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Chapter 13

Evidence of Exchange Networks: the Combs and other Worked Skeletal Material

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with a contribution by Colleen E. Batey

13.1. Introduction

The collection of combs (including a single comb case) entails 34 finds, equating to a minimum of 26 original objects when cross-mending pieces are taken into account. Few of the combs are complete and many are highly fragmented. Nevertheless, this small assemblage is informative insofar as it implies networks of exchange and stylistic influence incorporating both Scandinavia and the Irish Sea region. Single-sided, double-sided, composite and one-piece combs are all represented, but the majority are of single-sided composite form. Here they are classified and discussed using Ashby's (2006; 2007; 2009; 2011; see Section 13.2 below) typology, devised to illuminate the chronology, place of manufacture and social significance of the combs of northern Britain in the Viking Age and Middle Ages. Reference is also made to Wiberg's (1977) typology, based on finds from Oslo, in order to provide subdivisions of the broadly defined Ashby Types 9 and 13.

Each comb is described individually below, with cross-mending pieces recorded and considered together (see Appendix 12.1 for the original find by find record). The terminology of Galloway (1976) and MacGregor (1985; MacGregor *et al.* 1999) is employed. Most Viking Age and medieval combs were of composite construction, with either one row of teeth (termed 'single-sided') or two ('double-sided'). They consisted of at least two 'connecting plates' that ran along the length of the comb, and a variable number of 'billets' (herein termed 'tooth plates' and 'end plates') that were secured between the connecting plates with rivets. Raw materials, comb form, and ornament — as well as the materials and placement of rivets — have all been shown to be regionally and chronologically distinctive (e.g. MacGregor 1985; Riddler 1990; Smirnova 2005; Ashby 2006). These characteristics are recorded below where possible.

There has been on-going uncertainty regarding the identification of reindeer (*Rangifer tarandus*) antler combs in Scotland (cf. Weber 1993; Graham-Campbell & Batey 1998, 222; Bond 2007b, 214; discussion in Barrett 2008, 420). Thus the author has conducted a study of raw material analysis (Ashby 2006). Using only low magnification it has proven possible to tentatively differentiate worked red deer (*Cervus elaphus*) and reindeer antler objects in those few cases where a cross-section of the distinctive transition between compact outer and cancellous inner tissue has been preserved (Fig. 13.1). The antlers of these two species are the main candidates for comb manufacture in the North Sea and Irish Sea regions. Elk (or moose, *Alces alces*) antler was an effective alternative around the Baltic, but it can usually be recognized, given its distinctive surface texture, density, fine core porosity and scale (Ambrosiani 1981, 36, 102–3; Smirnova 2005, 11–15; Ashby 2006, 76–98; see also Carlé *et al.* 1976; Gostenčnik 2003; Bartosiewicz 2005). Its use in objects has yet to be recognized in early medieval Britain, and it was not evident at Quoygrew. The remaining (non-perishable) likely raw material for the combs from Quoygrew is postcranial bone, which can also be recognized when characteristic features survive (Penniman 1952; O'Connor 1987).

In the event, only probable reindeer antler, undifferentiated antler, postcranial bone and undifferentiated bone or antler were recognized at Quoygrew. The probable reindeer antler identifications (on characteristically Scandinavian Type 9 combs) are not surprising given the existence of large-scale reindeer hunting infrastructure in medieval Norway (e.g. Mikkelsen 1994; Indrelid & Hufthammer 2011). The absence of definite identifications of red deer antler *is* surprising. It may relate to the highly fragmented nature of the characteristically 'western' Type 8 combs, for which use of this raw material (and/or bone) is to be expected (see Section 13.2 below). With the advent

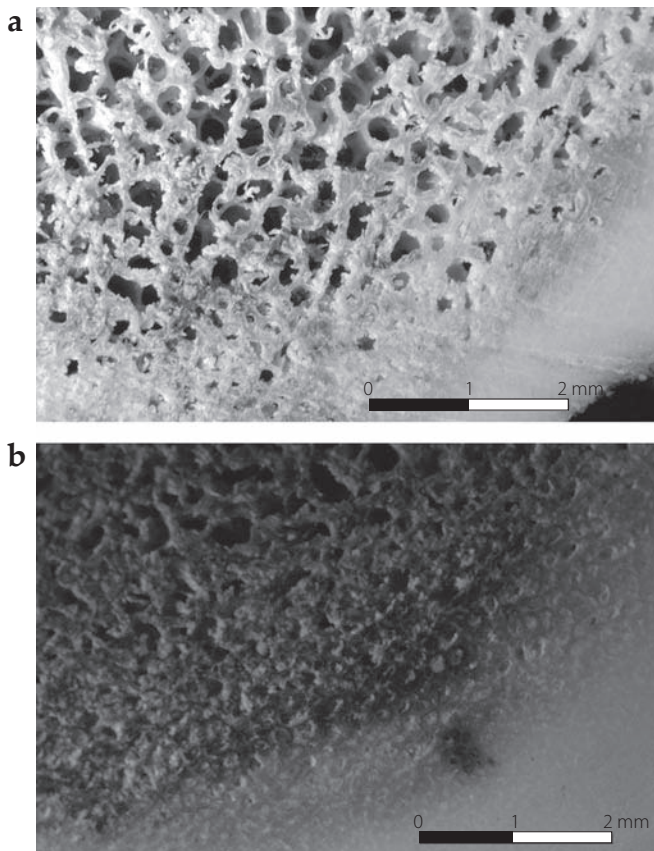


Figure 13.1. Reference specimens of (a) red deer and (b) reindeer antler. Note the discrete core-compacta margin in (a), and the much more diffuse, semi-porous transition zone in (b). These criteria were noted by Smirnova (2005) and corroborated in blind tests by Ashby (2006). (Image: Steve Ashby, after Ashby 2009.)

Table 13.1. Distribution of comb finds by type, raw material and phase.

Object type	Raw material	Phase					Total
		1	2	2-3	3	6	
Comb (Type 6)	Antler	1		1			2
Comb (Type 8a)	Bone or antler			2			2
Comb (Type 8a/9)	Bone or antler			1			1
Comb (Type 8c)	Bone			1			1
Comb (Type 8c)	Antler			8			8
Comb (Type 9)	Bone or antler		1				1
Comb (Type 9)	Antler		2		2		4
Comb (Type 9)	Probable reindeer antler		3	1	1		5
Comb (Type 13)	Antler				1		1
Comb (Type 14b)	Bone					1	1
Comb rivets (Type 9 or 13)	Copper alloy				1		1
Comb tooth	Bone or antler		1	4			5
Comb tooth?	Bone or antler			1			1
Comb case	Bone?			1			1
Total		1	7	20	5	1	34

of high-throughput biomolecular technologies, proteomic techniques such as ZooMS will soon provide a more reliable method for identifying bone/antler objects to species (van Doorn *et al.* 2011).

Table 13.1 shows the stratigraphic distribution of the Quoygrew comb fragments based on the number of registered finds. Table 13.2 provides both phasing and location information for the (smaller) number of individual combs recognized after cross-mends are taken into consideration. Raw material identifications are provided in both cases and the tables also include finds of isolated teeth (which are not otherwise discussed in the chapter). Most of the combs (and the comb case) were recovered from Phases 2 and 3 – with just single finds from Phase 1 and from a disturbed context of Phase 6.

13.2. The comb types

Before considering the combs in detail, it is appropriate to briefly consider the means of their classification. The typology developed by the author (Ashby 2006; 2007) is based on form (in profile and cross-section) and the raw material used for rivets. The original typology covers the period AD 700–1400, and includes 14 types, each with subtypes. For the present purpose, we need only discuss Types 6, 7, 8, 9, 13 and 14b (see Figs. 13.2 & 13.3). Each type has a defined geographical distribution (Fig. 13.2) and chronological range, and is further distinguished by trends in ornament and raw material use.

