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ORIGINAL PAPER

Symbols missing a cause: the testimony of touchstones from Viking Age Iceland

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Abstract

From the Early Bronze Age, tools used to determine the nature and value of precious metal have been used as traditional symbols in burial rituals. During the Early Medieval Period, balances, weights and touchstones became widespread in the northern part of Europe, or bullion-economy zone. This paper focuses on a selection of touchstones from Viking Age Iceland, from both graves and settlements. Chemical microanalyses of streaks of metals observed on their surfaces show that not only precious metals, but also other non-ferrous metals, and in particular lead, have been tested on touchstones. The settlement finds come primarily from high-status farms which have produced evidence of working with non-ferrous metals. The disproportion between the low frequency of precious metals and the relatively high representation of touchstones in burials, including the occurrence of clearly ostentatious specimens, is apparent in Iceland. However, due to uncertainty as to the origins of the metal streaks on imported touchstones, the workshop finds are regarded as the more important source for knowledge of both metalworking and social relations in Viking Age Iceland.

Keywords Viking Age · Iceland · Burial · Precious metal · Touchstones · Ritual behaviour

Introduction

Precious metal artefacts and evidence for non-ferrous metal production are extremely rare in Icelandic Viking Age contexts. Silver objects have occasionally been found on settlements, mostly at high-status sites (e.g. Hofstaðir, Hrísbrú, Hvítárholt and Sveigakot: Hayeur Smith 2004, p. 112, 145–147; Graham-Campbell 2011, p. 125; Hansen et al. 2014, p. 131). The existing archaeological tally of Viking Age non-ferrous metallurgy is limited to a few sites, mainly those just mentioned (see Hayeur Smith 2004, p. 97–100, with refs.). Numerous oblong stone artefacts of rectangular cross-section, usually regarded as 'whetstones', have been discovered at almost all of these sites. Hundreds of such artefacts are recorded in Viking Age Iceland, both from elite and ordinary sites (see Hansen 2009, p. 43–68; Hansen 2011). However, chemical microanalysis of identical objects from Northern and Central Europe has shown that they were in fact touchstones, artefacts used to determine the nature and value of non-ferrous metal (e.g. Ježek 2013; 2014; 2016; 2017). These tools, as is also the case of balances and weights, became widespread in the northern part of early medieval Europe, or bullion-economy zone, where hacksilver was commonly used as currency.

Tools for determining the value of metal, as well as other metalworking tools (including forging tools), served as traditional symbols in burial rituals in Europe and the Near East at least from Early Bronze Age (e.g. Ježek 2015; 2017, p. 23–24, 37, 53–56). Numerous prehistoric and early medieval burials contain both weights/balances and touchstones,[1] but these tools are not found together in the majority of cases. They are objects to which the same symbolic meaning was attached during the funeral ritual. If we do not share the idea of nineteenth-century archaeologists that European pre-Christian societies must have believed in an active afterlife in which the deceased (including infants) required various objects for their future activities, we also lack any reason for depositing whetstones in graves. At the same time, the occurrence of tools used to determine the value of metal in ancient

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[1] For example, in Late Bronze Age, Central Europe both weights/balances and touchstone candidates are present in at least four graves (Pare 1999, figs. 15: 2; 20: 8; 25: 13; 27: 2, 3).

graves does not mean that the buried individuals handled these objects during their lifetimes (Ježek 2017, p. 75–85, with refs.). Grave-goods, and in particular their composition, were just one of the many ways in which to satisfy the traditional demands of a proper burial, or even to express the affection of the survivors for the deceased, who often—or even mostly—had only come into close contact with these objects after their passing. At the moment of bidding final farewell, the objects placed in a grave were not directed towards the (posthumous) future.

Typical stone artefacts (c. 35 pieces) have been found in 29 burials in Iceland, representing almost 10% of the documented Viking Age burials (Friðriksson 2000, p. 602). This is a high ratio, similar to that for the exceptional early medieval site of Birka (Sweden), where 13% of burials are furnished with touchstones (Ježek 2017, p. 145). At Hedeby (Germany), touchstones have only been found in 2% of the total number of graves (see Ježek and Holub 2014; Ježek 2017, fig. 20). For the sake of closer comparison, Ireland provides a more suitable picture. Over 100 graves in Ireland regarded as Viking burials have produced only four typical stone artefacts (Harrison and Ó Floinn 2014, p. 185; Russell and Hurley 2014, p. 169). One of these graves contained both a touchstone candidate and three weights[2]; nine additional weights and five balances are known from seven other graves attributed to Vikings in Ireland (Harrison and Ó Floinn 2014, p. 172–174). Whereas the ratio of excavated Viking Age burials containing weights is the same in both Iceland and Ireland (6%), the number of weights in Icelandic graves is sixfold (62 weights from 20 graves). Just one balance pan is a certain burial find in Iceland, unlike at least four additional pans (perhaps also from graves; Friðriksson 2000, p. 608).

