, pp. 357-358) and Great Britain (Guido, 1978, pl. I; Foulds, 2017, p. 266). The Iberian Peninsula is, of course, no exception (Ruano Ruiz, 1995, 2000; Gomes, 2020a, pp. 96-102; 2021a; González Hernández and López Jiménez, 2021). Yet, the data from Portugal and Spain have rarely been incorporated into wider discussions of this type of bead.

In this regard, it should be noted that such discussions are perhaps less common than warranted by the extensive distribution and complex configuration of the eye bead family. Apart from the very early synthesis produced by Gustavus Eisen (1916), monographic studies are scarce (for another early approach, see Beck, 2006 [1928], pp. 62-65). Natalie Venclová's work (1983, 1990) on the Central European material set the tone for a more contemporary debate that would be developed shortly after by Kari Kunter in a dedicated volume of the *Glasperlen der vorrömischen Eisenzeit* series (Kunter, 1995).

For the Mediterranean, a short note by Maud Spaer (1985; see also Spaer, 2001, pp. 77-98) may be considered as the starting point for a renewed discussion of eye beads, although its impact was limited (see also Golani, 2013, pp. 203-206 and 280-281). Significantly, the only other studies exclusively focussed on eye beads from southern Europe hail from the Iberian Peninsula. Encarnación Ruano Ruiz's foundational work on the material from El Cigarralejo (Mula, Murcia; Ruano Ruiz, 1995) highlighted for the first time the interest in their study and attempted to incorporate the Iberian samples into broader discussions (Ruano Ruiz, 1996, 2000). Works on specific assemblages followed (Jiménez Ávila, 2003; Gomes, 2020a, pp. 96-102; 2021a). More recently, the review by González Hernández and López Jiménez (2021) on the Northern *Meseta* region not only stresses the distribution of eye beads well beyond the limits of Mediterranean Iberia, but also considers the complexity of this group of adornments and their diffusion.

Despite the evident progress that has been made in documenting the variety of beads from the Iberian Far West, too often excavation reports include only a cursory reference to eye beads as if this label was self-explanatory and gave an accurate sense of its specific type.

This may be the result of the classification strategies adopted in the most readily available syntheses on this type of beads in the Iberian Peninsula, which have failed to convincingly explore their full potential as chronological, cultural and trade markers. Following Eisen (1916), most attempts at classification have selected the structure and disposition of the decorative eyes as the main (and even sole) sorting criteria (Ruano Ruiz, 1995; 1996, pp. 40-41; 2000, p. 30 and tab. 1), without paying attention to other aspects such as the chromatic scheme, the overall decorative effect (Venclová, 1990; Kunter, 1995, pp. 53-85), the quality of the glass or the execution technique. While acceptable in and of itself, this methodological approach has led to grouping as discrete types beads which look very different from one another (e.g., González Hernández and López Jiménez, 2021, figs. 5 and especially 6 and 7).

Admittedly, the structure and distribution of the decorative eyes are important descriptors. Yet, taken in isolation, they do not say much about different traditions of production, workshops and changing patterns of dispersal and consumption. In fact, the entire family of Mediterranean and European eye beads, with its huge geographic dissemination and internal diversity, sports a relatively limited number of combinations of eye structures and distributions (Venclová, 1983; Spaer, 1985; Kunter, 1995), dictated both by the original templates from which they derive and the technical possibilities afforded by such small objects, as well as by the glass working techniques available.

On this basis, the aims of this study are threefold. Firstly, to present a comprehensive overview of Iron Age eye beads from southern Portugal. Secondly, to establish a systematic typological classification, combining the descriptors mentioned above and expanding on

the open system created for the glass bead assemblage of Fonte Velha de Bensafrim (Lagos, Portugal; Gomes, 2020a). Finally, to examine the evolution of eye beads in southern Portugal in order to assess their role in regional Iron Age glass assemblages.

2. EYE BEADS IN THE SOUTHERN PORTUGUESE IRON AGE: A TYPOLOGICAL SURVEY

2.1. Defining and describing eye beads: a methodological proposal

Before delving into the discussion of the material, it is worth to shortly define what is meant by eye bead in this context, as the comparative heterogeneity of this family of beads has long been recognized (Eisen, 1916). Besides, the limits between eye beads and other, possibly related groups, such as spotted beads and beads decorated with spiral motifs, are sometimes blurry (Eisen, 1916; Venclová, 1983, pp. 11–12).

Almost all eye beads in southern Portugal belong to the group of stratified eye beads defined by Eisen (1916, pp. 5–6).¹ Such technical and productive homogeneity facilitates their analysis. The macroscopic observation of the material considered here and especially of the collections which were studied first-hand, namely, Fonte Velha de Bensafrim, Corte de Père Jacques (Aljezur), Fonte Santa (Ourique) and Cabeça de Vaia Monte (Monforte), suggests that the eye decorations were produced by applying successive layers of differently coloured glass to achieve the desired effect. This is perhaps the most common technique used for the production of eye beads in the Mediterranean and in Europe throughout the 1st millennium BCE (Venclová, 1983; Ruano Ruiz, 1995; Kunter, 1995). Nonetheless, a few examples which have lost the eye decoration through post-depositional degradation allow the observation of the smooth negative left behind that could also be compatible with the practice of producing the stratified eye decorations separately before applying them to the matrix (Eisen, 1916, p. 5; Ruano Ruiz, 1995, pp. 262–263). Such pieces do however appear together in the same assemblages with beads fashioned out of the most typical technique; also, in the right conditions the negatives left by eye decorations produced by either of these techniques may be virtually indistinguishable.

In addition, eye beads from the assemblages under study co-exist, sometimes in the same contexts and even in the same composite adornment elements (necklaces, bracelets, etc.), with other types of beads. Therefore, an integrated typological approach to glass bead as-

¹ Some cases of eye decorations produced by trailing have been reported recently but these remain rare and, for the time being, very localized (see Lončarić, V. *Black-Appearing Iron Age Glass – A case study from the Iberian Peninsula*, 49–50. MA Thesis presented to the University of Évora, 2022. Unpublished).

semblages as a whole is required to understand both the specificities of the distribution, consumption and use of eye beads and the commonalities they share with other bead groups. Such an approach is beyond the scope of this contribution that instead offers a compromise, presenting the specific types which can be subsumed under the category of eye beads within a broader glass bead typology currently under construction (Fig. 1; Tab. 1).

Group 1: Annular Beads

Type 1.b: Polychrome Annular Beads

Variant 1.b.1: Annular eye beads

Sub-Variant 1.b.1.a: Turquoise blue matrix with white and dark blue eyes

Sub-Variant 1.b.1.b: ‘Black’ matrix with white and ‘black’ eyes

Group 2: Spherical beads

Type 2.c: Polychrome spherical beads

Variant 2.c.1: Simple spherical eye beads

Sub-Variant 2.c.1.a: Turquoise blue matrix with white and dark blue eyes

Sub-Variant 2.c.1.b: ‘Black’ matrix with white and ‘black’ eyes

Sub-Variant 2.c.1.c: ‘Black’ matrix with white, ‘black’ and dark blue eyes

Sub-Variant 2.c.1.d: Dark blue matrix with white and dark blue eyes

Sub-Variant 2.c.1.e: Dark blue matrix with white, yellow, and dark blue eyes

Sub-Variant 2.c.1.f: Dark blue matrix with white, yellow, turquoise blue and dark blue eyes

Sub-Variant 2.c.1.g: Turquoise blue matrix with yellow and dark blue eyes

Sub-Variant 2.c.1.h: Light blue matrix with white, yellow, and dark blue eyes

Sub-Variant 2.c.1.i: ‘Black’ matrix with white, yellow, and ‘black’ eyes

Sub-Variant 2.c.1.j: Yellow matrix with white and dark blue eyes

Variant 2.c.2: Double/ geminated spherical eye beads

Sub-Variant 2.c.2.a: Turquoise blue matrix with white and dark blue eyes

Sub-Variant 2.c.2.b: Dark blue matrix with white and dark blue eyes

Variant 2.c.3: Spherical eye beads with applied spherules

Sub-Variant 2.c.3.a: Turquoise blue matrix with white and dark blue eyes and applied yellow spherules

Sub-Variant 2.c.3.b: ‘Black’ matrix with white and ‘black’ eyes and applied yellow spherules

Sub-Variant 2.c.3.c: ‘Black’ matrix with white and ‘black’ composite eyes and applied yellow spherules

Sub-Variant 2.c.3.d: Dark blue matrix with white and dark blue eyes and applied yellow spherules

Tab. 1. Typological tree showing the proposed classification system for eye beads (see Fig. 1).