Type 6 combs are short (between 10 and 15 cm in length), with straight end plates, and have connecting plates that are plano-convex in profile, with a deep plano-convex cross-section. The type has been most famously discussed by Kristina Ambrosiani (1981), and has thus popularly been referred to as the ‘Ambrosiani B’ comb. Ambrosiani’s chronological synthesis (Ambrosiani 1981, 62, 64) identified the type as characteristic of the tenth century, and subsequent studies have supported this position. However, the type is widely distributed between Ireland and northeastern Europe, and Ambrosiani did not comment in detail on regional variation. In England, Type 6 combs are most frequently fixed with iron rivets, but rivets of copper alloy are commonly used in Scandinavia, and at Birka these are ubiquitous. Thus, contrary to Ambrosiani’s assumptions, there is evidence of regional variability in manufacturing practice in this form. Ambrosiani proposed that most examples from Scandinavian sites were manufactured in red deer antler, and this appears to hold true in England and Scotland.

Similarly, Type 7 combs are distinguished by a deep, plano-convex connecting plate section, but

Table 13.2. *Distribution of combs (after cross-mending) by type, raw material, phase and location.*

Comb type	Raw material	Farm Mound	House 5	House 5	House 5	House 5	Farm Mound	Fish Midden	Room 1	Room 3	West of Room 3	Area G3	Total
		Phase 1.2	Phase 2.2	Phase 2.3	Phase 2.4	Phase 3.1	Phase 2-3	Phase 2-3	Phase 3.2	Phase 3.2	Phase 3.2-3.6	Phase 6	
Type 6	Antler	1					1						2
Type 8a	Bone or antler							2					2
Type 8a/9	Bone or antler							1					1
Type 8c	Bone						1						1
Type 8c	Antler						3						3
Type 9	Bone or antler			1									1
Type 9	Antler			2						1			3
Type 9	Probable reindeer antler				1		1				1		3
Type 13	Antler								1				1
Type 14b	Bone											1	1
Comb case	Bone?							1					1
Comb rivets (Type 9 or 13)	Copper alloy					1							1
Comb tooth	Bone or antler		1				4						5
Comb tooth?	Bone or antler						1						1
Total		1	1	3	1	1	11	4	1	1	1	1	26

they are significantly larger than Type 6, and manufactured to a less tightly-controlled template. Indeed, they have a range of irregular profiles, some being markedly plano-convex, while others are relatively straight. They bear simple ornament, and are invariably fixed with iron rivets. Based on an Irish sample, Type 7 combs fit into Dunlevy's (1988) Class F2, where they are dated to the late ninth to twelfth centuries. In England, on the basis of sites such as Coppergate, York, most examples can be assigned to the tenth and eleventh centuries. Like Type 6, in England and Scotland, Type 7 combs seem to be overwhelmingly manufactured from red deer antler, though no detailed survey of material in Scandinavia has been undertaken.

Type 8 combs are broadly similar to Types 6 and 7 in general appearance, but they differ from these in terms of both connecting plate section and ornament. Overall, Type 8 combs can be dated to an extended period between the tenth and thirteenth centuries, but higher resolution is possible if one considers within-group variation (Fig. 13.3). Type 8a (which is characterized by connecting plates of triangular section) and Type 8b (with connecting plates of trapezoidal section), date to the tenth to twelfth centuries. Types 8a and 8b are known in both England and Ireland, but their relative chronology is unclear, and though it is likely that Type 8a is the precursor to Type 8b, a detailed

chronological survey is required before their degree of contemporaneity may be confidently ascertained. Type 8c combs may be related to both of the above, and also show similarities with Type 6, as their connecting plates have a deep plano-convex section, while they feature a rather square, inelegant profile, and tend to lack ornament. In Dunlevy's Irish corpus, they fit into class G (Dunlevy 1988, 367–8), and are dated to the period between the ninth and thirteenth centuries. However, they seem much more common in the later half of this range, and most date to the period between *c.* AD 1100 and 1300. Interestingly, they seem to have been common in Ireland in the thirteenth century (see in particular the collections from Waterford and Cork: Hurley & Scully 1997, 656–7), though their manufacture and use in England by this date seems to have dwindled. In terms of distribution, Type 8 combs seem most common in England and Ireland, and while they are known in Scandinavia and northern Europe, they are undoubtedly much more common on the southern coast of the Baltic than they are to the north of the Kattegat. Key continental collections come from Hedeby (Tempel 1970, Taf. 25, 39) and Wolin (Cnotliwy 1973: e.g. Ryc. 38 g). A detailed study of Irish, continental and Scandinavian material is needed, but in England and Scotland Type 8 combs are very largely manufactured in red deer antler.

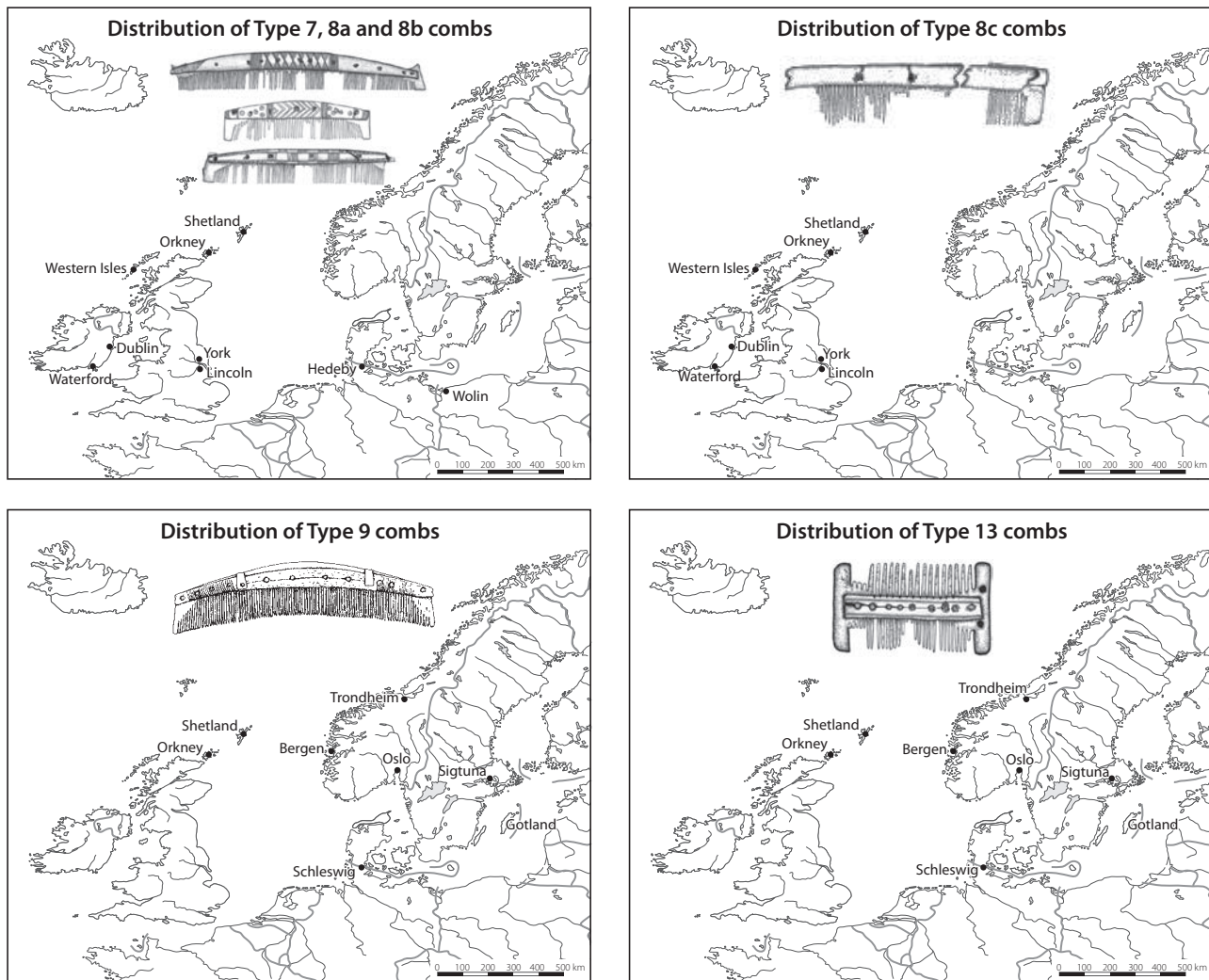


Figure 13.2. European distributions of comb types relevant to the discussion. Types 6 and 14 (not shown) are widely distributed throughout northern Europe. The maps show only key sites with large collections, and indicate general trends. (Image: Steve Ashby and Dora Kemp.)