Unlike balance scales and weights, touchstones enable us to determine which metals were tested by ancient people and, above all, what alloys they produced. An ancient user of a touchstone was able to ascertain the quality of the tested metal simply by studying the colour of its streak on the touchstone, with the naked eye (see Ježek 2017, p. 12–13). Whereas some of the typical stone artefacts (being oblong, with a rectangular cross-section, and of the characteristic material) among finds from Iceland and elsewhere could perhaps be whetstones, it should be pointed out that no ancient whetstone of this shape from Europe has been confirmed to date by chemical microanalysis; for the Middle Ages (as well as for the Iron Age, Roman and Migration periods), massive streaks of iron would be expected.

[2] Islandbridge 1866A. Almost all Viking burial finds of weights and balances in Ireland are known from the burial complex of Kilmainham/Islandbridge in Dublin, where numerous weapons, forging tools, etc., form the grave goods. The remaining two 'Irish' Viking Age weights come from Golden Lane also in Dublin (Harrison and Ó Floinn 2014).

In order to research further the purpose of the stones commonly registered as 'whetstones' in Iceland and to discover if (at least) some of them should instead be classified as touchstones, we selected specimens for chemical microanalysis in a scanning electron microscope (SEM).

The first step in our selection took into account several criteria: the length of the artefact had to be suitable to fit into the chamber of the available SEM (i.e. no longer than 16 cm); next of vital importance were clear find circumstances, petrographic qualities and the availability of the specimen for analysis. We then selected 20 specimens (16 from graves, 4 from settlements/workshops; Fig. 1), excluding those stones on which the binocular microscope examination failed to identify any suitable areas for further observations. This naturally does not mean that metal streaks, visible only in the SEM (see Figs. 2 and 3), are not preserved on the excluded specimens. On the other hand, some touchstones may never have been used for making a test. Touchstones could also have served as a status symbol (representing access to precious metal) during the lifetime of their bearers (see below). Finally, the surfaces of the selected stone artefacts were studied in the SEM in order to determine the chemical composition of the identified metal streaks (for the method, see Ježek 2014). None of the selected specimens were observed on all sides in the SEM; however, this is not of major significance given that the presence or absence of the streaks on touchstones is the result of many random factors. These include the fact that touchstones were already cleaned when in use (before a touchstone could be used for testing, it was necessary to remove the remnants of previous tests), or later, during post-excavation work in the laboratory (see Ježek 2017, p. 15–16, 21). Therefore, the results as presented do not have a quantitative aspect, as such would only be confusing.

Burial finds as a source of information

Sixteen of the Icelandic stone artefacts selected for SEM analysis come from a total of 15 graves. Table 1 summarises data regarding the inventory of these graves, i.e. consisting of half the total number of Icelandic Viking Age burials containing touchstone candidates. The majority of the analysed burial finds are preserved intact (Fig. 1). The graves in question were discovered between 1855 and 1959, in the vast majority of cases by chance, from eroded mounds or during road construction. Some graves belong to small burial grounds, whereas others are solitary graves. Although they do not differ from standard Viking Age burials in Iceland, with respect to their inventory, none of them were among otherwise unfurnished graves, and there are elite burials among them.

Fig. 1 Analysed Viking Age touchstones from Iceland. The numbers correspond with Table 2. Courtesy of the National Museum of Iceland

