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Viking ships with angular stems: Did the Old Norse term *beit* refer to early sailing ships?

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This article discusses a certain type of ship known from Scandinavian Viking Age and Merovingian Period iconography. This type of ship has a vertical stem and stern that meet the keel at right angles, sometimes with an extension filling the space under a sloping forefoot and a similar extension at the rear end of the keel. This design seems to be connected to the earliest sailing ships and it has been suggested that the extensions were invented to meet the increased need for lateral resistance when sailing. Additional arguments for this view are explored which suggest that this design was a transitional stage between rowing ships with steering oars at both ends and specialized sailing ships with more sophisticated designs for sideways resistance: the extensions are the steering oars' anti-leeway properties 'built into the hull'. The authors also suggest that this type of ship was referred to in Old Norse as *beit*, which is a term that seems to date from the Early Viking Age. In Modern Norwegian, *lobeit* 'windward *beit*' refers to a ship's ability to avoid leeway and is probably related to the verb *beita* 'to sail upwind', which seems to derive from a comparison of the keel with a cutting tool. This would fit well with the discussed ship type and its extensions.

Key words: Viking ship, *beit*, Old Norse, etymology, sailing ship, Scandinavia

The sailing ship is what made Scandinavian expansion during the Viking Age possible. However, our knowledge of how the sailing ship evolved in Scandinavia, where the first ships built for using sails probably appear in iconography in the seventh or eighth century, is quite limited. Even more limited is our knowledge of the terminology connected to this development. The reason for this is partly that written sources and archaeological material pertaining to them are scarce, and partly that this scarcity makes them difficult to understand and interpret. Attempting to overcome this problem requires the subject to be approached with as broad and versatile a competence as possible. In this article, we attempt a *Wörter und Sachen* approach to the subject, based on the philological movement of the early twentieth century which believed that the etymology of words should be studied in close association with the study of the artefacts and cultural concepts which those words denoted.¹ We attempt to combine contemporary archaeological finds and iconography with etymology and information from High Medieval written sources, guided by practical experience from rowing and sailing Viking ship replicas and their descendants in the living Norwegian tradition. We assume that both the terminology and the technical development have an internal logic that may be uncovered if we look upon the material from the perspective of a sailor.

The transition from rowing ships to sailing ships in Scandinavia

As far as we know, the Scandinavians only had rowing ships during the Migration Period, even though they must have known sails from the Romans.² The designs of such rowing vessels are known from the Nydam ship from Schleswig, c. 320 AD (Figure 1),³ the oldest pictorial stones from Gotland,⁴ the pictorial stone from Håggeby in Uppland,⁵ and the

¹ See for example Falk, 'Altnordisches Seewesen'.

² Thier, 'Sails in the North', 182-90..

³ Engelhardt, *Nydam mosefund*; Rieck and Crumlin-Pedersen, *Både fra Danmarks oldtid*, 103 ff.; Rieck, *Jernalderkrigernes skibe*; Gøthche, *Rekonstruktion af Nydambåden* and 'Die Rumpfform'.

⁴ Lindqvist, *Gotlands Bildsteine*, No. 7, 11, 562; Nylén and Lamm, *Bildstenar*, 22-3, 29, 35.

⁵ Nylén & Lamm, *Bildstenar*, 155.

seventh-century Kvalsund ship from Western Norway.⁶ All these ships have stems and sterns that are sloping and curved, sometimes backwards-curved (Figure 2). But on the earliest Scandinavian depictions of sailing ships, which are dated to the Merovingian Period, most ships have angular stems and sterns, with vertical prows meeting the keel at a near right angle (Figures 3 and 4).⁷ Crumlin Pedersen⁸ has suggested that this change in the hull profile was caused by:

the need for increased lateral resistance of the hull when going under sail. In the first phases this could have been accomplished by building out a ‘skeg’ at each end to fill the triangle, as illustrated on a graffito from Oseberg (Figure 5).