Type 9 combs are well-made, single-sided combs, and are readily recognizable, according to two key traits: their lack of complex incised ornament, and the decorative use of copper-alloy rivets (occasionally combined with use of copper-alloy plate). Type 9 combs are frequent finds in Scandinavian contexts dating between the late-tenth and thirteenth centuries (see for example Ulbricht 1980; Flodin 1989), while they are well known in Atlantic Scotland (Curle 1982), and eastwards into western Russia (Smirnova 2005, fig. 3.36). Interestingly, the type is much more poorly represented in England and Ireland, and in these contexts examples are best interpreted as indicators of overseas trade and travel (Ashby 2006, 146–7). There is considerable diversity within the type (see Wiberg 1977; Flodin 1989), but no study has yet fully detailed

an internal chronology for this variation. The author's analyses of material in England, Scotland, and selected sites in Scandinavia, together with work undertaken by other researchers (e.g. Vretemark 1997) suggests the exploitation of both reindeer antler and postcranial bone, but in order that such patterning may be meaningfully discussed, a more systematic raw material survey of combs from around the North Sea and Baltic regions is necessary.

Type 13 combs differ from all of the above-discussed types, as they feature two rows of teeth (commonly referred to as double-sided). Like Type 9, they are well-crafted objects, and their teeth are differentiated, with one set of coarse, and one set of fine teeth. The latter in particular are demonstrative of both access to specialist tools, and a high level of skill

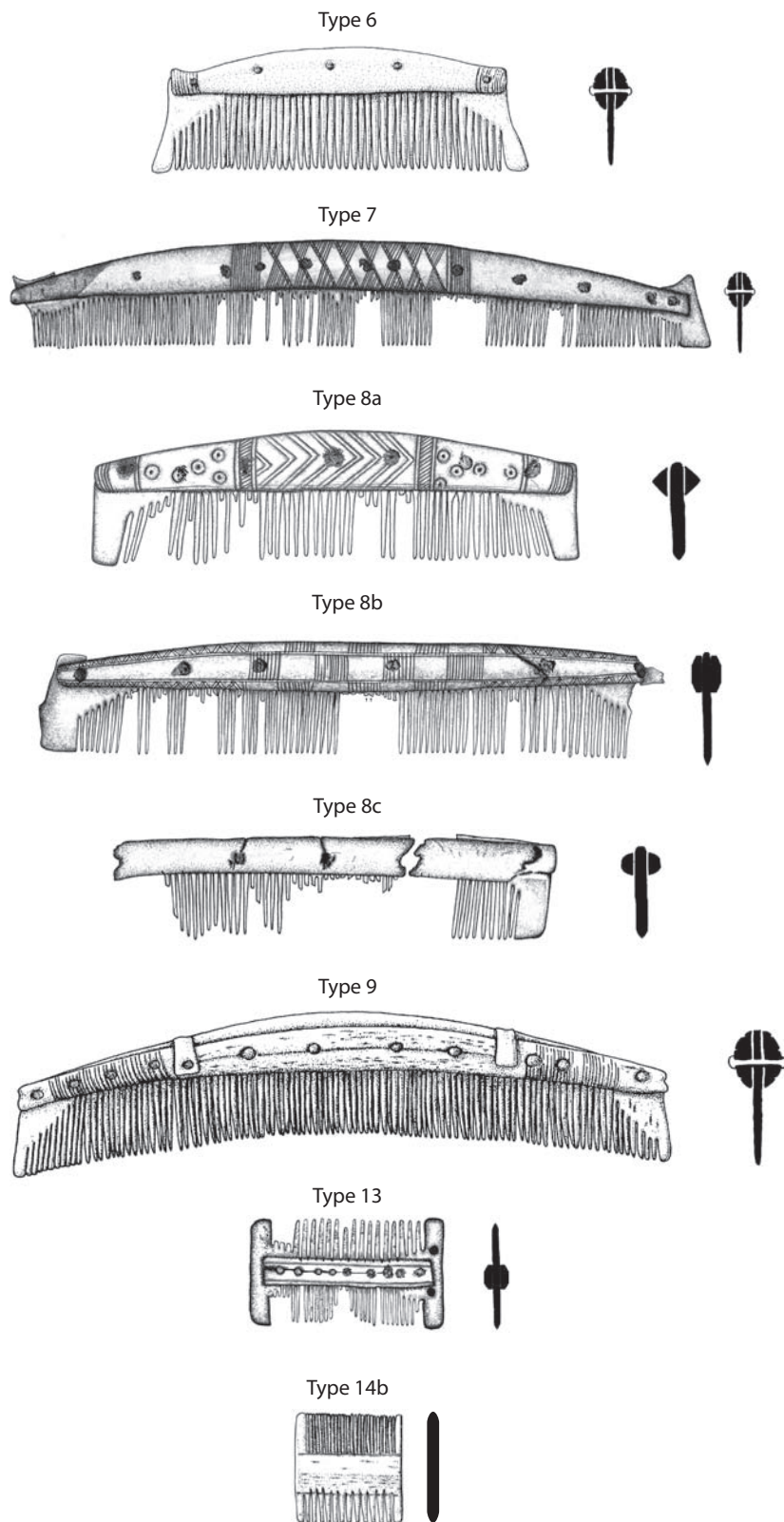


Figure 13.3. Typical examples of comb Types 6 (Birka), 7 (York), 8a (York), 8b (York), 8c (Durham), 9 (Trondheim), 13 (Freswick Links, Caithness) and 14b (York), together with schematic representations of their cross-sections. Not to scale. (Image: Steve Ashby, Richard Jackson, Hayley Saul and Pat Walsh.)