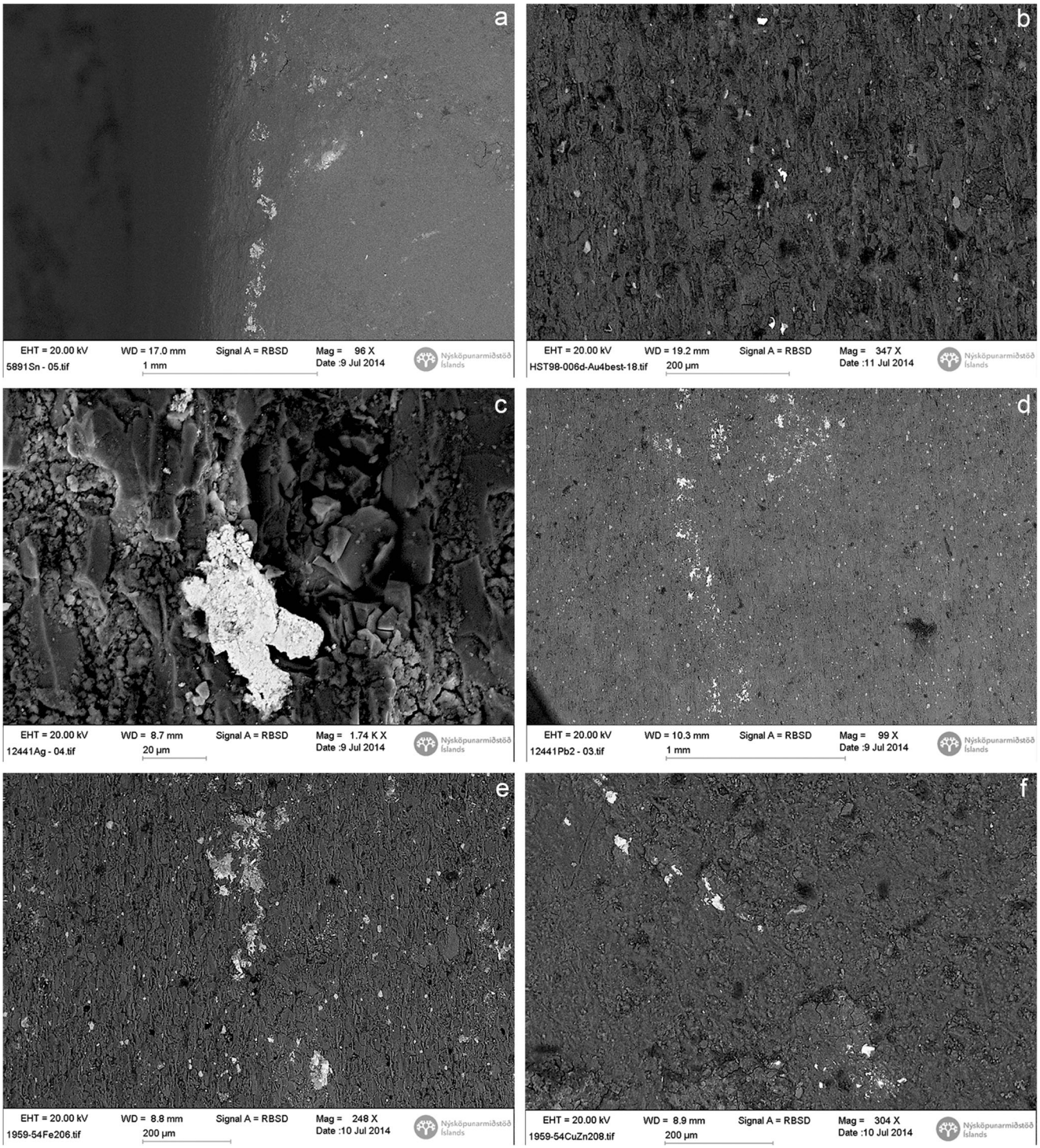

Fig. 2 Selected microphotos: **a** Áslákshóll í Langanesi, tin; **b** Hofstaðir, gold; **c** Ketilsstaðir 12441 silver; **d** Ketilsstaðir 12441, lead; **e** Ljótsstaðir, iron; **f** Ljótsstaðir, brass

At least four Icelandic excavated burials contained two touchstone candidates, one burial even had three (these finds from Hólmur have been lost: Friðriksson 2000, p. 588). Two of these burials contained extraordinarily long tools: both touchstone candidates from one of the richest burials in Iceland, at Eyrateigur (see Friðriksson 2000, p. 586), are 40 cm long (Fig. 4a, b). This burial also contained a sword, shield, axe, two spears, a fragment of silver coin, a small agate and four weights. One of two typical stone artefacts from a similarly 'rich' burial at Galtalækur is 29.8 cm long (weighing