1.b		2.c						
1.b.1		2.c.1						
1.b.1.a	1.b.1.b	2.c.1.a	2.c.1.b	2.c.1.c	2.c.1.d	2.c.1.e	2.c.1.f	2.c.1.g
								
2.c								
2.c.1			2.c.2		2.c.3			
2.c.1.h	2.c.1.i	2.c.1.j	2.c.2.a	2.c.2.b	2.c.3.a	2.c.3.b	2.c.3.c	2.c.3.d
								

Fig. 1. Typology of eye beads in Iron Age southern Portugal (various scales). Photos by the author, except 2.c.1.f (after Cardoso and Encarnaç o, 2013), 2.c.1.g and 2.c.2.b (after Estrela, 2019), 2.c.1.j (after Gomes, 2012) and 2.c.3.a (after Arruda *et al.*, 2017). Sub-Variant 2.c.1.j is shaded as it has not yet been documented here.

The proposed classification is based on four basic hierarchical criteria that can be applied on a flexible basis:

(1) the overall shape of the bead is used to establish *Groups* differentiated with an Arabic numeral (e.g., Group 1 = annular beads);

(2) the monochrome or polychrome nature of the bead, which can be seen as both a decorative and a technological criterion, is used to establish *Types* designated by lower case letters (e.g., Group 1.a = monochrome annular beads);

(3a) for monochrome beads, the colour is used to establish *Variants* denoted, once again, by an Arabic numeral (e.g., Variant 1.a.1 = cobalt blue monochrome annular beads);

(3b) for polychrome beads, the nature and structure of the decoration is used to establish the aforementioned *Variants* (e.g., 1.b.1 = annular eye beads);

(4) finally, for polychrome/ decorated beads, and particularly eye beads, the chromatic scheme is used as the fundamental criterion to establish *Sub-Variants*, again designated by lower case letters (e.g., 1.b.1.a = annular eye beads with turquoise blue matrix and stratified white and cobalt blue eyes).

For eye beads the descriptive criteria established by Eisen (1916) and subsequently reproduced by more recent studies (see above) have been added. They are not enough to build a typology geared towards the chrono-cultural analysis of this material, but they are still important to achieve a standardized and comparable data base for the integrated study of eye beads.

In particular, it is useful to note whether the eye decorations are mono- or pluri-stratified. In the first

case, they are composed of a single layer of a contrasting colour glass forming the sclera of the eye and another single layer forming the pupil. In the second case, this alternating scheme is repeated more than once. For descriptive purposes, it is also important to record how the eye decorations are distributed across the bead. Mostly the notation system proposed by Ruano Ruiz (1995, fig. 4, after Eisen, 1916) can be used, with some additions when necessary (Fig. 2).

2.2. Typological survey of southern Portuguese eye beads

A survey of Iron Age glass assemblages in southern Portugal reveals a substantial number of eye beads distributed across 40 sites dating from the mid- to late 7th and especially the 6th to the 3rd/ 2nd centuries BCE. Although typological classifications and detailed quantifications are missing for some of the assemblages, the data available have been listed in Table 2. Two broad morphological groups are identified: annular beads (Group 1) and spherical beads (Group 2); these can further be sub-divided into multiple Variants and Sub-Variants (Table 1).

2.2.1. Group 1 – Annular Eye Beads

Annular eye beads have been classified as Type 1.b (Gomes, 2020a, fig. 6). So far, only plain (i.e., without other types of added decoration) annular eye beads have been documented. They comprise Variant 1.b.1.

			1.b.1.a	1.b.1.b	2.c.1.a	2.c.1.b	2.c.1.c	2.c.1.d	2.c.1.e	2.c.1.f	2.c.1.g	2.c.1.h	2.c.1.i	2.c.2.a	2.c.2.b	2.c.3.a	2.c.3.b	2.c.3.c	2.c.3.d	Ind.	% Eye beads over total
1	Fonte Velha de Bensafrim	Lagos	3	2	27	37								2				3			25
2	Hortinha	Lagos			1																<i>100</i>
3	Corte de Père Jacques	Aljezur				4	2														10.2
4	Gregórios	Silves				16														1	<i>100</i>
5	Ameixial	Loulé				2															<i>66.6</i>
6	Alagoas	Loulé				1															-
7	Mesas do Castelinho	Almodôvar									1				1						<i>100</i>
8	Fonte Santa	Ourique	2	3	27	48								2			1				52.5
9	Chada	Ourique				2															<i>100</i>
10	Mealha Nova	Ourique			3	30							1								32.4
11	Herdade do Pêgo	Ourique				2															<i>20</i>
12	Favela Nova	Ourique				1															<i>25</i>
13	Fernão Vaz	Ourique				28?															<i>100</i>
14	Cerro do Ouro	Ourique				1?															-
15	Nora Velha	Aljustrel			5	1															<i>54.6</i>
16	Corte Margarida	Aljustrel																	1		-
17	Pardieiro	Odemira				1															-
18	Almograve	Odemira				15															<i>93.8</i>
19	Galeado	Odemira			3																<i>100</i>
20	Herdade do Gaio	Sines	2?		2?	16?	3?														10?
21	Olival do Senhor dos Mártires	Alcácer do Sal			3																<i>100</i>
22	Tera	Mora			1																-
23	Vinha das Calças 4	Beja	1		6	55									2						8.1
24	Monte do Bolor 1-2	Beja		1		1															-
25	Quinta do Estácio 6	Beja			1																-
26	Quinta do Castelo 5	Beja				4															<i>18.2</i>
27	Palhais	Beja																		1	-
28	Fareleira 2	Vidigueira				2															<i>100</i>
29	Poço Novo 1	Vidigueira				1															-
30	Esfola	Beja				7?															-
31	Belhõa	Reguengos de Monsaraz			1																<i>100</i>
32	Cabeça de Vaiamonte	Monforte			7		14	1			1								1		2.6
33	Lapa da Cova	Sesimbra			1																-
34	Quinta do Almaraz	Almada			2	1	1	1												2	<i>38.9</i>
35	Freiria	Cascais							1												<i>40</i>
36	Moinho da Atalaia	Amadora			1																<i>100</i>
37	Moinho da Mariquitas	Torres Vedras											1?								-
38	Moinhos Velhos	Torres Vedras											1								-
39	Porto do Sabugueiro	Salv. de Magos					8														5.4
40	Alcáçova de Santarém	Santarém																	1		-

Tab. 2. Distribution of the different eye bead Variants and Sub-Variants in southern Portugal and their representation in each assemblage (% in bold = large assemblages with good quantitative data; % in italic = small assemblages, not statistically significant; no % = without quantification data).

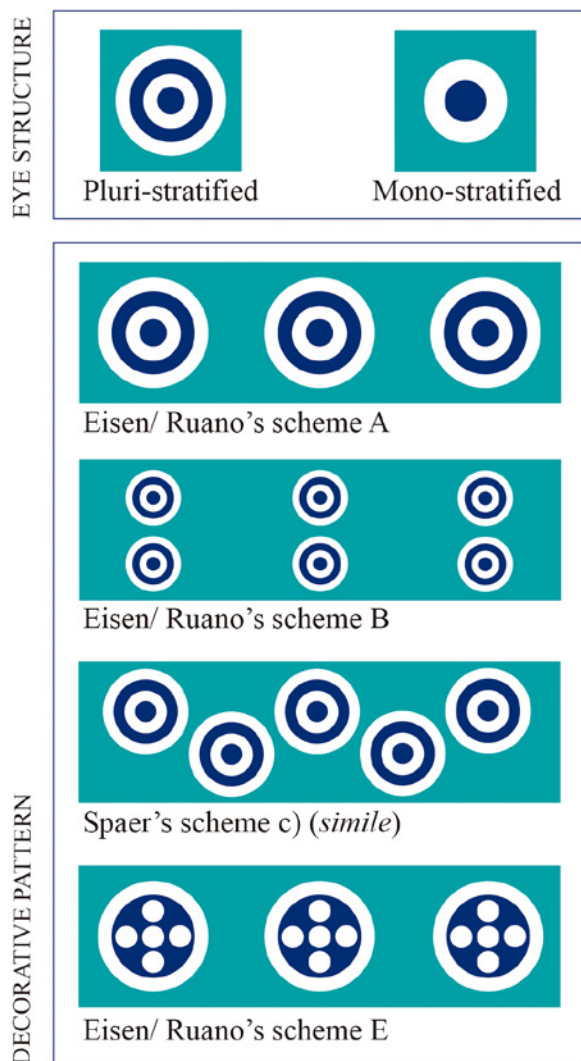


Fig. 2. Schematic representation of the basic types of eye structure and decorative patterns (named after Eisen, 1916; Spaer, 1985; and Ruano Ruiz, 1995) documented in southern Portuguese Iron Age eye beads.

Two Sub-Variants are noted: beads with a turquoise blue matrix and white and cobalt blue eye decorations (1.b.1.a) and beads with a black-appearing (very dark green)² matrix and white and black eye decorations (1.b.1.b). The former, while far less common than their spherical counterparts (see below, Sub-Variant 2.c.1.a), are well documented in the Early Iron Age necropolis of Vinha das Calças 4 (Beja; Gomes, 2015), dated to the second half of the 6th century BCE (cf. Arruda *et al.*, 2017), as well as in the necropolises of Fonte Velha de Bensafrim (Gomes, 2020a, pp. 89-90) (Fig. 3: 1-3), Fonte Santa (Fig. 4: 1-2) and Herdade do Gaio (Sines; Costa, 1967, 1972), all dated between the 6th and the 5th centuries BCE.