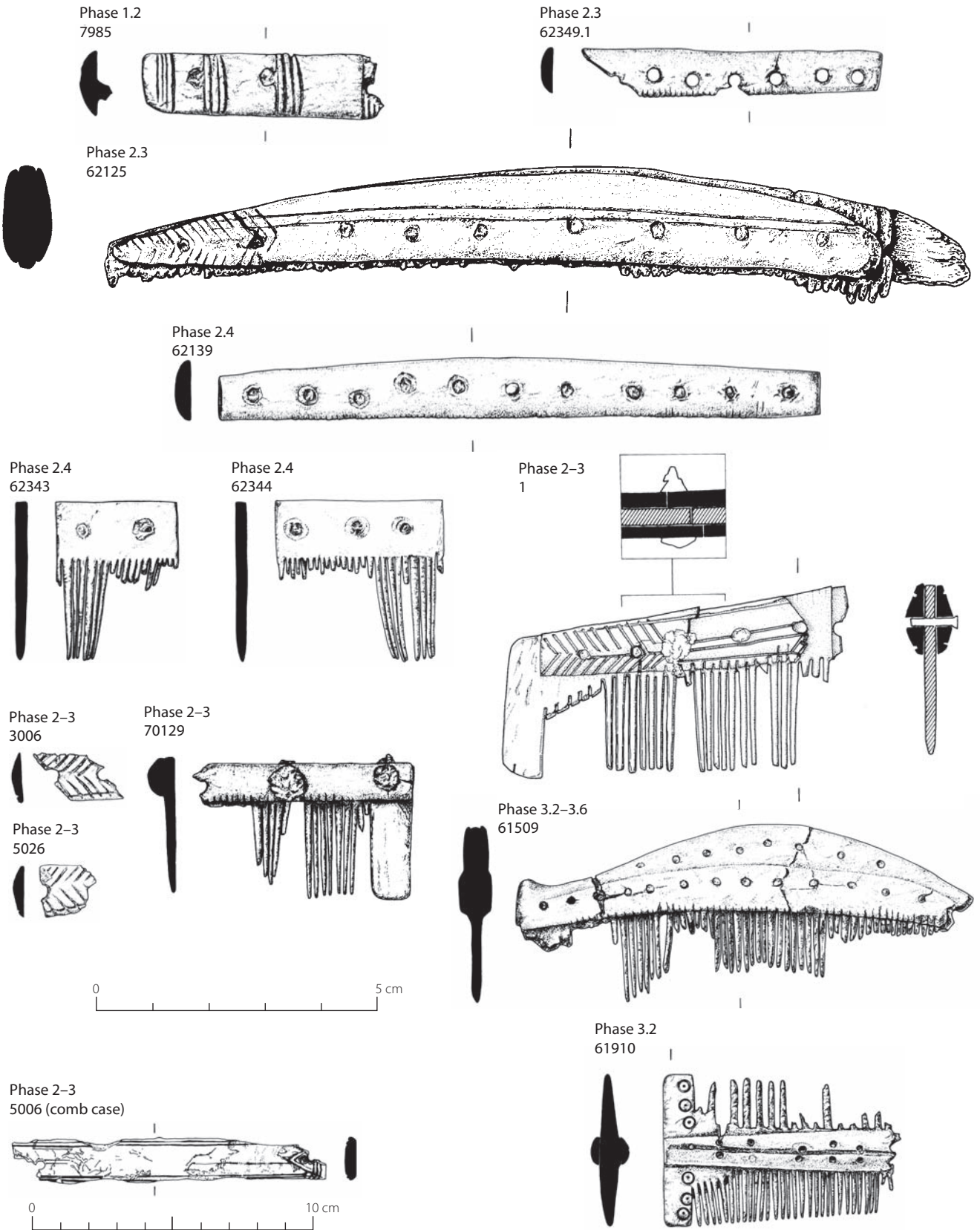


Figure 13.4. A selection of the 34 antler and bone comb and comb case finds from Quoygrew. (Image: Caitlin Evans and Dora Kemp.)

and experience. Type 13 combs are characterized by a restricted range of incised ornament. Instead, their ubiquitous copper-alloy rivets are often decoratively applied. They may be set at very short distances from one another, arranged in pairs, or in multiple rows. Like Type 9, this group is morphologically diverse, and in the absence of a satisfactory internal chronology, it suffices to say that the type emerged in Scandinavia in the twelfth century, and seems to have persisted as late as the fifteenth. Again, both reindeer antler and bone is known in the production of Type 13 combs, but we await a detailed systematic survey of raw material use.

Type 14 combs are also double-sided, but differ from Type 13 in that they are of one-piece (rather than composite) design. Three sub-types (14a–c) have been identified in northern Europe, but in the present context only one (14b) need concern us. Type 14b combs are small (generally less than 6 cm high) sub-rectangular combs with differentiated teeth. They are often referred to as nit combs. They seem to emerge in the fourteenth and fifteenth centuries, but really become numerically important in the post-medieval period, when they form the template for a diversity of combs in bone, horn, ivory, tortoiseshell, and a range of other materials. Most extant examples from the medieval period are of postcranial bone, but examples are also known in ivory (indeed, these are common in continental Europe), and it is likely that combs of analogous form were also produced in perishable materials such as horn and wood.

13.3. The comb finds

13.3.1. Phase 1

Sf. 7985

Find 7985 is a fragment of the terminal of an antler connecting plate from a Type 6 composite single-sided comb (Fig. 13.4). It is rather flattened in cross section relative to classic examples of Ambrosiani's (1981) B type, but is probably of comparable tenth- or eleventh-century date. It was secured with iron rivets, and is decorated with groups of incised vertical lines. Tooth cuts are indicative of a tooth gauge of 5 per cm. The cuts are not present all the way to the end of the connecting plate, suggesting that the teeth were graduated (getting shorter towards the end of the comb). The fragment is too small to assess riveting technique. It was found in Phase 1.2 of the Farm Mound midden and is thus (in stratigraphic terms) the earliest comb from the site.

13.3.2. Phase 2

Sf. 62125

Find 62125 is a large fragment of an antler single-sided composite comb of Ashby Type 9, Wiberg Type E5,

composed of two connecting plate fragments and seven tooth plates (Fig. 13.4). The antler has a woody texture that is suggestive of reindeer, but no definitive diagnostic criteria are preserved. The connecting plates are of plano-convex profile and complex, plano-piriform section. The better preserved of the two plates displays a pair of longitudinal incised lines and a field of oblique lines close to the terminal. It also features a row of eleven copper-alloy rivets (of which two have been lost, and are now represented only by perforations).

The comb is quite degraded, but as no teeth remain, comment on level of wear is inappropriate. Nonetheless, one may note that it would have had a relatively coarse tooth gauge. Measurement of tooth bases gives a density of 5 per cm. All in all, one might date the comb to between the late tenth and thirteenth centuries, and more likely towards the earlier end of this range. Close parallels from Trondheim date to the late tenth and eleventh centuries. This find was from the floor of House 5 in Phase 2.3.

Sfs. 62139, 62343 and 62344

Finds 62139, 62343 and 62344 represent the remains of a short, straight, single-sided composite comb, consisting of a single connecting plate (Sf. 62139) and two tooth plates (Sfs. 62343 and 62344) (Fig. 13.4). It is of Ashby Type 9, Wiberg Type E4. The comb is comparable with examples from Trondheim, where it is most common between the eleventh and twelfth centuries, though it does persist into the thirteenth. The raw material is antler, and the tooth plates preserve small areas of core margin that allow it to be identified as probable reindeer. The connecting plate is of shallow plano-convex section and plano-convex profile. It has no incised ornament, and its only decoration is a line of eleven closely-spaced copper-alloy rivets. Its teeth are very finely cut (9 per cm), and of straight profile, showing signs of moderate wear. The fragments of this comb were all found in the Phase 2.4 floor of House 5.

Sf. 62349.1

Find 62349.1 includes two small fragments from the antler connecting plate of a single-sided composite comb (probably Ashby Type 9, Wiberg Type E4) (Fig. 13.4). The single row of closely set perforations is suggestive of the decorative use of copper-alloy rivets, although no rivets or associated staining are extant. Tooth cuts indicate a gauge of 5 per cm, but are not present at the comb terminals, suggesting that the teeth were graduated. Based on Wiberg's typology, the comb is probably of eleventh- to thirteenth-century date and is of similar form to an example represented by Sfs. 62139, 62343 and 62344. It was found in a Phase 2.3 floor layer of House 5.

Sf. 62349.2

Find 62349.2 is a small fragment of single-sided composite comb (Ashby Type 9, Wiberg type unknown), consisting of three tooth plate fragments. Unfortunately, the degraded nature of the raw material precludes confident discrimination between bone and antler. The copper-alloy rivets are still present, and are closely set in a single row, but precise dating is not possible. As a Type 9 comb the find is nevertheless broadly consistent with a date between the late tenth and thirteenth centuries. It was found in a Phase 2.3 floor layer of House 5.

13.3.3. *Phases 2 to 3*

Sf. 1

Find 1 (Fig. 13.4) is a fragment of a composite single-sided comb that combines elements of two types. The comb's connecting plates have a gentle plano-convex profile, and triangular cross section. They are decorated with opposing oblique lines, forming chevron motifs. The rivets are arranged in a single, widely-spaced row, and consist of four copper-alloy rivets and one iron rivet. The latter probably represents a repair.

The comb is interesting, as it juxtaposes connecting plates of triangular section and incised chevron ornament (typical of Ashby Type 8a) with copper-alloy rivets (typical of Ashby Type 9). It thus combines the traditions of east and west (see Section 13.2). The find probably dates to sometime in the tenth to twelfth centuries, but it is difficult to suggest where it was manufactured. At least the repair, using an iron rivet, is likely to be a relatively local rather than Scandinavian modification. The comb was found eroding out of the Fish Midden at the shore-line.