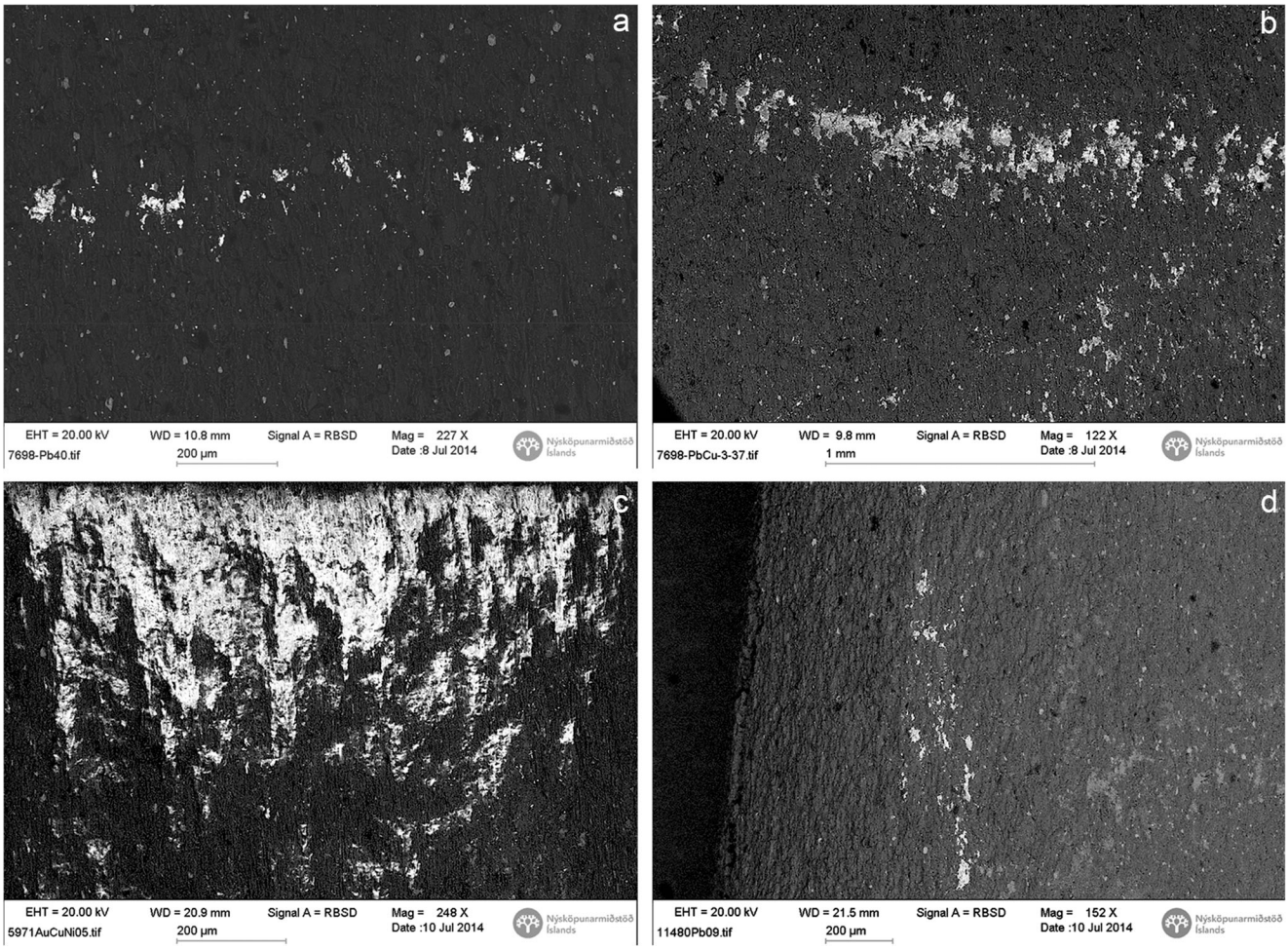

Fig. 3 Selected microphotos: **a** Reykjasel, lead; **b** Reykjasel, alloy of lead and copper; **c** Sílastaðir, gold with a content copper and nickel; **d** Stóri-Klofi 2, lead

775 g). Because of their length, it is not possible to analyse these objects in the available SEM, as is also the case with the 37-cm-long touchstone candidate from the burial at Vað.[3] The question remains as to whether roughly shaped artefact with preserved length of 49 cm from Skallakot in Þjórsárdalur (Fig. 4d), where one of the largest Viking Age halls in Iceland has been excavated, was 'just' a piece of raw material used for touchstones (cf. Eldjárn 2000, p. 352; Gestsdóttir 2002; Gísladóttir 2004). The function of the oblong stone artefacts from Knafahólar/Keldur (also known as Rangá) and Þverárdal in Hunavatnsýslu (79 and 70 cm long) remains unknown (see Ježek 2017, p. 71–73).

Touchstones with a length of c. 30 cm are not exceptional in early medieval elite burials in Sweden (e.g. Vendel, Valsgärde, Birka, Röstahammaren in Ås: Ježek 2013, p. 717; Ježek 2016; 2017). Even longer specimens are known from Viking Age Norway. From among seven oblong stone artefacts found in five elite burials at Langeid, two are 51 cm and 61 cm long (burials 6 and 20: Glørstad and Wenn 2017). A 70-cm-long specimen comes from Re, Time (near Rog), a 61-cm-long artefact was found in Nord-Roldnes, and the ship burial at Storhaug in Gunnarshaug contained at least three typical stone artefacts, with the longest measuring 58 cm. One of five touchstone candidates from the elite grave at Erøy, Suldal, is 54 cm long (Petersen 1951, p. 254). A 51-cm-long stone artefact belongs to the stray finds from Sandve in Kormt island (Zachrisson 2017, fig. 25.15). As is also the case with (e.g.) the exceptional Anglo-Saxon 'Sutton Hoo sceptre' (Bruce-Mitford 1978, p. 311–350) or the 'oversized' stone artefacts of typical shape from the Early Bronze Age (see Ježek 2017, fig. 2), there is not available a SEM enabling a study of these long objects from Viking Age Scandinavia. Nevertheless, the display role of such artefacts is clear.

One of the topics of this paper is the symbolic role of tools used for determining the nature and value of non-ferrous metal in the past. The material culture on which archaeological knowledge depends rarely provides indisputable evidence of

[3] Currently missing from the assemblage at the National Museum of Iceland. Two of the above-mentioned artefacts (Eyrateigur and Vað) are made of Eidsborg schist from Norway. From the analysed assemblage, the touchstones from Dalvík 12, Hrafnsstaðir and Skuggi are made of Eidsborg schist.

Table 1 Furnishings of Icelandic Viking Age burials from which touchstones have been analysed (after Friðriksson 2000, p. 552–589)

Burial	Sword	Spear	Axe	Shield	Gaming pieces	Weight	Horse	Others
Áslákshóll í L.		1						Copper ring
Baldursheimur	1	1	1	1	24			Bone figurine, etc.
Dalvík 2		1				8	1	
Dalvík 12					19			Dog
Galtalækur *2 touchstones*		1	1	1		4		3 fishing hooks, etc.
Gautlönd								Dog
Granagil	From the site with 4 burials come a (fragment of) sword, lead weights, etc.							
Hemla		1	1	1		1	2	Jasper, glass bead, etc.
Hrafnsstaðir	From the site with 3 burials comes an axe.							
Ketilsstaðir *2 touchstones*								3 brooches, more than 40 beads, etc.
Ljótsstaðir							1	Piece of carved whalebone
Reykjasel		1						34 beads, incl. of amber, iron ring (?)
Sílastaðir 1	1	1	1-2	1				
Stóri-Klofi 1							1	Jasper
Stóri-Klofi 2		1				1		