Sub-variant 1.b.1.a beads are usually small, mostly falling around 0.7 cm in diameter, but occasionally

reaching 0.95 cm. The eye decorations are fairly homogeneous and always pluri-stratified. The decoration consists of single eyes distributed linearly along the transversal axis of the bead (Ruano Ruiz's pattern A; 1995, fig. 4; 2000, tab. 1; after Eisen, 1916, p. 13).

Sub-Variant 1.b.1.b beads are also rarer than their spherical counterparts (see below, Sub-Variant 2.c.1.b). They have been documented in three sites: Fonte Velha de Bensafrim (Gomes, 2020a, p. 90) (Fig. 3: 4-5), Fonte Santa (Gomes, 2021a, fig. 4) (Fig. 5: 4-5, 12) and Monte do Bolor 1-2 (Beja; Soares *et al.*, 2017, fig. 18). They can generally be dated to the 6th century BCE.

These beads are usually small to medium in size, with diameters ranging from 0.9 to 1.2 cm. The structure of their decoration also follows Eisen/ Ruano's pattern A, but it is more complex than their blue counterparts as both pluri- and mono-stratified beads occur. Both schemes co-exist in the same context – and likely in the same necklace – in Monte do Bolor 1-2 (Soares *et al.*, 2017, fig. 18), but also possibly in Fonte Santa (Fig. 5). This lends some support to the idea that the structure and scheme of eye decorations, while significant from a technical point of view, do not necessarily hold a specific chrono-cultural significance and cannot therefore, except in some rare cases, be used as the basic criteria for typological classification.

2.2.2. Group 2 – Spherical Eye Beads

Spherical eye beads, including pieces ranging from a toroid to a near-spherical morphology, dominate Portuguese Iron Age glass bead assemblages. Here they are categorized as Type 2.c, with several Variants and Sub-Variants.

Variant 2.c.1, comprising plain spherical beads, is the most common. According to their chromatic scheme there is a wide range of Sub-Variants, among which two stand out: turquoise beads with white and cobalt blue eye decorations (2.c.1.a) and black beads with white and black eyes (2.c.1.b).

Sub-Variant 2.c.1.a is one of the most common and widespread types of eye beads in southern Portugal and beyond. Examples hail from necropolises in the Algarve – Fonte Velha de Bensafrim (Gomes, 2020a, pp. 96-99) (Fig. 3: 6-32) and Hortinha (Lagos; Gomes, 2021b, fig. 8) (Fig. 6: 1) – as well as in Alentejo – Herdade do Gaio (Costa, 1967, 1972), Fonte Santa (Fig. 4: 3-29), Mealha Nova (Ourique; Dias *et al.*, 1970, p. 219) and possibly Cerro do Ouro (Ourique; Gomes, 2022), Nora Velha (Aljustrel; Soares and Martins, 2013, fig. 5), Vinha das Calças 4 (Gomes, 2015) and Tera (Mora; Mataloto, 2010-2011, p. 92). All these funerary sites were in use between the 6th and the 5th centuries BCE.

Eye beads from the necropolises of Galeado (Odemira; Beirão and Gomes, 1983) (Fig. 6: 8-10) and especially Belhõa (Reguengos de Monsaraz; Gomes, 1997, fig. 16) could be slightly later in date, as both sites were occupied in the transition to the Late Iron

² Hereafter referred as 'black'.

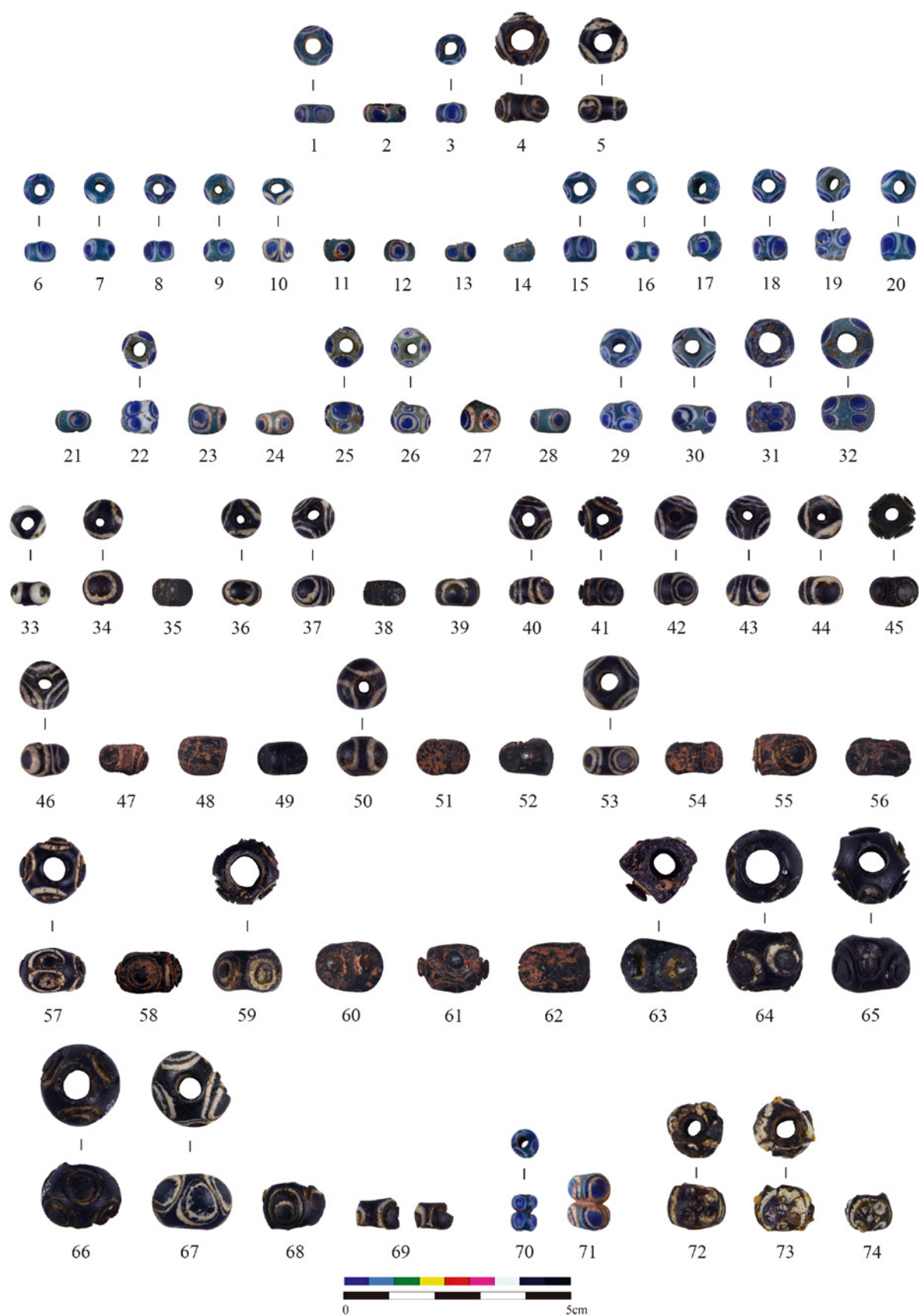


Fig. 3. Eye beads from Fonte Velha de Bensafirim (Lagos). Photos by the author (Gomes, 2020a).