Sf. 3006

Find 3006 is a small fragment of a connecting plate from a composite single-sided comb of Ashby Type 8a, dating to the tenth–twelfth centuries (Fig. 13.4). It is decorated with opposing oblique lines either side of the plate's median ridge. The fragment is blackened from burning, which, together with its high level of fragmentation, is indicative of the comb having found its way into a hearth before being disposed of in a midden. Given this state of preservation, it is impossible to identify the raw material beyond the level of 'bone/antler'. It is from Area C of the coastal Fish Midden.

Sf. 5006

Find 5006 is part of a (probably bone) connecting plate from a case for a single-sided composite comb (Fig. 13.4). There are roughly inscribed marginal lines along the plate edges, and iron rivets are present at the plate terminals, confirming its attribution as a comb case. In

its entirety, the case would have comprised four such connecting plates, secured to a pair of end plates. Such cases were popular across Scandinavian Europe in the tenth and eleventh centuries (e.g. Wiberg 1977, figs. 19–20; Smirnova 2005, 41–6), and there are good examples from Earl's Bu (see Batey & Freeman 1986; Batey & Morris 1992) and Skail Bay, Sandwick (Lysight 1971) in Atlantic Scotland. Many such cases were made for use with Type 6 combs. It was found in Area E of the coastal Fish Midden.

Sf. 5026

Find 5026 is a connecting plate fragment from a composite single-sided comb of Ashby Type 8a, decorated with chevrons, and dating to the tenth–twelfth centuries (Fig. 13.4). It is very similar to Sf. 3006, and is a fragment of similar size, but is unburned, and the contexts are so displaced from one another that it seems improbable that they relate to the same comb. The fragment is too small to preserve diagnostic raw material attributes, though its polished finish is suggestive of the use of postcranial bone. It is from Area E of the coastal Fish Midden.

Sf. 70007

Find 70007 is a fragment of connecting plate from a composite single-sided comb. It is undecorated, of straight profile, and has a rather flattened plano-convex section. Interestingly, the comb has copper-alloy (rather than iron) rivets. It is best classified as Ashby Type 6 in form, but it is not a classic Ambrosiani B comb. The surface is abraded. It is antler, but identification to deer species is not possible. The tooth density would have been 6 per cm, based on tooth cuts. It is from the Farm Mound midden.

Sf. 70083

Find 70083 is a tooth plate from a composite single-sided comb of Ashby Type 9. The plate's morphology is suggestive of an early form of the type (Wiberg Types E1, E2 or E5), and the teeth have a gauge of 6 per cm, which fits as an intermediate step between Viking Age (*c.* 5 per cm) and medieval (*c.* 8–9 per cm) forms (see below). The raw material is probably reindeer antler. The comb was found in the Farm Mound midden.

Sf. 70088

Find 70088 is a fragment of antler connecting plate from a composite single-sided comb of Ashby Type 8c (twelfth or thirteenth century in date). The fragment is of plano-convex section, and, other than a row of regular tooth cuts (8 per cm), is completely undecorated. There are traces of two rivet holes, which are fairly close together, perhaps suggesting that when

complete there was at least one rivet per tooth-plate. The comb is from the Farm Mound midden.

Sf. 70129

Find 70129 represents six fragments of connecting plate and two tooth-plates from a composite single-sided comb of Ashby Type 8c, which can be dated typologically to the twelfth or thirteenth centuries (Fig. 13.4). All of the fragments are probably made of antler. The connecting plate is straight and undecorated, and of plano-convex section. Tooth-cuts indicate a tooth density of 8 per cm, while the teeth display a distinctive tapering profile that is in marked contrast to the lentoid shape of the teeth of the other (particularly Type 9) combs from the site. Three iron rivets remain. The find is from the Farm Mound midden.

Sfs. 70189, 70190, 70191, 70192, 70193 and 70194

These finds represent pieces of connecting plate and tooth plate from an antler composite single-sided comb of Ashby Type 8c, dating to the twelfth or thirteenth centuries. The connecting plate fragments are straight, undecorated, with an uneven, almost 'unfinished' surface, and of shallow plano-convex section. There are seven iron rivets remaining. The comb is from the Farm Mound midden.

Sf. 70264

Find 70264 is an end plate from a composite bone comb, possibly of Ashby Type 8c (and thus probably dating to the twelfth or thirteenth centuries). The plate has a straight, gently sloping upper edge, and its face is recessed in order to help secure the connecting plates that would have been riveted to it. Based on the positioning of the recess, the connecting plate terminals would have been positioned c. 5 mm in from the edge of the comb. The find is from the Farm Mound midden.

13.3.4. Phase 3

Sf. 61509

Find 61509 is a mostly complete single-sided, round-backed composite comb (Ashby Type 9), made of antler (probably reindeer), and secured and decorated with rows of copper-alloy rivets (Figs. 4.26 & 13.4). According to Wiberg's (1977) classification of these combs, find 61509 fits into Type E5-3, a long-lived class in Scandinavia (common in contexts dating between the late tenth and thirteenth centuries, though most important in the twelfth century: see Flodin 1989, fig. 44; Hansen 2005, 181). The comb's connecting plate is of a form best described as 'false-ribbed' (see MacGregor 1985). That is to say that it is sculpted such that there is a thin, semi-circular field at the top of the comb,

with a raised slightly curved area just above the teeth, in effect mimicking a more conventional connecting plate. The margins of the entire connecting plate are lined with closely-set copper-alloy rivets. The teeth have a fine gauge (8 per cm), and though the comb has suffered some tooth loss, those still extant have a lentoid section, and show medium levels of beading, consistent with relatively frequent use over a period of time. This comb was found adjacent to the west gable of Room 3 in the uppermost layer of the coastal Fish Midden (context F647). It thus marks the typological end of the accumulation of this midden (see Chapter 4).

Close parallels can be found in Trondheim, Bergen, Oslo, Schleswig, and the other late Viking Age towns of Scandinavia (e.g. Wiberg 1977, 206–7; Grieg 1933, 233, fig. 196) — from which this comb was probably imported as a finished object. Other examples from Scottish sites are not well stratified. There is a similar comb from the 'upper Norse horizon' at the Brough of Birsay (Curle 1982, Ill 49, 230), and another from Freswick Links, Caithness (Batey 1987, 225, pl. 33A).

Sf. 61910

Find 61910 is a large fragment of a double-sided composite comb, composed of two connecting plate fragments and two tooth plates (Fig. 13.4). The material is antler, which has been highly polished. The connecting plates are straight, of deep plano-convex section, with a double line of copper-alloy rivets set either side of a central longitudinal groove. The rivets are arranged into vertical pairs, and the connecting plate's green staining is quite extensive. The comb's teeth are differentiated (9 per cm on one edge, 5 per cm on the other) and of lentoid section. The one remaining end plate is straight-ended, and decorated with short lines of ring-and-dot motifs. Typologically the comb fits into Ashby Type 13, Wiberg Type D2. It was found in a Phase 3.2 floor layer of Room 1, and is (in stratigraphic terms) one of the earliest datable objects from House 1.

Close parallels are known from Scandinavian towns such as Trondheim (Flodin 1989, Ill 29), Bergen (Grieg 1933, 234–41) and Oslo (Wiberg 1977, fig. 24), and from as far afield as Novgorod (Smirnova 2005, 250–309). In the British Isles there are examples from elsewhere in Atlantic Scotland, including Jarlshof (Hamilton 1956, pl. 32) and Freswick Links (Batey 1987, 227). Most can be dated to the period between the twelfth and fourteenth centuries.

Sf. 62161

Find 62161 represents tiny fragments of copper-alloy with bone or antler preserved in the corrosion product.

The fragments almost certainly relate to a copper-alloy riveted composite comb. However, it is impossible to discern whether the comb concerned was single-sided (Type 9) or double-sided (Type 13). It is from Phase 3.1, the levelling of House 5 in order to build Room 3 of House 1.