There is every reason to believe that the angular ship type really existed, even if only iconographic examples have been found. The depiction in Figure 5 is very detailed, and there are many depictions like it, not only from the Merovingian Period but also from the Early Viking Age. Depictions of this type are found on several of the Gotlandic picture stones (Figures 3, 4, 5 and 6),⁹ on quite a number of coins from Hedeby, c. 800 AD (Haithabu / Heiðabýr),¹⁰ on a graffito from the early ninth century Oseberg find,¹¹ and on a ninth-century graffito from Skomrak, Southern Norway.¹² Ellmers and Gardiner have claimed that the ships on the coins from Hedeby are early cogs.¹³ We, however, support Crumlin Pedersen’s rejection of this.¹⁴ Hedeby was a Scandinavian town and therefore it is logical to group these ships with the unquestionably Scandinavian depictions, which undoubtedly show something other than cogs. In addition, it is difficult to see a clear resemblance between the ships in question and cogs, since the stems on a cog are clearly inclined; that is, they run in a straight line, but not perpendicular to the horizontal keel.

Additional arguments for the function of the keel extensions

Independently of Crumlin Pedersen, we have arrived at the idea that the change in the hull profile was caused by the need for increased lateral resistance of the hull when going under sail. The first aim of this article is to broaden the basis for this suggestion. Reduced leeway obviously became necessary when ships were fitted with sails, and extensions like the one in Figure would undoubtedly contribute to that, although it is not the most effective way of reducing leeway. This interpretation is supported by the fact that Lindqvist and Åkerlund explained the design as an adaption to upwind sailing, even though they did not notice its association to the earliest sails.¹⁵ Furthermore, similar designs have been developed with the aim of reducing leeway on several types of sailing vessels from later times, independently of the early Scandinavian design. On the Dutch and German North Sea coast, where an ordinary keel is inconvenient because boats often have to rest on the exposed seabed at low tide,

⁶ Shetelig and Johannessen, *Kvalsundfundet*.

⁷ Lindqvist, *Gotlands Bildsteine*, No. 310, 389, 469, 492, 41, 43, 54 – 62, cf. 49, 50; Nylén and Lamm, *Bildstenar*, 42 ff., Varenius, *Det nordiska skeppet*, 63 ff. All from Gotland.

⁸ Crumlin Pedersen, *Viking-Age ships*, 174-5.

⁹ Lindqvist, *Gotlands Bildsteine*, No. 128, 132, 328, 428.

¹⁰ Ellmers, ‘The Cog as Cargo Carrier’, 36; see also Crumlin-Pedersen, *Viking-Age ships*, 174-5.

¹¹ Christensen et al., *Osebergdronningens grav*, 140.

¹² Gjessing, ‘Vest-Agder i forhistorisk tid’, 60; see also Felbo, ‘Skibsbilleder i Skandinavien’, No. 265; Blindheim, *Graffiti in Norwegian stave churches*, 44.

¹³ Ellmers *Frühmittelalterliche Handelsschiffahrt*; Ellmers, ‘The Cog as Cargo Carrier’, 32 ff; Gardiner, *Cogs, Caravels and Galleons*, 36.

¹⁴ Crumlin Pedersen *Viking-Age ships*, 174-5.

¹⁵ Lindqvist *Gotlands Bildsteine*, Vol. I, 68-9; Åkerlund ‘Áss och beiti-áss’, 49.

several traditional boat types have ‘skegs’ for this purpose, gripes, in addition to leeboards (Figure 6).¹⁶

On the Oselvar boat from the area around Bergen, Western Norway, models intended for regatta sailing were modified in the same way in the 1990s, because the rules forbade the use of deeper keels, until new rules put an end to this development.¹⁷ On the Sogn boat, also from Western Norway, the *lòt*, which is a transition piece between the keel proper and the stem, can be made deeper in order to reduce leeway.¹⁸ The same applies to the Sunnmøre boat, further up the coast; the corresponding part of the sacrificial keel was made deeper to achieve this, and *lolippe* (windward lip) was the local term for *lòt*.¹⁹ An indication of the connection between lateral resistance and *lot* and stem designs can also be inferred from the traditional boats from the Norwegian coast further north. Of these, the Nordland boat has the most angular stems (which in the lower parts is quite similar to Figure 4) and also the shallowest keel. On the Nordmøre boat, on the other hand, the stems have the greatest rake of all traditional Norwegian boats, which gives this type of boat the shortest keel of all (in the lower parts they are very similar to the Nydam ship in Figure 1) and also the deepest keel.²⁰

Did keel extensions develop from steering oars at both ends?