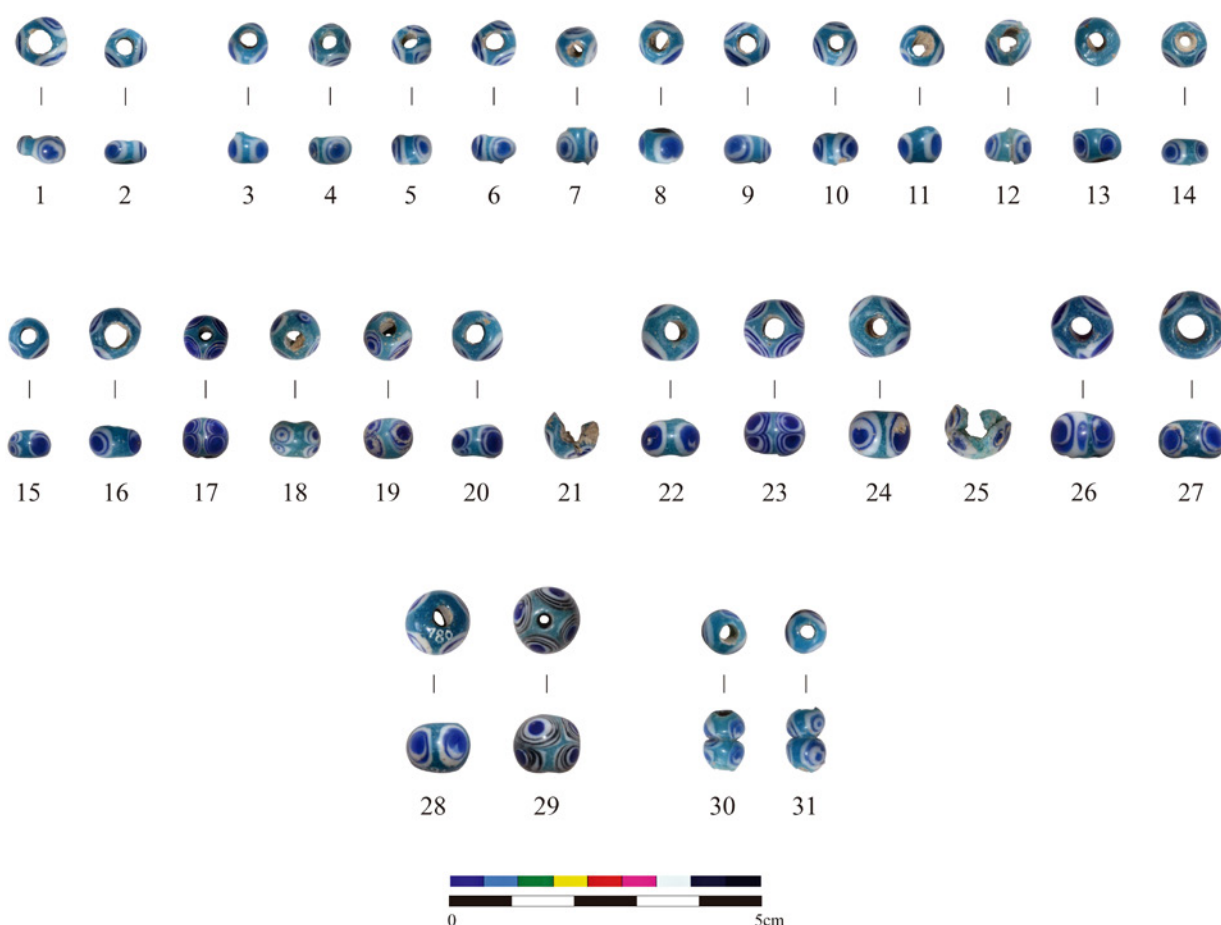


Fig. 4. Eye beads from Fonte Santa (Ourique) (1): turquoise blue beads (Sub-Variants 1.b.1.a, 2.c.1.a and 2.c.2.a). Photos by the author.

Age (late 5th – early 4th century BCE). The date of the decontextualized examples found in the necropolis of Olival do Senhor dos Mártires (Alcácer do Sal; Gomes, 2020b) (Fig. 6: 11-13) is unclear because this funerary site was used for a long period of time between the 7th and the 2nd century BCE.

Non-funerary examples are known from the cave-sanctuary of Lapa da Cova (Sesimbra; Jiménez Ávila *et al.*, 2017) and from Quinta do Almaraz (Almada; Filardi, 2011, fig. 1.6.1). Both sites have well documented Early Iron Age occupations, although the exact context of the beads is unclear. Also, they have been documented in the settlement of Moinho da Atalaia Oeste (Amadora; Sousa, 2014, p. 235), dated between the 5th and the early 4th century BCE. Further examples from Cabeça de Vaiamonte (Fig. 7: 1-7) (cf. Fabião, 2001) are likely later in date. The bulk of the Pre-Roman material from this site dates to the Late Iron Age (4th – 2nd centuries BCE).

Interestingly, Cabeça de Vaiamonte has yielded both classic and late examples of Sub-Variant 2.c.1.a beads. The former are virtually indistinguishable from the Early Iron Age beads listed above while the latter can be clearly discriminated due to the quality and

appearance of the glass, as well as the poor quality of execution of the decoration (Fig. 7: 6-7). These are a late version of Sub-Variant 2.c.1.a, characteristic of the Late Iron Age, and therefore different from the earlier material encompassed in this Sub-Variant.

Morphometric analyses of Sub-Variant 2.c.1.a beads are rare. However, the data compiled from the assemblages studied first-hand suggest that, while somewhat variable, these beads are homogeneously distributed along a size range between 0.65 and 1.3 cm without forming any discrete size modules.

The structure of the eye decorations of the vast majority of documented pieces shows a pluri-stratified construction. Among the earlier material, three beads from Fonte Santa display a mono-stratified structure (Fig. 4: 3, 8 and 11), while one example of a late bead from Cabeça de Vaiamonte has such a structure, albeit with a peculiar, somewhat unbalanced construction (Fig. 7: 7).

The decorative schemes are more diverse. Among the well characterized assemblages, both Eisen/ Ruano's patterns A and B (i.e., double eyes disposed linearly along the transversal axis of the bead) are very common, and they often co-exist in the same sites and



Fig. 5. Eye beads from Fonte Santa (Ourique) (2): black appearing beads (Sub-variants 1.b.1.b, 2.c.1.b and 2.c.3.b) (after Gomes, 2021a). Photos by the author.

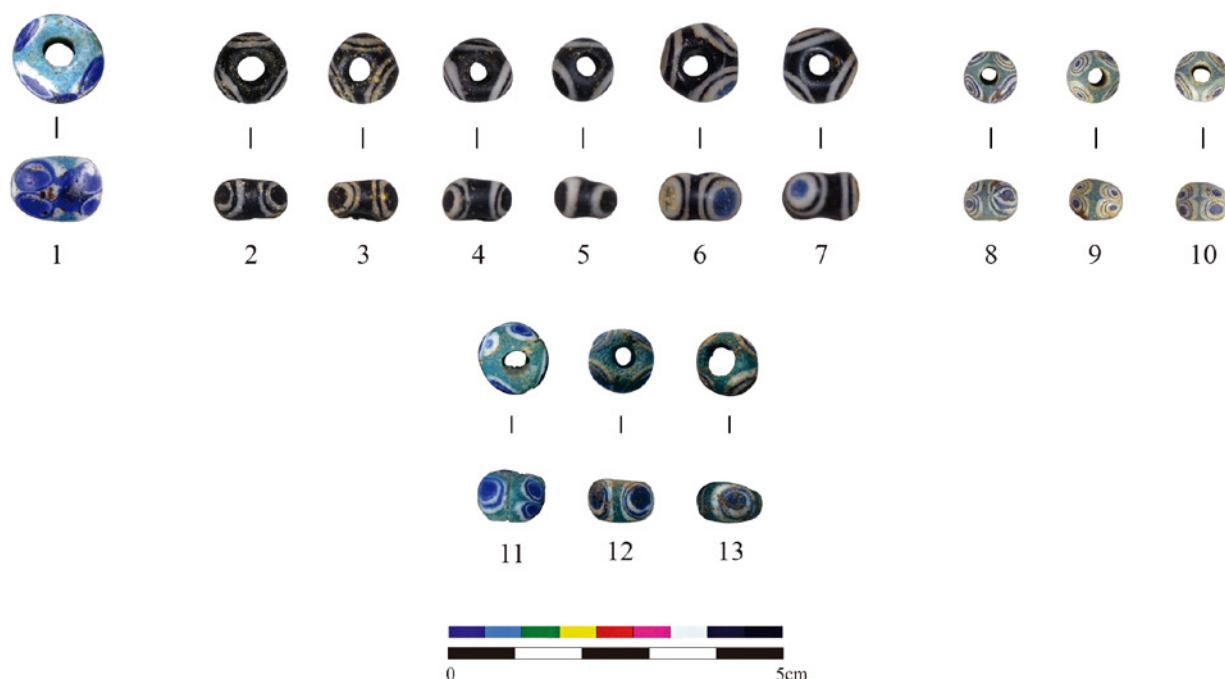


Fig. 6. Other eye beads from southern Portuguese sites (all photos by the author): 1, Hortinha (Lagos); 2-7, Corte de Père Jacques (Aljezur) (Gomes, 2021b); 8-10, Galeado (Odemira); 11-13, Olival do Senhor dos Mártires (Alcácer do Sal) (Gomes, 2020b).

contexts. However, at least one other pattern is documented in one piece from Fonte Santa (Fig. 4: 29) and in two others from Cabeça de Vaiamonte (Fig. 7: 4-5), both of which show eye decorations alternately disposed along two different alignments. Although close to Eisen and Ruano's pattern G, it diverges slightly because all the eye decorations have the same colour scheme. From that point of view, it fits more closely Spaer's pattern c) (Spaer, 1985, fig. 12).