Knives, shears, spindle whorls, combs, iron and wood fragments and other common finds are not included in the table. With two exceptions (see the table), just one touchstone comes from a grave. Only one touchstone from Galtalækur could be observed in the SEM

symbolic, or even ritual, behaviour. However, this is not the case with the tools under discussion. For archaeologists, a necessary condition is to go beyond the limitations of their period specialism (e.g. on the Viking Age, in fact a short period in the history of just one part of Europe). This is of even greater importance when addressing objects used in handling precious metal as far back as the Chalcolithic. Eloquent testimony of the symbolic role of these tools comes from three gold (non-functional) balances (Fig. 5) from one of the richest graves at Mycenae (Grave-Circle A, shaft grave III; Schliemann 1877, figs. 301, 302; Karo 1930, pls. 34, p. 81–82). From Iron Age prestige grave 59A at Lefkandi, Skoubris (Greece), there are two lead balance pans (see Pare 1999, p. 474; for touchstone candidates from this site, see Ježek 2017, p. 16, 26). We agree with previous scholars (e.g. Pare 1999, p. 475, with refs.) that these balances were used prior to their deposition in the grave as a symbol of power or as cult equipment (cf. the magnificent touchstone from a votive context in a temple in Susa, Iran: Ježek 2017, p. 39). One of the many touchstone candidates from the royal cemetery in Ur, Iraq (the 'King's Grave' PG 789, c. 2550–2440 BC), is made from lapis lazuli and equipped with a gold ring (Ježek 2017, p. 37,

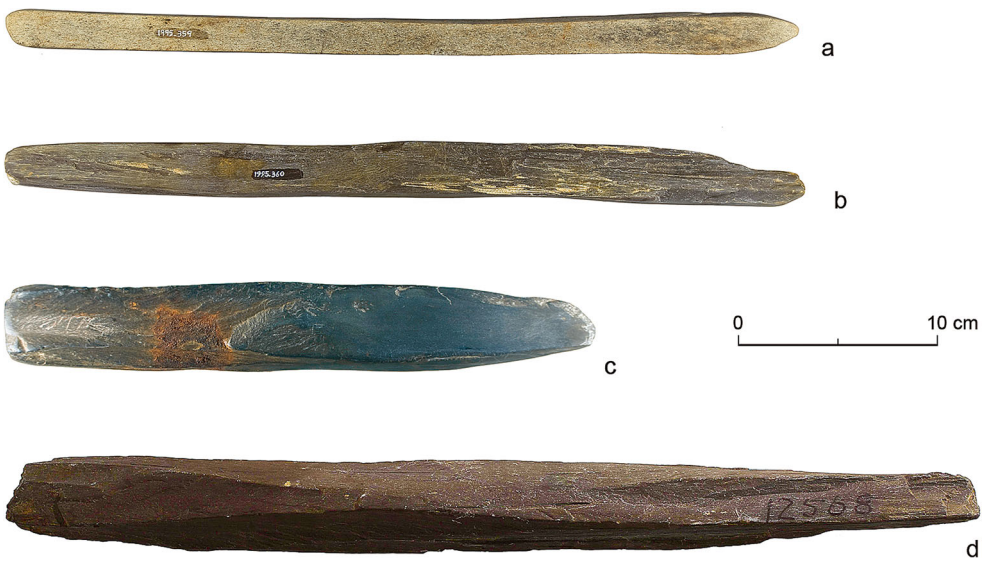

Fig. 4 Examples of stone artefacts too long for SEM analysis: **a**, **b** burials at Eyrateigur, **c** burial at Galtalækur, **d** surface find from Skallakot in Þjórsárdalur (photo Ívar Brynjólfsson). Courtesy of the National Museum of Iceland

Fig. 5 Two of three gold balances from prestige female burial at Mycenae (Greece), shaft grave III (Grave Circle A). Not to scale. Archaeological Museum at Athens (photo by Ima Pictures)

fig. 9: A; chemical microanalysis of this object was not permitted by the Penn Museum). The function of a prestigious non-functional symbol can also be considered in the case of observed (in SEM) stone artefacts of typical shape, but without streaks of any metal, manufactured from other materials unsuitable for use as touchstones (e.g. marble: Ježek 2017, p. 50). In any case, appearing far more frequently in graves is weights and, especially, simple functional touchstones made of common schist, slate and sandstone.

Analysed touchstones from Viking Age Iceland: their context, raw material and metals observed

The case of Viking Age Iceland is particular in one important regard: the burial finds offer no certainty as to whether or not the touchstones arrived in Iceland already with metal streaks from tests conducted earlier in Norway or the British Isles. Therefore, any marks found on the analysed touchstones from burials in Iceland need not reflect the Viking Age reality there.