Sfs. 62185 and 62341

Finds 62185 and 62341 represent a fragmentary composite single-sided comb of Ashby Type 9, Wiberg Type E4, consisting of two degraded and incomplete fragments of connecting plate of rectangular profile and relatively flat section, marked by a pair of deep longitudinal grooves close to the plate margins. Roughly incised tooth-cuts are evident along one edge, and are suggestive of a fine gauge (8 teeth per cm). The plates are made of antler. No rivets are preserved, and there is no evidence of iron-staining. This, together with the close-set arrangement of rivet perforations, is consistent with the use of copper-alloy rivets. Both Sf. 62185 and Sf. 62341 were recovered from the fill of a drain in Room 3 dating to Phase 3.2.

In its entirety, the comb would have had a straight profile, and a relatively plain, unornamented appearance. Similar examples are known from Trondheim (Flodin 1989, Ill 18), while one might also compare it to similar iron-riveted examples (Ashby Type 8c) known from Ireland and England (though these lack the close-set arrangement of rivets indicated by the perforations visible on this piece; see Dunlevy 1988, fig 9.2; Hurley & Scully 1997, figs. 17.1 & 17.2; Carver 1979). Typologically this comb is consistent with production and use in the twelfth-thirteenth centuries.

13.3.5. Phase 6

Sf. 70306

Find 70306 is a fragment of a double-sided bone comb. The comb's section is flat, and the teeth are of approximately equal density on each side (10/11 per cm). It probably represents a one-piece, double-sided comb (Ashby Type 14b), which could be dated to the fourteenth or fifteenth centuries. The fragment is small and poorly preserved, and there are no traces of ornament. It is from a disturbed (Phase 6) context in Area G.

13.4. The Quoygrew combs: discussion

The most common comb form at Quoygrew is Type 9, with at least seven original objects represented by 10 find groups (Tables 13.1 & 13.2). A variety of Wiberg's subclasses of this type are represented. Type 8a and 8c combs are almost as abundant at the site, with at

least six examples represented by 11 finds. Types 6, 13, and 14b are also present, but are represented by only one or two combs each.

The combs are manufactured with proficiency, though highly elaborate examples are not present. They are fastened with either copper-alloy or iron rivets (in only one example, a repair, on the same find). The level of tooth beading and wear is consistent with normal use. The trend for Type 8 combs to have teeth of tapering rather than lentoid section is notable, and has not (to the author's knowledge) been observed previously. However, only future studies will confirm whether this distinction between the types is a widespread pattern. Although the sample size is small, there are changes in tooth gauge through (typological) time — from c. 5 teeth per cm in Type 6, through 6–9 teeth per cm in Type 9, and 10–11 teeth per cm in Type 14b.

A small number of combs were made of bone (or of undifferentiated bone/antler). Some may have been manufactured locally, but most or all were probably imported as finished objects. No comb-making residues, blanks or semi-manufactures were found at Quoygrew, nor have any been recorded at most other sites in the Northern Isles. The exceptions known to the author are two blanks from Trench 1, Castle of Snusgar in Skail Bay, Orkney (David Griffiths pers. comm.) and one from the Brough of Birsay, Orkney (Batey pers. comm.). Although we must be careful to avoid over-interpretation of an absence of evidence, these pieces are not indicative of manufacture on any significant scale and may instead imply local repair.

The majority of the combs are of antler. However, this raw material could only occasionally be identified to species. The Type 9 and 13 combs were highly finished (and thus preserve few diagnostic features) and the Type 6 and 8 combs were highly fragmented. Nevertheless, several Type 9 finds were probably of reindeer antler and thus imports from Scandinavia — an interpretation consistent with the stylistic evidence.

The other antler combs could have been manufactured using material from either reindeer or red deer. In either case most are also likely to be imports, given both the lack of working debris and the observation that red deer were probably extirpated from Orkney during the Viking Age (Bond 2007b, 214; see Chapter 8). Apart from the combs there is only one definite find of antler from Quoygrew — a knife handle from Phases 2 to 3 (see Section 13.5 below). There was also one probable and one definite identification of red deer bone, but both specimens were from the earliest occupation of the site (Phase 1 of the Farm

Mound) (Chapter 8). Red deer did, however, remain regionally available elsewhere in Britain and Ireland. Thus the combs made of undifferentiated antler could have come from a broad range of potential sources based on raw material alone.

Overall, the absence of pre-Viking Age and early Viking Age comb types (e.g. 1c, 5, 11, and 12; see Ashby 2006) supports the site's late Viking Age to medieval date. The main period of comb import at Quoygreew was clearly between the tenth and fourteenth centuries based on the finds of Types 6, 8, 9 and 13. The predominance of Type 9 rather than Type 13 combs may further imply that this principal date range can be narrowed to the eleventh to thirteenth centuries. Only one late medieval comb was found (probably a Type 14b of fourteenth- to fifteenth-century date, but residual in a Phase 6 context).

The majority of the combs came from Phase 2 and 3 contexts, and no Type 8 or 9 combs were recovered outside of these phases. In fact the well-stratified combs are mostly from Phase 2 and the very beginning of Phase 3. Only four combs were found in Phase 3 contexts, of which three were from the earliest deposits of the phase (Table 13.2) and the third (Sf. 61509) is unlikely to date later than the thirteenth century on typological grounds. The absence of any well-stratified fragments of imported combs from later in Phase 3 or from Phase 4 is particularly significant given that the relevant strata are mostly house-floor deposits (otherwise a source of many comb finds) with good bone preservation. Presumably alternatives of perishable material were employed during the fourteenth to sixteenth centuries.

Many of the combs from Quoygreew evoke a vision of a northern- and eastern-facing society. The Type 9 and 13 examples are best interpreted as direct imports from Scandinavia or personal possessions acquired there. They were very probably manufactured in the towns of late Viking Age and medieval Norway, such as Bergen, Trondheim and Oslo.

The examples of Type 8a and 8c combs probably indicate that there was also contact with Ireland and/or England in the period between the tenth century (when the presence of Type 8a is first evidenced) and the thirteenth century (by which time both forms are uncommon in England, though Type 8c still appears to be an important product in Irish towns such as Waterford; see Hurley & Scully 1997, 656–7). However, the absence of Ashby Type 7 combs, found in Dublin (Dunlevy 1988, 364–6) and York (MacGregor *et al.* 1999, figs. 884, 889) is curious in this regard. It may imply another source, with the Outer Hebrides (Clarke *et al.* 2005, 171) or Whithorn (Nicholson 1997a) on the western seaways being two potential

candidates. However, the fact that Type 8b combs (which co-occur with Types 8a and 8c at sites like Whithorn) are similarly absent at Quoygreew reminds one that random chance will play an important role in the composition of such a small assemblage. Thus the Type 8 combs from Quoygreew indicate exchange with the west and south regardless of their specific source.

Although the combs were recovered from both house floors and middens (the two main kinds of deposit at Quoygreew) there is variation in the types recovered from each. All six of the Type 8a and 8c combs were from middens whereas five of the seven Type 9 combs were from interior deposits. It is very difficult to construe this as a chronological pattern. For example, the Fish Midden (with two Type 8 combs), accumulated around House 5 (containing four Type 9 combs) yet it was capped by a stratum including an almost complete Type 9 comb. Given the small numbers involved the distinction between middens and houses is probably more spurious than meaningful. Alternatively, the occupants of House 5 (and perhaps the earliest phase of House 1, which included one Type 9 and one Type 13 comb) had atypical access to Scandinavian imports — with other users of the settlement employing Type 8 combs of British or Irish provenance.