Sub-Variant 2.c.1.b is also fairly common (Gomes, 2021a), but in contrast with Sub-Variant 2.c.1.a, known parallels outside southern Portugal are scarce. In the Algarve, they are documented in the necropolises of Fonte Velha de Bensafrim (Gomes, 2020a, pp. 99-101) (Fig. 3: 33-69), Corte de Père Jacques (Gomes, 2021b) (Fig. 6: 2-5), Gregórios (Silves; Barros *et al.*, 2005, p. 49 and fig. 4), Ameixial (Loulé; Carvalho *et al.*, 2017, p. 252) and Alagoas (Loulé; Botto, 1899, p. 28; Vasconcelos, 1919-1920, p. 100). Further North, in coastal Alentejo, they are found in Herdade do Gaio (Costa, 1967, 1972) and Almogrove (Odemira; Vilhena, 2014, Fig. 5). In inner Alentejo, they are a relatively common occurrence in tumular necropolises of the Ourique area: Fonte Santa (Gomes, 2021a, fig. 4) (Fig. 5), Chada (Beirão, 1986, fig. 29), Fernão Vaz (Beirão, 1972, fig. 5), Mealha Nova e Pêgo (Dias *et al.*, 1970, p. 218), Favela Nova (Dias and Coelho, 1983, pp. 201-202), Pardieiro (Odemira; Beirão, 1990) and Nora Velha (Soares and Martins, 2013, fig. 5), as well as perhaps in Cerro do Ouro (Gomes, 2022).

A significant number of Sub-Variant 2.c.1.b beads has been recovered from enclosure necropolises in

Beja, namely Vinha das Calças 4 (Gomes, 2015),³ Monte do Bolor 1-2 (Soares *et al.*, 2017, fig. 18), Quinta do Estácio 6 (Pereiro *et al.*, 2017, p. 319), Quinta do Castelo 5 (Calvo Rodríguez and Simão, 2017, p. 404, fig. 2), Esfolá (Melo *et al.*, 2022), Fareleira 2 and Poço Novo 1 (both in Vidigueira; Figueiredo and Mataloto 2017, figs. 8, 10). Further examples can be found in Quinta do Almaraz (Filardi, 2011, fig. 1.6.1).

As discussed in a recent overview on Pre-Roman black-appearing glass in southern Portugal, these beads and their annular counterparts seem to have been distributed throughout a comparative short time span since most of the well contextualized examples can be dated to the 6th century BCE, or the early 5th century at the latest (Gomes, 2021a).

In Sub-Variant 2.c.1.b beads eye decorations with a mono-stratified construction are much more common than in Sub-Variant 2.c.1.a. They co-exist with pluri-stratified decorations in many assemblages and contexts – for example, in Fonte Velha de Bensafrim (Gomes, 2020a, figs. 10-11) (Fig. 3), Corte de Père Jacques (Gomes, 2021b) (Fig. 6: 2-5), Gregórios (Barros *et al.*, 2005), Almogrove (Vilhena, 2014, fig. 5), Fonte Santa (Fig. 5), Vinha das Calças 4⁴ and Monte do Bolor 1-2 (Soares *et al.*, 2017, fig. 18).

As far as decoration patterns are concerned, there is a clear predominance of pieces sporting Eisen/ Ruano's pattern A, while pattern B is attested by a single example from Fonte Velha de Bensafrim (Gomes 2020a, fig.

³ Lončarić, 2022, see n. 1.

⁴ Lončarić, 2022, see n. 1.

11, 261) (Fig. 3: 57). In several assemblages, Eisen/ Ruano's pattern A beads co-exist with those which follow Spaer's pattern c). In most cases, this duality of decorative patterns correlates quite closely with the size of the beads.

Sub-Variant 2.c.1.b. beads can be divided into different size modules. In Fonte Velha de Bensafrim, three modules are documented – medium: 0.8-1.3 cm; large: 1.45-1.65 cm; and very large: 1.7-1.8 cm (Gomes, 2020a, p. 99) – whereas in Fonte Santa there are only two – medium: 0.7-1.2 cm and very large: 1.6 to 1.9 cm (Gomes, 2021a). Decorations of Eisen/ Ruano's patterns A and B are more closely associated to middle and large size beads, while those of Spaer's pattern c) predominate in very large beads.

The fact that beads of different size modules and decorative patterns often co-exist in the same assemblages and contexts suggests that this variation does not have a clear-cut chrono-cultural significance but may perhaps be related to the specific options of necklace designs in which large beads might have occupied a central position in graded compositions.

Together with these two fairly common types of spherical eye beads, a substantial number of rarer variants sporting different chromatic schemes have been registered. Two Sub-Variant 2.c.1.c beads, with a black matrix and pluri-stratified white, black, and cobalt blue eye decorations (Eisen/ Ruano's pattern A) are recorded in Corte de Père Jacques (Gomes, 2021b) (Fig. 6: 6-7). They are of similar sizes (1.2 – 1.25 cm in diameter). Together with their bichrome counterparts, they can be dated to the 6th century BCE.

Sub-Variant 2.c.1.d includes cobalt blue beads with white and cobalt blue eye decorations. They have been located in Porto Sabugueiro (Salvaterra de Magos; Aruda *et al.*, 2016), Quinta do Almaraz (Filardi, 2011, fig. 1.6.1) and Cabeça de Vaiamonte (Fig. 7: 9-22) (cf. Fabião, 2001); similar examples were retrieved in Early Roman contexts from the settlement of Mesas do Castelinho (Almodôvar; Estrela, 2019, figs. 7 and 9). It seems very likely that this Sub-Variant is an essentially Late Iron Age type, which may still have been in use during the Early Roman Period. It shows considerable variations both in terms of decoration and size. Most examples correspond to large or very large beads, which sport pluri-stratified eye decorations organized according to Spaer's pattern c). The assemblage from Cabeça de Vaiamonte includes very large (2.8 – 2.9 cm in diameter) and small beads (1.1 – 1.4 cm in diameter), showing both pluri- and, more commonly, mono-stratified eye decorations. The decoration of the latter mostly follows Spaer's pattern c) too, but one example (Fig. 7: 22) shows an irregular pattern, in keeping with the apparently poor quality of its production. The one pluri-stratified example (Fig. 7: 19), however, presents a decoration consistent with Eisen/ Ruano's pattern B.

Sub-Variant 2.c.1.e is represented by one piece from Cabeça de Vaiamonte with a cobalt blue matrix and white, yellow, and cobalt blue eye decorations (Fig.

7: 23) (cf. Fabião, 2001). The pluri-stratified decoration of this medium-size bead (0.9 cm in diameter) is organized in Eisen/ Ruano's pattern A. One bead from Quinta do Almaraz (Filardi, 2011, fig. 1.6.1) and another from Freiria (Cascais; Cardoso and Encarnação, 2013, fig. 72), with an extra colour – turquoise blue – added to the eye decorations make up Sub-Variant 2.c.1.f. While very incomplete, both these pieces appear to be very large in size, and their pluri-stratified decoration is organized in Spaer's pattern c).

Sub-Variant 2.c.1.g beads, with a turquoise blue matrix and yellow and cobalt blue eye decorations, are represented in the settlement of Mesas do Castelinho by a single sample from a well-dated late 4th century BCE context (Estrela, 2019, p. 205 and fig. 17). Another was found in a 1st century BCE (Early Roman) context (Estrela, 2019, pp. 206-208). The pluri-stratified decorations of this medium-sized bead (c. 0.9 cm in diameter) are distributed in a very irregular fashion, without following any of the standard patterns described.

Sub-Variant 2.c.1.h, with a dull sky-blue matrix and yellow, white, and cobalt blue eye decorations is possibly related to the aforementioned beads. It is exemplified by one medium size bead (1.1 cm in diameter) from Cabeça de Vaiamonte (Fig. 7: 8). Its pluri-stratified decoration is also arranged in an irregular way.

Sub-Variant 2.c.1.i comprises beads with a black matrix, with eye decorations formed by white, yellow, and black layers. They are attested in the necropolis of Mealha Nova (Dias *et al.*, 1970, p. 218) and in the site of Moinhos Velhos (Torres Vedras; Monteiro and Cardoso, 2016, fig. 6), both dated to the Early Iron Age. They could be considered roughly contemporary to the other black-appearing beads (Sub-Variants 1.b.1.b and 2.c.1.b), dated to the 6th century BCE. No morphometric data is available for them, but known examples are medium to large or very large in size. In both cases, their pluri-stratified decorations are organized following Eisen/ Ruano's pattern A.

Several other chromatic combinations reported for the assemblage of Mesas do Castelinho, including black beads with white and blue eyes and one red bead with yellow/ white and blue eyes, were retrieved from Early Roman contexts (Estrela, 2019, pp. 206-208).