With one exception, all the Icelandic specimens analysed (Table 2) are of schist. This can be grouped into two main geological types: a light grey, fine-grained, schist that has been geologically sourced to the Eidsborg region in Telemark, West Norway, and a dark grey, fine-grained, schist which is probably also from Norway, but its actual source is less evident given that this stone type is found over a much wider geological region. Both types are common in Viking Age contexts in Iceland, Scandinavia and the Scandinavian settlements in the British Isles (Hansen et al. 2014, p. 126). There is a tendency towards a higher proportion of the dark grey schist type during the initial settlement period in Iceland, which is before the onset of the mass export of light grey Eidsborg schist, beginning around or after AD 1000. Due to the fact that there is no readily available schist or other usable raw material for touchstones in Iceland, this radical change in the assemblage is linked to a change in the trading patterns and settlement rate (Hansen 2009, p. 94; Hansen 2011, p. 74). For the tenth century, it is expected that new settlers brought with them all necessary basic commodities. From the eleventh century, the import of new basic commodities was mainly in the hands of tradesmen (the town of Skien in Norway, in particular, provided easy access to the Eidsborg schist). Finally, there is one specimen of banded silt (Áslákshóll í Langanesi). It is the only one of its type from Iceland; only c. 100 examples of this type have been found within the Viking world (see Johansen et al. 2003, p. 156; Resi and Askvik 2008, p. 55). Testifying to the value of the banded silt artefact is the fact that, after being damaged, it was repaired for further use: the original hole broke and a new one was drilled. Nevertheless, this touchstone still ended up in a grave—with no other extraordinary furnishing.

Whereas the majority of similar burial finds, including those from Iceland, are found in the waist area of the deceased, in the case of Vað, the stone artefact lay at the left shoulder (Kristinsdóttir 1988, p. 93), and in Stóri-Klofi 1 it was found by the feet (Þórðarson 1936). Generally, the placement of these tools in graves, just like the gender or age of the deceased, played no role in regard to the meaning of these objects used at the moment of bidding final farewell (see Ježek 2017, p. 81–84, 95, 136). Although the majority of

Table 2 Analysed Viking Age touchstones from Iceland

Fig. 1		Reg. No.	(Preserved) length (mm)	Max. cross-section (mm)	Note
	Burial				
1	Áslákshóll í L.	5891	65	17 × 17	Banded silt: see in the text
2	Baldursheimur	9	60	17 × 7	
3	Dalvík 2	5939	74	16 × 8	
4	Dalvík 12	5971	< 130	22 × 9	Both ends broken off
5	Galtalækur	10483	80	10 × 6	
6	Gautlönd	87	57	10 × 7	
7	Granagil	5215	80	16 × 9	
8	Hemla	11332	67	10 × 7	
9	Hrafnsstaðir	15236	< 120	21 × 14	One end broken off
10	Ketilsstaðir	12,441	135	25 × 10	
11	Ketilsstaðir	12442	110	15 × 7	
12	Ljótsstaðir	1959;54	110	15 × 12	Unfinished drill hole in one end
13	Reykjasel	7698	116	27 × 7	
14	Sílastaðir 1	13708	< 90	23 × 12	Two fragments, one end missing
15	Stóri-Klofi 1	11475	< 143	10 × 10	Both ends chipped
16	Stóri-Klofi 2	11480	105	15 × 10	
	Settlement				
17	Herjolfsdalur	F362	42	8 × 6	Fragment after lengthwise chipping
18	Hofstaðir	HST98-119	< 100	12 × 11	Both ends broken off
19	Skuggi	SKÖ09-45	100	9 × 7	Groove in one end
20	Sveigakot	SVK 00-121	50	17 × 6	

With the exception of one banded silt (Áslákshóll í L.), all touchstones are made of schist. Reg. Nos. after the National Museum of Iceland. The first column corresponds with the numbers in Fig. 1

touchstones in Icelandic graves evidently come from male burials, the anthropological analysis of the remains from Dalvík 12 indicates that this individual was probably female, 18–25 years old (Gestsdóttir 1998). The grave inventory in the case of Ketilsstaðir, for example, also suggests a female burial.

Remarkable by its relative 'wealth' in Icelandic circumstances, the burial ground at Sílastaðir had a total of four graves, three of which were furnished with weapons, and two of them also with typical stone artefacts (Friðriksson 2000, p. 576). Only one of these touchstones (from grave 1) could be included in the analysed assemblage[4]: a streak of metal composed of gold, copper and nickel was documented (Table 3). A streak of (pure) gold was recorded only once in our assemblage—on the touchstone from the longhouse at Hofstaðir. The owner(s) of this homestead, from where fifteen Viking Age (and a similar number of later) 'whetstones' were retrieved (Askvik and Batey 2009), apparently held a leading position (see Lucas 2009). Among comparable sites in Viking Age Iceland, the longhouse at Hrísbrú (see Milek et al. 2014, p. 159–160) has provided up to twenty touchstone candidates (Hansen et al. 2014, p. 124–126), along with evidence of both non-ferrous metallurgy (including four crucibles: Batey 2009, p. 315) and iron metallurgy (Wärmländer et al. 2010).

Streaks of silver were observed on three touchstones from our assemblage. One of them comes from Baldursheimur. Found as a result of erosion in 1860, this burial of a man and a horse ranks among the most prestigious Viking Age burials in Iceland due to its gaming pieces, male figure, sword, spear, axe, shield (boss) and riding gear (Friðriksson 2000, p. 580; see Eldjárn 2000, p. 202–203). The only other burial (Ketilsstaðir) containing a touchstone with a streak of silver (and a streak of lead) from our assemblage was also furnished with a second touchstone on which streaks of lead were documented. The third known touchstone bearing traces of silver

[4] The specimen from grave 2 was on exhibition at the time of our analysis. M. Hayeur Smith (2004, p. 104) has pointed out that it is the only grave in Iceland known to contain iron jewellery (and interpreted its inventory as probably being the equipment of a jeweller).