The overall paucity of Type 13 combs from Quoygreew is also interesting. Other sites in the Northern Isles and Caithness have yielded larger numbers (cf. Clarke & Heald 2002), and the author has recorded 49 examples from across Atlantic Scotland, with the majority (44) coming from Caithness and the Northern Isles. The fact that only a single Type 13 comb was found at Quoygreew may not in itself be significant, as recent excavations at sites of comparable date have similarly failed to recover large numbers of Type 13 combs (there are only three examples from Pool, Sanday, and, in western Scotland, only three in the large collection from Bornais, South Uist). However, the type is better represented at Jarlshof, Shetland (8), while the largest collection in Atlantic Scotland comes from Freswick Links, Caithness (17). Continuing access to Scandinavian imports is to be expected in Shetland, which came under direct Norwegian rule at the end of the twelfth century (Chapter 2), but the situation at Freswick Links (Batey 1987, 227) is harder to explain. The Caithness examples are viewed by Batey as part of a continuing close political link with Norway in the face of increasing Scottification of the north. Clearly there were very local differences in the networks of trade and/or personal connections along which these combs travelled.

13.5. Other worked skeletal materials

by Colleen E. Batey

In addition to the combs, 47 other objects of worked antler and bone were found at Quooygrew (Table 13.3). Thirty-three were of land mammal bone and 13 were of whale bone. One or two were of antler. The objects represented are diverse in form and chronology. Many are typical of Viking Age and medieval sites in Atlantic Scotland and were probably made locally. The reworked weaving sword is unusual for a Scottish settlement site and may be a Norwegian import.

13.5.1. Bone pins, points and needle

This collection of 14 finds can be sub-divided into a number of categories. The most numerous are simple pins, including rough-outs, with broad flat heads which in some cases are perforated (Sfs. 5003, 5009, 7678, 62232.1, 62232.2, 62233, 70108 and 70262). Two examples are illustrated in Figure 13.5. Most are small, roughly made and presumably expedient objects used for a variety of purposes. Simple bone pins with flat splayed heads (made from pig fibulae, for example) can be of any date, but are typical of Viking Age phases in sites from the Northern Isles (e.g. Hamilton 1956, fig. 59, 126; Smith 2007b, 472–83). Perforated examples are specifically characteristic of the Viking Age at Pool on Sanday (Smith 2007b, 481).

One larger and more finely manufactured bone pin was recovered in 1978 from a test pit dug in the Fish Midden by Sarah Colley (1983; pers. comm.). It is not included in Table 13.3, but is illustrated in Figure 13.5. The pin, 125 mm long, is complete and polished.

It has a flattened head with circular perforation and notched edges to form a roughly triangular upper area of the pin head. It has an almost identical parallel from medieval Oslo (Lie 1988, 190). One tip and shank from the 1997 to 2005 excavations (Sf. 70107, from Phase 1.2 of the Farm Mound) is well-formed and may also be from a large pin of this type, but it lacks its diagnostic head.

Two well-formed nail-headed pins (Sfs. 7686 and 7694), with round shanks and flat round heads, were recovered from Phase 1.2 of the Farm Mound (Fig. 13.5). These simple objects are interesting insofar as they may be characteristic of early Viking Age contexts in Atlantic Scotland. Similar examples are known from the transitional Pictish to Viking Age phases of Buckquoy in Birsay (Ritchie 1977, 193) and the Pictish to Scandinavian 'interface' phase (7.2) of Pool in Sanday (Smith 2007b, 478–9). The type has been tentatively dated to the tenth century in discussion of a similar find from Whithorn in southwest Scotland (Nicholson 1997b, 496–7). A single fine bone needle with a circular perforation, Sf. 70039 from Phases 2 to 3 of the Farm Mound, was also found (Fig. 13.5).

13.5.2. Miscellaneous worked antler and bone

A simple section of hollowed antler (Sf. 7963 from Phases 2 to 3 of the Farm Mound) is interpreted as a knife handle. Find 70188 from Phase 1.2 of the Farm Mound is half of a pointed object with a flat base. It is of antler or bone which has been cut and polished, perhaps to create a gaming piece. Small conical stone gaming pieces of Late Iron Age (Pictish) date are known from Scalloway and Old Scatness in Shetland

Table 13.3. Distribution of other worked bone objects by type, raw material and phase.

Object type	Raw material	Phase										Unphased	Total
		1	2	2-3	3	3-4	4	4-5	5-6	6	7		
Pin	Bone	5	3	2	1						1		12
Point	Bone		1										1
Needle	Bone			1									1
Knife handle	Antler			1									1
Gaming piece	Bone or antler	1											1
Gaming piece/whorl	Bone		1	1									2
Femur head spindle whorl	Bone				2		1						3
Button	Bone								1	3	3		7
Toggle	Bone							1					1
Worked bone	Bone					1	2	1				1	5
Vertebral disc (perforated)	Whale bone			3	1			1					5
Vertebral disc (unperforated)	Whale bone			1									1
Weaving sword	Whale bone		1										1
Spindle whorl	Whale bone				1						1		2
Rope shortener or swivel	Whale bone						1						1
Pivot?	Whale bone							1					1
Worked whale bone	Whale bone	1		1									2
Total		7	6	10	5	1	2	5	2	3	5	1	47

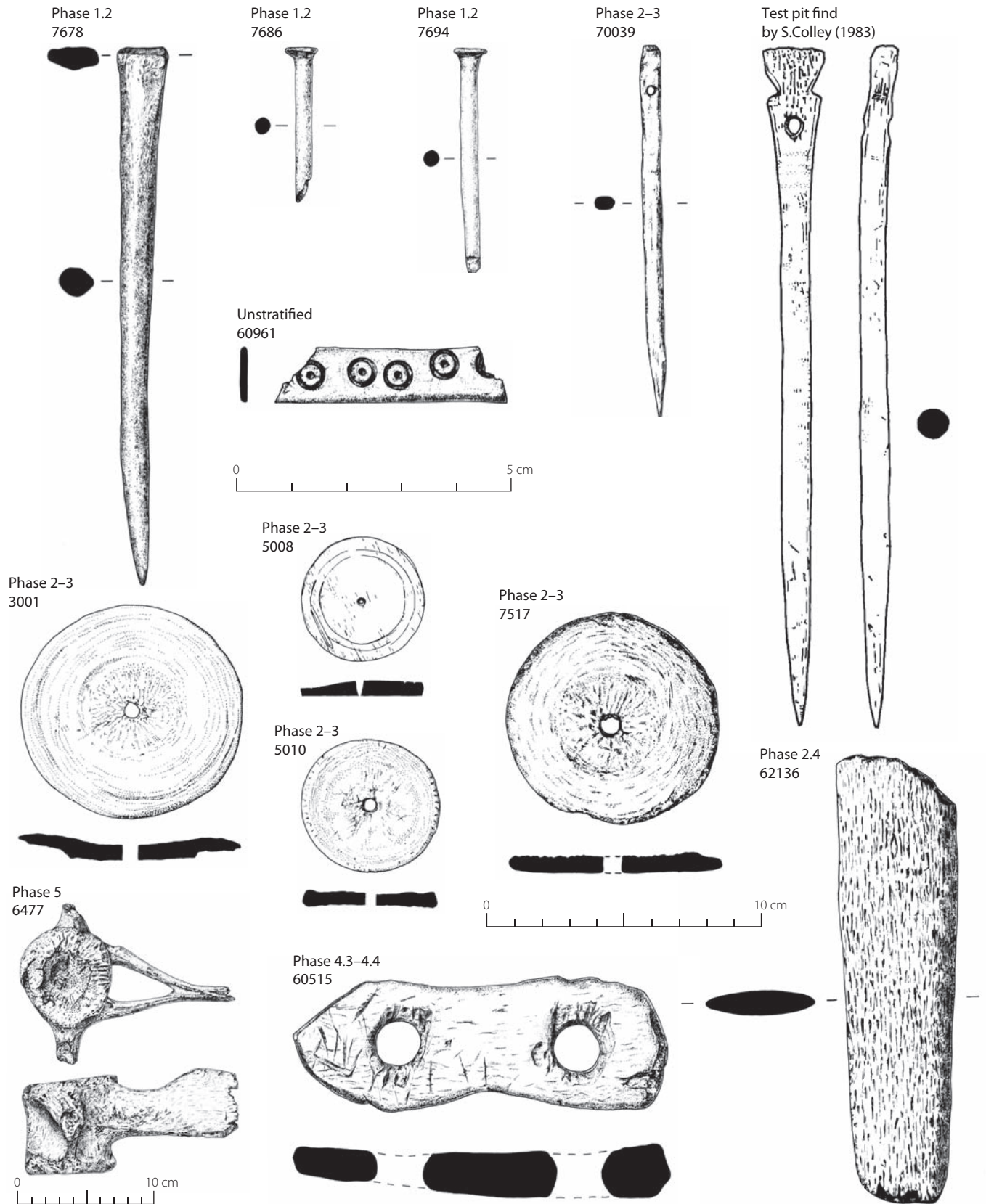


Figure 13.5. A selection of the 47 worked bone objects from Quoygreu. (Image: Caitlin Evans and Dora Kemp.)