Somewhat surprisingly, beads with a yellow matrix and stratified white and cobalt blue eye decorations are absent in southern Portugal. This is a fairly widespread colour combination in many contexts in the Mediterranean and Central Europe (Auer, 1982; Venclová, 1990, pl. 8-9; Kunter, 1995, taf. 2, 4-5; Rolland, 2021, p. 357), which is also known in Iberian contexts (Ruano Ruiz, 1995, 2000; González Hernández and López Jiménez, 2021). Some examples can even be traced in Central and Northern Portugal, namely in Castro de São Lourenço (Esposende) and Castro do Vieito (Viana do Castelo) in the Minho Region (Gomes, 2012, nn. 261 and 546), and in Cabeço das Fráguas (Guarda) in the Beira Alta Region (Santos and Schattner, 2010, fig. 16). Caution recommends including this type of

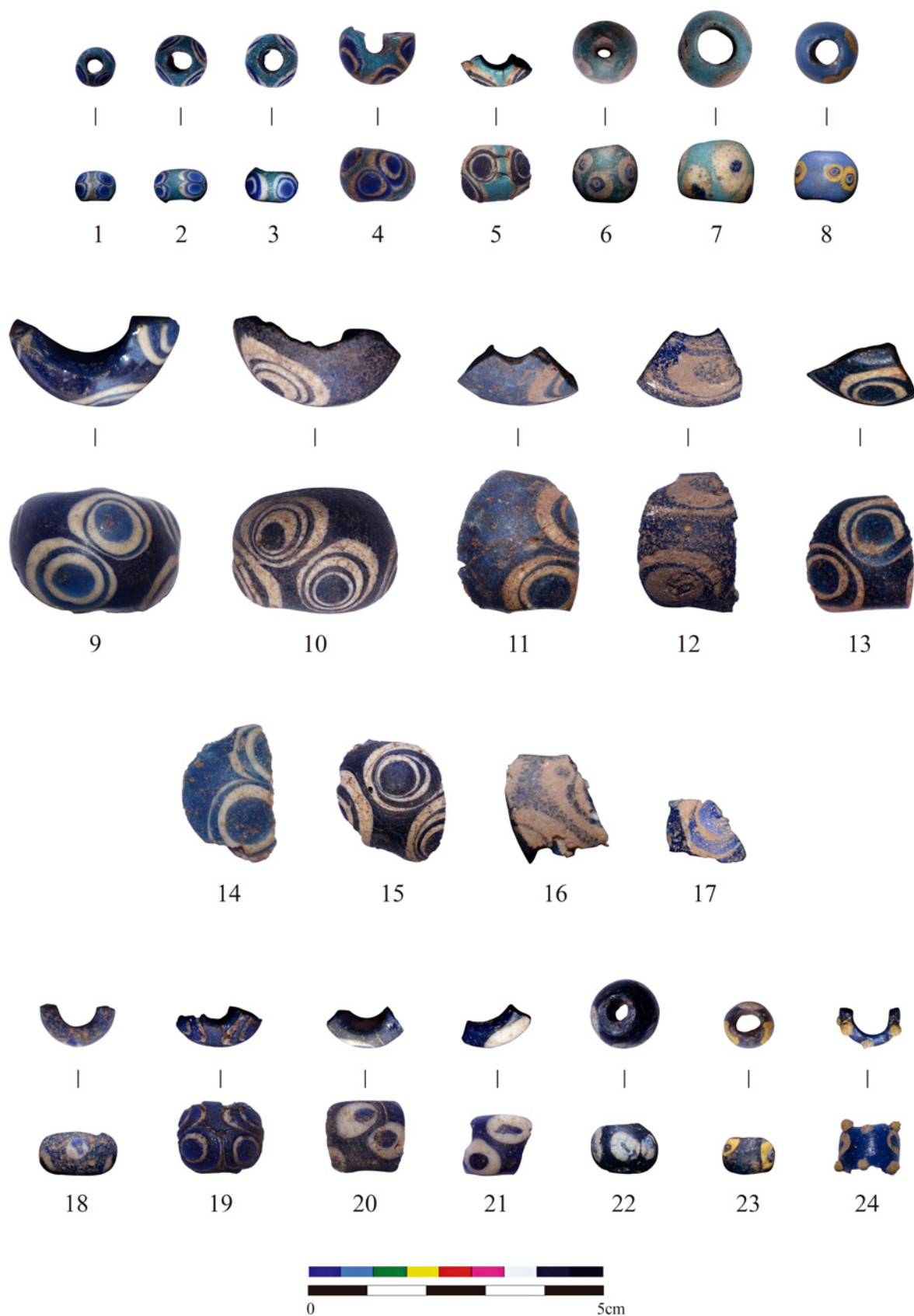


Fig. 7. Eye beads from Cabeça de Vaíamonte (Monforte). Photos by the author.

beads as Sub-Variant 2.c.1.j so that future finds may be accommodated in this classification.

Double or geminated spherical eye beads are classified as Variant 2.c.2. Most show a colour scheme identical to that of Sub-Variant 2.c.1.a (turquoise matrix with white and cobalt blue eyes); they seem to be an intentional or accidental production variant of it, but their reiterated occurrence is sufficient to consider them as a separate Sub-Variant (2.c.2.a). They have been found in Fonte Velha de Bensafrim (Gomes, 2020a: 101) (Fig. 3: 70–71) and Fonte Santa (Fig. 4: 30–31), both dated between the 6th and the 5th centuries BCE. All samples are formed by conjoined beads of small size (0.6 – 0.65 cm in diameter), with pluri-stratified eye decorations organized in Eisen/ Ruano's pattern A. A single geminated piece from Mesas do Castelinho shows a different chromatic scheme, sporting a cobalt blue matrix with cobalt blue and white eye decorations. It makes up Sub-Variant 2.c.2.b and was retrieved in a context dated to the second half of the 4th century BCE (Estrela, 2019, p. 210). It could tentatively be related to the equally late Sub-Variant 2.c.1.d, also formed by conjoined small sized beads (c. 0.6 cm in diameter) with mono-stratified eyes distributed following Eisen/ Ruano's pattern A.

Finally, one last Variant within the spherical eye beads includes examples which, apart from the eye decorations themselves, sport other added decorative elements. In all documented cases, they correspond to bright yellow spherules applied on the top and bottom of the beads or, in one case, forming rows placed in the spaces separating the decorative eyes.

Several Sub-Variants can be established as per the base chromatic scheme of the beads on which those spherules were applied. Sub-Variant 2.c.3.a comprises a turquoise bead (c. 1.2 cm in diameter) with white and cobalt blue pluri-stratified eye decorations organized following Eisen/ Ruano's pattern A, very similar to those from Sub-Variant 2.c.1.a. It was retrieved from a second half of the 6th century tomb in Vinha das Calças 4 (Gomes, 2015; Arruda *et al.*, 2017).

In turn, Sub-Variant 2.c.3.b is closely related to Sub-Variant 2.c.1.b. It comprises a single small size (c. 0.75 cm in diameter) black bead with white and black eye pluri-stratified decorations, arranged following Eisen/ Ruano's pattern A, from Fonte Santa (Gomes, 2021a, fig. 5, 1) (Fig. 5: 44) that can also tentatively be dated to the 6th century BCE.

Three more beads with a black matrix and sporting composite white and black eyes from Fonte Velha de Bensafrim (Gomes, 2020a, fig. 12, pp. 276–278) (Fig. 3: 72–74) constitute Sub-Variant 2.c.3.c. They should be considered contemporary to other black glass beads (Gomes, 2021a). The peculiar decoration of these large-sized beads (1.2 to 1.4 cm in diameter) is a *unicum* in the Portuguese territory, but not unheard of in the Iberian Peninsula (Ruano Ruiz, 1995; 2000), and certainly not in other Mediterranean and European contexts. It fits well with Eisen/ Ruano's pattern E (Ei-

sen, 1916, fig. 14; Ruano Ruiz, 1995, fig. 4) and can be related to the compound-eye-bead group (Haevernick, 1972), well attested in other regional areas during this period.

One last addition to this list includes a single medium-sized (c. 1 cm in diameter) cobalt blue bead with white and cobalt blue eyes sporting applied yellow spherules and mono-stratified eye decorations organized according to Eisen/ Ruano's pattern A. It makes up Sub-Variant 2.c.3.d and was retrieved from Cabeça de Vaiamonte (Fig. 7: 24) (cf. Fabião, 2001). It belongs to the Late Iron Age or even the Early Roman Period.

3. THE SOUTHERN PORTUGUESE EYE BEADS IN CONTEXT

One striking pattern which emerges from the panorama presented is the very close, almost exclusive association of glass beads with funerary contexts during the Early Iron Age (7th/6th – 5th centuries BCE). Only three out of thirty-one sites are not funerary (or likely funerary) in nature. Quinta do Almaraz (Filardi, 2011) and Moinho da Mariquitas (Monteiro and Cardoso, 2016) are both settlements while Lapa da Cova (Jiménez Ávila *et al.*, 2017) is a cave used as a religious space. However, since the find contexts of the material from these three sites is so far incompletely known, the date when the beads were deposited/ abandoned cannot be fully ascertained.

A discussion of the specific contexts with documented eye beads in the other twenty-eight sites is beyond the scope of this study. The vast majority have been found in necropolises from rural communities located inland. In many of them, the eye beads were associated with large assemblages of *exotica*, most of which correspond to adornment elements, including other glass beads, and also faïence, carnelian, and amber beads (Gomes, 2014).