Table 3 Results of point analyses of metal streaks on stone artefacts from the analysed assemblage

Site (Reg. No.)	An.	Ag	Au	Cl	Cu	Fe	Ni	Pb	S	Sn	Zn	Fig.
Áslákshóll í L. (5891)	1							100				
	2									100		2a
Baldursheimur (9)	1			7				93				
	2				63						37	
	3	85		7					8			
	4							100				
	5					100						
	6			2	52					46		
Dalvík 2 (5939)	1							61	11	28		
	2			2				14		84		
	3									100		
Dalvík 12 (5971)	1							100				
	2									100		
Galtalækur (10483)	1							100				
Gautlönd (87)	1			2				23		75		
	2			3	27			10		60		
	3			4				32		64		
Granagil (5215)	1			3	83			14				
	2							100				
	3			11	30			59				
	4			6	10			76			8	
Hemla (11332)	1							100				
Herjolfsdalur (F 362)	1										100	
Hofstaðir (HST98-119)	1		100									2b
Hrafnsstaðir (15236)	1							100				
Ketilsstaðir (12441)	1	89		11								2c
	2							100				2d
Ketilsstaðir (12442)	1			10				90				
Ljótsstaðir (1959; 54)	1					100						2e
	2							100				
	3				63						37	
	4			2	59				3		36	2f
Reykjasel (7698)	1			8				92				3a
	2				42			58				3b
	3			7	18			75				
	4									100		
Sílastaðir (13708)	1		70		21		9					3c
Skuggi (SKÖ09-45)	1	100										
Stóri-Klofi (11475)	1							100				
Stóri-Klofi (11480)	1							100				3d
Sveigakot (SVK00-121)	1										100	

Each analysis number (An. No.) for individual objects belongs to a separate streak. The semi-quantitative data given in weight percent (wt%) are calculated at 100%. The geochemical background, i.e. elements deriving from the raw material of the stone, is excluded. Both concentrations of 'pure' zinc are only 10 and 40 μm in size

comes from a small inland farm at Skuggi, dating from the tenth to twelfth century, with iron smelting debris and a large amount of charcoal. Among the other finds are three glass beads, including one with gold foil, fragmented iron tools and nails, a piece of copper alloy, a 'possible crucible fragment' (Harrison 2010, p. 56–57) and two additional touchstone candidates (made of Eidsborg schist, as is also the case with the aforementioned touchstone).

A grave containing two touchstones was excavated at Galtalækur (see above), one of which was analysed with only streaks of lead documented; the second stone from this grave was too long for the available SEM chamber (Fig. 4c). The burial also included weapons, riding gear and lead weights (Friðriksson 2000, p. 555, 607). The length of the grave-pit—1.5 m—is extraordinary, similar to the case of the burial at Tatterrshall Thorpe (England, from the seventh century), with dissolved bones, famous for remarkable number of forging tools: 'at 1.7 m the grave was a little short for a normal adult' (Hinton 2000, p. 5, 101). Ježek (2015, p. 131) has argued that the Tatterrshall Thorpe burial belongs to a non-adult member of the local elite. In this context, the three fish-hooks and one iron hook from the grave at Galtalækur are noteworthy. Only two further graves with fishhooks are known from the whole of Iceland (however, these delicate iron objects can degrade easily in the Icelandic soil). A burial at Kaldárhöfði ranks as one of the richest in Iceland and contained the remains of two individuals, including a child buried in a small boat (Friðriksson 2000, p. 560). All that is known about an inhumation burial uncovered in 1937 along with a horse grave at Tindar, also furnished with a spearhead and a ringed pin, is that it was a 'shallow, round grave, approximately 95 cm in diameter'. Again, instead of 'a man who drowned in the lake' (see Friðriksson 2000, p. 567), we suggest considering the grave to be that of a child.[5]

Streaks of lead or its alloys appear most frequently in the analysed assemblage from Iceland, as is also the case with other early medieval touchstones studied from Northern and Central Europe (see, e.g. Ježek 2017, p. 80, 139, 144). Lead was important both for trade as raw material and for making jewellery and working with non-ferrous metals in general. Lead ingots have been found at Kaupang and other south Scandinavian early medieval sites, including in hoards (Pedersen 2016, p. 152–153). Previously, we have asked if the frequency of lead streaks on early medieval touchstones from both Viking and Slavic environments had ties with the decline in regular supplies from the lead mines in Hispania and Britannia after the fall of the Western Roman Empire. At the same time, the demand for lead continued to grow in early medieval Europe, particularly in its Christian parts (Ježek 2017, p. 148). In any case, once again, the Icelandic burial finds offer no certainty as to whether or not the touchstones arrived in Iceland with metal streaks already on them from previous tests. We are only able to note that streaks of lead do not appear on any of the four analysed non-burial finds (i.e. on the touchstones from Herlojfsdalur, Hofstaðir, Skuggi and Sveigakot; see Table 3). It would be premature to conclude that the role of lead was not important for local metalworking; however, even the question of the origin of the Viking Age jewellery finds from Iceland remains a subject of discussion (see Hayeur Smith 2004, p. 105; Graham-Campbell 2011). In any case, there is no reason to include Iceland in the regions where the lead trade was important in the Viking Age.