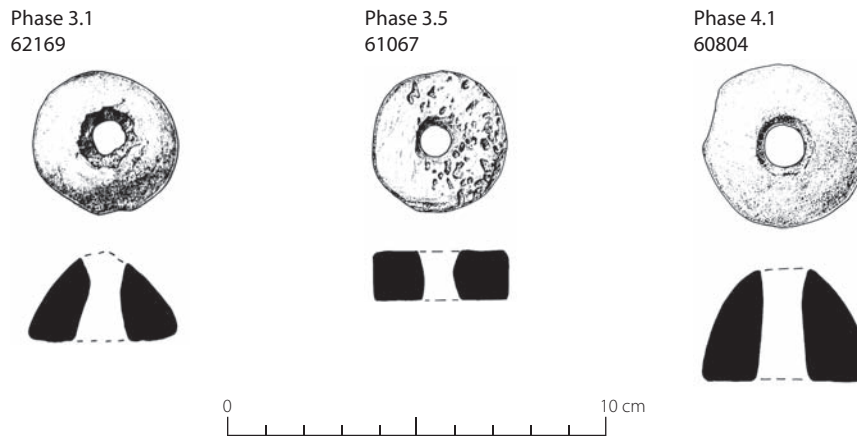


Figure 13.6. A selection of the five bone spindle whorls from Quoygrew. (Image: Caitlin Evans and Dora Kemp.)

(Wilson & Watson 1998; Forster 2010, 261). Poorly dated Iron Age examples in antler and bone were recovered from the Broch of Burrian in North Ronaldsay, Orkney (MacGregor 1974, 88–9). A second probable gaming piece (Sf. 5008, of bone) was a smooth flat disc, 45 mm in diameter, with a tiny perforation in the middle and two concentric rings incised around the outer edge (Fig. 13.5). It was from Phases 2 to 3 of the Fish Midden. An alternative interpretation as an incompletely manufactured spindle whorl is also possible. A simpler bone object of similar form (Sf. 62351) from Phase 2.2 of House 5 could also have been intended as either a gaming piece or a spindle whorl.

Three unambiguous spindle whorls of bone were made from femur heads: Sfs. 60804, 61851 and 62169, from Phases 3 and 4 (Fig. 13.6). Objects like these are known from sites of Iron Age to medieval date (e.g. Young & Richardson 1960, 155 no. 42; Batey 1987, 435; Mahany *et al.* 1982, 52 no. 6). Becker (2005, 157ff.) argues on the basis of Bronze Age examples that they may have functioned as buttons, although in this context the original identification of spindle whorl is preferred.

Find 60961, unstratified from Area G, is a small flat fragment of bone with incised ring-and-dot decoration on its upper face (Fig. 13.5). It is clearly not part of a comb and may have served as a mount, part of a box or even a trial piece (cf. MacGregor *et al.* 1999, 1952–63). Several other pieces of polished or perforated bone are of uncertain function (Sfs. 6035, 60403, 62047, 62113). Seven bone buttons from Quoygrew are all from Phases 5 to 6 or disturbed topsoil contexts (Table 13.3).

13.5.3. Worked whale bone

Thirteen finds of whale bone have been identified at Quoygrew. This material occurs in small quantities

in assemblages of all periods from Atlantic Scotland (Mulville 2002; Szabo 2008, 151). It provides an easily-worked and readily available resource suited to the production of items of several forms – for structural objects such as pivot blocks and for portable items ranging from spindle whorls to simple butchers' blocks. The Quoygrew assemblage includes epiphyseal discs from the vertebrae of small whales (which are in most cases perforated but otherwise unworked), a modified section of weaving sword, spindle whorls, a rope swivel, a possible pivot and worked fragments.

Six epiphyseal discs from the vertebrae of small whales were found, five with small central perforations (Sfs. 3001, 5010, 7517, 61793, 62155) and one without (Sf. 5013) (Fig. 13.5). They range in diameter from 50 mm to 88 mm. The perforated examples represent a local practice originally of pre-Viking Age origin. Similar examples have been recorded from Iron Age phases at Clickhimin Broch (Hamilton 1968, e.g. fig. 38 no. 22) and Jarlshof (Hamilton 1956, fig. 37 no. 9) in Shetland. At Pool on Sanday they were recovered from both pre-Viking Age and Iron Age to Viking Age 'interface' phases (Smith 2007, 506–8). An unstratified example is also known from the Pictish to medieval site of Freswick Links in Caithness (Batey 1987, 217). At Quoygrew, five of the six finds are from Phases 2 to 3. The sixth example may be residual in its Phase 4 to 5 context. Their function is uncertain, but these objects could have served as whorls or (with wooden handles) pot lids (Smith 2007b, 507).

A modified section of a whale bone weaving sword or 'batten' (Sf. 62136) was recovered from the Phase 2.4 floor of House 5 (Fig. 13.5). Complete objects of this type, used for beating the weft while weaving on an upright loom, are best known from Norwegian female graves of Viking Age date. A discussion of weaving battens focusing on the discovery of an iron

example from Scar on Sanday (Owen & Dalland 1999, 91–2) cites the recovery of ‘swords made from the bone of a large fish’ from Westray graves (presumed to be Pierowall) by Barry in 1805. Most whale bone weaving swords are from northern Norway, with iron examples more common in southern Norway. However, examples in whale bone are also known from medieval Bergen (Øye 1988, 70–72). The Quoygrew specimen has been shortened, with the narrower end of the tapering piece showing trimming to form a rounded edge, but it retains its smoothed broad surfaces and sharp long edges.

There are two whale bone spindle whorls, both in the form of flat discs: find 61067 (from a Phase 3.5 floor layer of Room 1 in House 1) and find 61561 (from a rabbit burrow west of House 1) (Fig. 13.6). The stratified example has been shaped crudely by a knife. The unstratified whorl is more carefully manufactured by trimming the epiphyseal disc of a small whale vertebra (see above). It is not common to use whale bone for this kind of item. In a study of bone whorls from Coppergate’s Viking Age layers, of 56

examined none were of whale bone (MacGregor *et al.* 1999, 1964). At Freswick Links in Caithness a single whorl of whale bone was identified in an assemblage of 16 bone examples (Batey 1987, 201, fig. 38A). Flat whorls are common in Viking Age and medieval sites from the Northern Isles, but typically made of reused steatite vessel sherds (see Chapter 12).

Find 60515 is a rectilinear object 135 mm long with large perforations (with knife marks and signs of wear) at each end (Fig. 13.5). It would have served as a rope shortener or swivel. A close parallel has been noted from a Viking Age level at the Brough of Birsay (Curle 1982, ill. 50 no. 279). The Quoygrew example, however, is from Phase 4 and thus of fifteenth- to sixteenth-century date unless residual. Find 6477 (from a demolition layer in Room 1 of House 1) is a small whale vertebra that has been hollowed out on one surface (Fig. 13.5). It may have served as a door-pivot, although small for that function, or as a box (cf. Smith 1998, 137). Lastly, there are two pieces of incompletely worked whale bone: find 7907 from Phase 1.1 and find 7953 from Phases 2 to 3 (both of the Farm Mound).