Eye beads, like glass beads in general, are often associated with tombs which could be characterized as rich, in the sense that they concentrate relatively numerous and diverse offerings and adornment/ dress elements. That is certainly the case in Herdade do Gaio (Costa, 1967, 1972), Tomb 4 of Fonte Santa (Beirão, 1986, p. 71), Tomb 48 of Vinha das Calças 4 (Arruda *et al.*, 2017) and Tomb UE 4914 of Monte do Bolor 1–2 (Soares *et al.*, 2017, fig. 18), but also possibly in Gregórios (Barros *et al.*, 2005). In many of the cist necropolises of the Algarve region, glass beads (including eye beads) form the vast majority of the otherwise limited funerary assemblages (Gomes, 2020a, 2021b), suggesting they were highly appreciated and played an important social role as part of bodily displays of wealth and social status.

Unfortunately, until recently, no bioanthropological data was available to understand who the individuals wearing these beads were. In the Lower

Alentejo region excavations conducted in view of the construction of the Alqueva irrigation system are helping to overcome this situation. Although in most cases the data have not been published in detail, preliminary results point to a strong association between glass beads (including eye beads) and female burials (Gomes, 2015; Soares *et al.*, 2017, p. 285), suggesting they were part of the array of bodily adornments worn by women – perhaps of high-status – in the rural communities of the interior of southern Portugal. The appreciation for these items and their presumed high social value may stem from their exotic nature, their appealing aesthetic properties, and the regimes of corporality and bodily adornment in which they became embedded.

Current data do not allow to know whether eye beads had any special meaning to the local communities when compared to other types of beads. The protective symbolism of the eye in the Ancient Near East, from where the concept of these beads ultimately derived, is well-known (Thomsen, 1992; Vázquez Hoys, 2007; Elliott, 2015; Seawright, 1988). Perhaps that was also the case here.

Their concentration in funerary settings (and, in one case, in a religious context) might suggest that such a symbolic, apotropaic significance also played a role in the consumption of these beads by the local communities of southern Portugal. However, our poor knowledge of the settlements connected to the necropolises or the differential preservation of materials in domestic vs. funerary contexts hampers our understanding of other factors. It is also possible that the sheer social and economic value of eye beads meant they were carefully curated and reserved for disposal in highly symbolic and significant moments, such as burial ceremonies.

Beyond this circumstantial association with funerary contexts, there is no other explicit data to suggest an apotropaic function for eye beads similar to the one suggested for other *exotica*, such as the Egyptian and Egyptian-type scarabs and scaraboids documented in several of the aforementioned funerary contexts (Padró, 2002-2003; for the southern Portuguese documentation, see Almagro-Gorbea and Torres Ortiz, 2008). The only example of a likely apotropaic element with an eye motif is an Egyptian-type *udjat*-cow amulet found in the Castle of Alcácer do Sal (Gomes, E., 2008; Gomes, F. B., 2020c); the isolated nature of this element makes its interpretation difficult, and no relation between this amulet and the beads studied here can be readily envisaged.

Whatever the significance of eye beads may have been during the Early Iron Age, a change in their patterns of use – or, at least, of deposition – can be detected during the following period. The less common eye beads clearly datable to the Late Iron Age are, for the most part, to be found in settlements, although an association with funerary contexts cannot be excluded in the cases of Galeado (Beirão and Gomes, 1983) and Belhõa (Gomes, 1997). All in all, such a trend suggests

a different pattern of use and discard with regard to the previous period which in turn may relate to a change in the social appreciation of eye beads. The reasons behind such a change are difficult to grasp. Taste, cultural norms and issues regarding supply and availability may all have played a part in it. All these aspects need to be further investigated.

4. AN EYE FOR NUANCE: TOWARDS A DIVERSITY-BASED APPROACH TO THE INTERPRETATION OF EYE BEADS

Far from being a homogeneous group, Iron Age eye beads actually constitute a rather diverse typological family with many Variants and Sub-Variants. The meaning of this diversity has often been overlooked in the literature dealing with glass assemblages from Iron Age sites. However, it can afford crucial insights into issues such as chronology, the organization of trade networks and the dynamics of inter-regional connectivity.

Based on this overview, some relevant inferences can be drawn about the chronological and geographic distribution of the documented Variants and Sub-Variants. The first general observation regards the evolution of the eye bead repertoire (Fig. 8). During the Early Iron Age only a limited number of Variants and Sub-Variants are represented in regional assemblages. Sub-Variants 1.b.1.a/ 2.c.1.a and 1.b.1.b/ 2.c.1.b are widely predominant and are complemented only occasionally by others closely related to them (e.g., 2.c.1.c, 2.c.3.a, 2.c.3.b and 2.c.3.c). The only other Sub-Variant attributed to an Early Iron Age context is 2.c.1.i.. So far it has just been documented in the site of Moinhos Velhos (Monteiro and Cardoso, 2016), about which not much is known.

The geographical distribution of the two main Early Iron Age Sub-Variants, while obviously overlapping, does not totally coincide. Black-appearing beads are particularly abundant in southern Portugal, mostly in interior and rural contexts (Gomes, 2021a). Such a concentration remains difficult to explain due to their few parallels outside the Portuguese territory and their limited chronological range, circumscribed to the 6th century BCE (Gomes, 2021a).

In contrast, turquoise-blue eye beads (Fig. 9) (but also monochrome blue beads – see Gomes, 2020a), which are common in Mediterranean assemblages, are more widespread both in Portugal and in the rest of the Iberian Peninsula. Their chronology is also much wider as they appear to remain in use/circulation well into the Late Iron Age and may even have inspired imitations which follow the same chromatic scheme but with some changes in execution, apparently denoting a more limited skill set.

The analyses carried out on glass beads from the site of Vinha das Caliças 4 (Costa *et al.*, 2018; 2021)⁵

⁵ Lončarić, 2022, see n. 1.

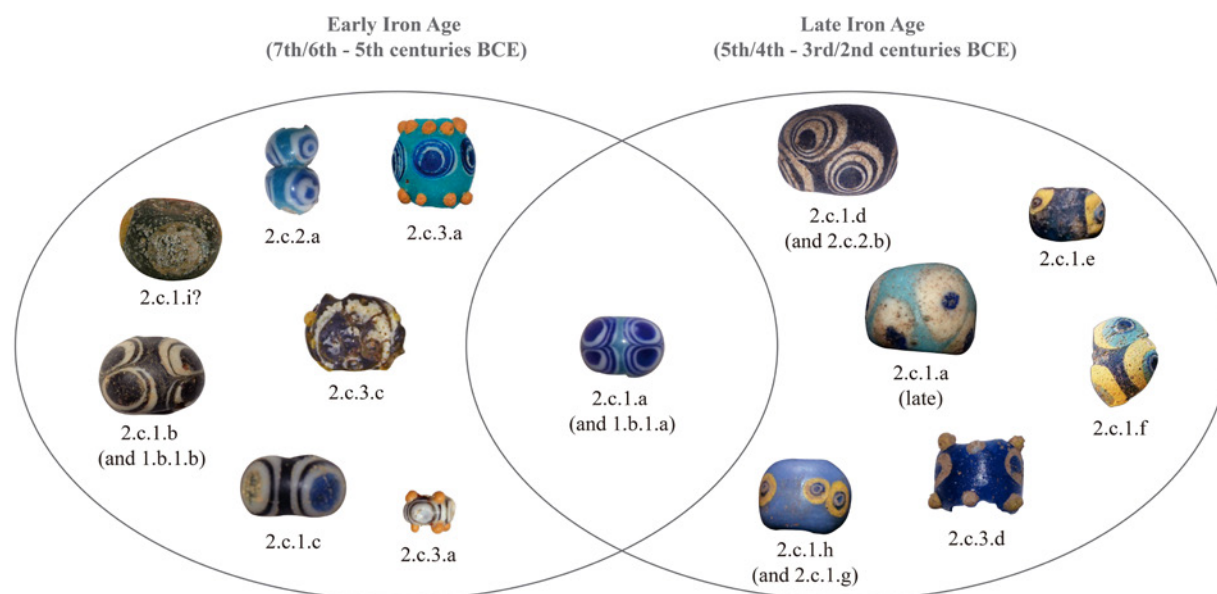


Fig. 8. Schematic representation of the changes in the eye bead repertoire of southern Portugal between the Early and the Late Iron Age (various scales). Photos by the author, except 2.c.3.a (after Arruda *et al.*, 2017) and 2.c.1.f (after Cardoso and Encarnaç o, 2013).

add a layer of complexity to this duality. They strongly suggest that blue beads were fashioned out of glass produced in the Levant whereas black beads were manufactured from Egyptian glass (Costa *et al.*, 2021).⁶ This supports the idea that during the Early Iron Age – or, at least, during the 6th century BCE – there were two different (albeit complementary) supply chains at work in southern Portugal, providing local communities with adornment elements. Still, it is likely that the agency and taste of those communities also played a substantial part in defining the specific consumption profiles detected in different sites and areas.