Streaks of tin are less common. On the other hand, streaks of metal composed of copper and lead, or copper and tin are common. Streaks of brass documented in our Icelandic assemblage show an identical percentage of zinc, i.e. around 37%, which is not rare in early medieval Europe (see Ježek 2017, p. 101, with refs.). The size of only two concentrations of 'pure' zinc—grains only 10 and 40 μm in size—does not allow any interpretation (cf. Ježek 2016; Ježek 2017, p. 103–106). In any case, no streaks of brass or any others have been observed on either of these two touchstones. Both objects are not grave finds: one comes from Herjolfsdalur, one of a small number of Icelandic sites with evidence of non-ferrous metallurgy, the other from a high-status farm at Sveigakot, which also produced evidence of metalworking (Gísladóttir and Vésteinsson 2008; Hansen et al. 2014, p. 131).

Streaks of iron were observed on two touchstones from our assemblage, in both cases along with streaks of non-ferrous metals (see Table 3). The question therefore remains as to whether the iron is from the Middle Ages or comes from the tools of archaeologists (for example, see Ježek and Holub 2014, p. 196; Ježek 2017, p. 107–108).

Conclusion

Five touchstones (25%) from our assemblage selected for SEM analysis did show streaks of precious metals. Three of these stones come from the most 'richly' furnished burials from Viking Age Iceland. This congruence is a rare situation in the European context (see Ježek 2017, p. 87). Generally, even observed streaks offer no clues as to the social rank of the deceased, who may never have used or even seen these (and other) tools. However, the metal streaks preserved on the Icelandic burial finds of touchstones offer no certainty as to their immediate origin, and they cannot serve as a source of knowledge for the local supply of non-ferrous metals. Two additional results come from settlement layers on sites with evidence for metal processing (Hofstaðir and Skuggi). Although it does not mean anything more than a reference to the social standing of the owners of these estates, the number of typical stone artefacts from Viking Age high-status farms and sites with evidence for metalworking in Iceland is apparent. For example, almost thirty touchstone candidates were

[5] Fishhooks occur already in prestige Late Bronze Age and Early Iron Age graves in Europe, including graves containing balances or weights (e.g. Graziadio 1991, p. 413; Pare 1999, p. 442, 449, 472; Stöllner 2007, p. 237, 246). As numerous European early medieval graves containing fishing gear are known, the following is merely one illustrative example: a young individual buried in the eleventh century at Sowinki (Greater Poland) with two harpoons, six fishhooks, balances, 18 weights and two touchstones. (Ježek et al. 2013, p. 181). In this context, the assemblage of fishing tools found together with human remains at the Late Mesolithic ritual site of Kanaljorden, Sweden (David 2018), is highly remarkable.

retrieved at Hofstaðir and up to twenty specimens at Hrísbrú. Dozens of similar stone artefacts from Icelandic production and/or elite sites serve as an indicator of local metalworking and/or exchange. The question remains as to why just two further analysed touchstones from this environment—and none of the burial finds—revealed grains of zinc (Herjolfsdalur and Sveigakot: for linear streaks of this metal, rare in European archaeology, and related problems; see Ježek 2016).

The number of Icelandic Viking Age grave finds of touchstones is striking. It is obvious that touchstones did not serve exclusively for testing non-ferrous metals, but also as a status symbol during the lifetime of their bearers, particularly the 'oversized' specimens and—in the Viking environment—the touchstones made of banded silt. Numerous ancient European graves furnished with tools used to determine the nature and value of metal, but also with forging tools, casting moulds, etc., document the situation that many individuals, both children and adults, encountered these and other objects for the first time in their own graves (e.g. Ježek 2017, p. 79–85). The presence or absence of these symbols in the grave inventory reveals nothing about the activities of the deceased while they were still alive. Gender or age aspects play no role in the Early Middle Ages in this case. The symbolic behaviour of the bereaved had much deeper motivation (Ježek 2017, p. 53–54). Utilising tools used to determine the value of metal at the moment of bidding final farewell, Icelandic Vikings simply kept to a habit imported from western Scandinavia, including the tradition of 'oversized' touchstones. From this point of view, the disproportion between the relatively high number of touchstones from Viking Age burials in Iceland and the local limited evidence for precious metal can be just regarded as the result of a local lack of precious metal. In societies suffering shortages, the prestige of desired objects increases as their availability decreases, and ethnology and plain human experience provide countless examples of the exaggerated significance of objects that are used when handling scarce resources.

In any case, regardless of whether the wishes of Icelandic Vikings were stronger than local reality could provide, the identification of touchstones from settlements and workshops is a necessary condition for the better understanding of Viking Age society in Iceland. Iceland provides a unique study case where these touchstones are more important than the burial finds of this type of artefact. We therefore recommend a focus on non-burial finds in future research on touchstones from medieval Iceland.

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