Whatever the dynamic behind these complex patterns of supply and consumption may have been, during the Early Iron Age, and more explicitly during the 6th and 5th centuries BCE, glass beads arrived in southern Portugal as part of broader commercial links between the various regional groups and the Mediterranean. This is made abundantly clear not only by the analytical results mentioned earlier, but also by the typology of the beads themselves, which, in most (if not all) cases have good parallels in the Mediterranean, and by their association with other Mediterranean *exotica*, including faience amulets and beads and carnelian beads and pendants (Gomes, 2014, 2018, 2021c).

With the transition to the Late Iron Age in the late 5th and especially the 4th century BCE, the number of glass beads in use and in circulation in southern Portugal decreases considerably. Some exceptional assemblages from this period are known (Fabi o, 2001; Arruda *et al.*, 2016), but in general these adornment elements become rarer.

In accordance with this scenario, eye beads are also less frequent (Tab. 2). During the Early Iron Age, their occurrence ranges from 8.1% (Vinha das Cali as 4; Gomes, 2015) to 52.5% (Fonte Santa) while in the two Late Iron Age well quantified assemblages they total 2.6% (Cabe a de Vaiaomonte) and 5.4% (Porto do Sabugueiro; Arruda *et al.*, 2016).

In light of the absolute and relative decrease in their numbers, it is somewhat surprising to note that typological diversity continues to be the norm. Whereas black-appearing beads of the earlier period are absent, turquoise beads of Sub-Variant 2.c.1.a remain well-attested in late assemblages. They are also joined by other Sub-Variants which, while roughly maintaining the same decorative and chromatic scheme, show certain specificities regarding their production. But perhaps the most remarkable feature in the Late Iron Age is the appearance of entirely new Sub-Variants. One of the most significant includes 2.c.1.d (and the related 2.c.2.b) beads, which are quantitatively well represented in the key assemblages of Porto do Sabugueiro (Arruda *et al.*, 2016) and Cabe a de Vaiaomonte (Fabi o, 2001). It is tempting to relate the preponderance of cobalt blue beads in these sites with the presumed evidence for the local transformation of raw cobalt blue glass reported for both sites (Fabi o, 2001; Arruda *et al.*, 2016). However, the circumstantial nature of this evidence does not provide any solid data to back up this hypothesis.

Other Sub-Variants make their appearance also at this time, although always in small amounts and relatively isolated. That is the case of Sub-Variants 2.c.1.e, 2.c.1.f, 2.c.1.g, 2.c.1.h and 2.c.3.d, which together with the “late” versions of Sub-Variant 2.c.1.a form a very specific array which can be considered characteristic of

⁶ Lon ari , 2022, see n. 1.

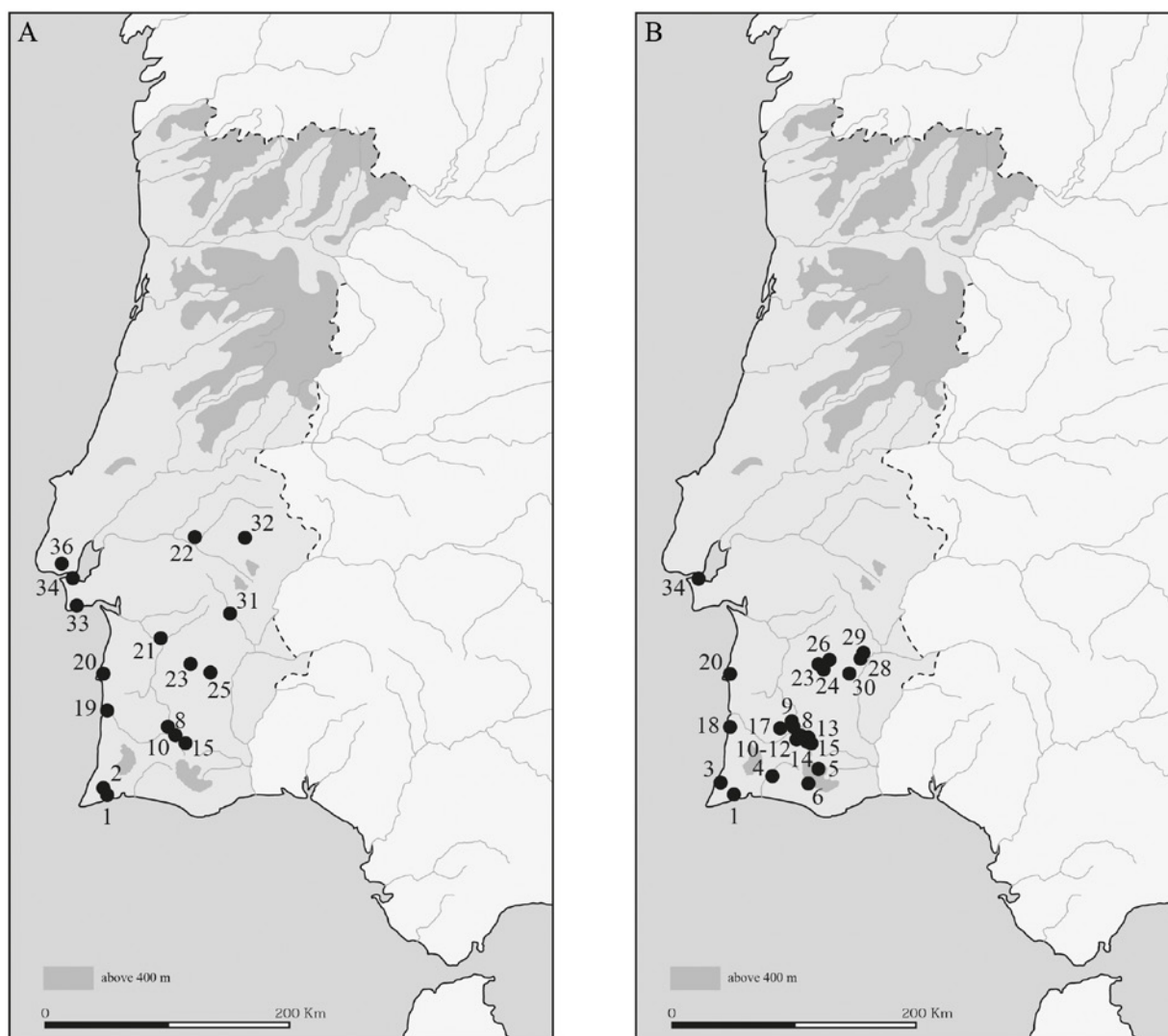


Fig. 9. Distribution of the most common eye bead Sub-Variants: A, 1.b.1.a/ 2.c.1.a; B, 1.b.1.b/ 2.c.1.b (numbering corresponds to that in Table 1). Cartographic basis by Victor S. Gonçalves.

the Late Iron Age. This is a significant observation as it highlights the potential of eye beads to act as generic chronological and perhaps also cultural markers.

The majority of these beads (and especially the rarer variants) seem to occur in sites which show close ties with the Celtic areas of the inner Iberian Peninsula. They find relatively good parallels in the *Meseta* region (González Hernández and López Jiménez, 2021), in the Northern parts of the Iberian Peninsula (Torres Martínez *et al.*, 2013, fig. 5), as well as in Central and Northern Portugal (Santos and Schattner, 2010, fig. 16; Gomes, 2012, nn. 261 and 546).

It is therefore conceivable that in the Late Iron Age, and regardless of the more than likely continuity of a trade in glass objects through the Mediterranean routes and southern Iberia, the local communities also acquired and used objects which were directly or indirectly connected with different glass-working traditions, and particularly with the eye beads produced

by the flourishing glass-working workshops of Celtic Europe (Kunter, 1995; Venclová, 1983, 1990; Rolland, 2021). Their diffusion to southern Portugal likely followed alternative routes, connecting this area with the interior of the Peninsula, as already suggested for the exceptional case of Cabeça de Vaíamonte (Fabião, 2001, pp. 207-210).

Much more work is needed to reconstruct the diverse and changing routes by which eye beads arrived in southern Portugal and to clarify the mechanisms behind their distribution and the dynamics of their consumption. Besides the publication of new assemblages and the re-examination of others incompletely studied, further in-depth comparative studies are required to outline in more detail the networks through which this material circulated. Analytical studies, which have only recently taken their first steps in Portugal, will certainly play a significant part in this re-evaluation of eye beads, too.

The insights presented here clearly show that the informative potential of this material can only be unlocked through approaches designed to highlight the diversity of glass eye beads, exploring the nuances of their decorative patterns beyond specific single features, such as the structure or organization of the eye decorations. The classification system proposed is by no means the only possible one, and others, more suitable criteria may be suggested in future works, hopefully taking the lead introduced here.

DECLARATION OF COMPETING INTEREST

The author declares that he has no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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