We suggest that the extension(s) filling the triangle(s) under the stem(s) developed from steering oars placed both fore and aft on the boat, which is a solution known from Migration Period or Merovingian Period vessels, as in Figure 2.²¹ The Nydam ship, which is the best-preserved rowing ship, has no keel, just a flat bottom plank, and a very round bottom. Accordingly, steering oars in both ends would be an advantage on this type of ship, not only for steering, but also for reduced leeway when rowing in side winds. In this respect, steering oars both fore and aft can be compared to the retractable keels of later times. If we keep this in mind, designs of the type in Figure 5 are the logical next step. When going under sail, the speed and force increase, making the solution with a front steering oar unstable; at the same time the demand for lateral stability is increased. The answer may have been to fix and increase the hull’s lateral resistance by ‘building the steering oars into the hull’ (the stem / *lot*). The design depicted in detail in Figure 5 may thus be a transitional stage between a round-bottomed rowing ship with steering oars at both ends and a more sophisticated, more effective, solution. This fits with the fact that the design in question is only known from the Merovingian Period and the Early Viking Age, i.e. from early sailing times – although the same solution on a smaller scale is found on some boats from modern times, as we have seen.

Are ships with angular stems the Old Norse *beit*?

In 2014, Heide argued that the ships with angular stems were the type known as *beit* (neuter) in Old (West) Norse manuscripts.²² Here, we elaborate on this idea. There are three arguments in favour of this suggestion.

¹⁶ Oosting and Vlierman, *De Zeehond*, 17, 98; Menzel, *Smakken, Kuffen, Galioten*, 46-7; Menzel, *Die Tjalk*, 80; Vermeer et al., *De Boeier*, 2, 18, 21, 439, 454; Szymanski, *Der Ever der Niederelbe*, 80. Thanks to Anton Englert for references.

¹⁷ Økland, *Oselvar*, 287-9

¹⁸ Planke, ‘Tradisjonsanalyse’, 168-72, 184-6, 189, 197-8, 201.

¹⁹ Personal communication from Håvard Haraldson Hatløy, Sunnmøre Museum, 2 November 2018; Bjørkedal, *Båtbygging i Bjørkedalen*.

²⁰ Eldjarn and Godal, *Nordlandsbåten og Åfjordsbåten*, Vols 2 & 3; Færøyvik, *Vestlandsbåtar*, 137 ff.; Klepp, *Nordlandsbåtar*.

²¹ For other examples see Lindqvist, *Gotlands Bildsteine*, No. 7, 11, 562; Nylén & Lamm, *Bildstenar*, 29; all from Gotland.

²² Heide, ‘The early Viking ship types’, 81-153.

Firstly, the ships with angular stems seem to be a response to the need for increased lateral resistance, and the word *beit* refers to exactly this property in Western Norwegian maritime language: the noun *lobeit* (literally ‘windward *beit*’) refers to a boat’s ability to keep to leeward, i.e. to maintain lateral resistance.²³ Moreover, this ability is partly dependent on the design of the *lòt* transition piece between keel and stem, which is made deeper if reduced leeway is desired²⁴ (although this has to be balanced against the disadvantages of increased drag, more difficult steering and more heel, leading to more water coming in over the gunwale). This is similar to what we observe on the Merovingian and Early Viking Age ship type in question.²⁵

Thus *beit* in *lobeit* comes close to the striking characteristic of the angular ships. The connection between this word and Old Norse *beit* (a type of ship) is supported by the fact that these words both are grammatically neuter gender (as is *lobit*, the Sunnmøre variant of *lobeit*, see below), whereas *beit* in other meanings is grammatically feminine in Old Norse as well as in modern Icelandic and Norwegian.²⁶ It makes better sense to try to explain the ship type designation *beit* from this neuter rather than from *beit*-words that have a different gender.

Secondly, Etymology points in the same direction. *Lobeit* must be related to *beita*, which was the Old Norse verb for ‘sailing upwind, beating’ (and which is the root of this meaning of the English verb *beat*). This verb formally is causative to *bíta* (bite) and is often used in the meaning ‘to cut’ in Old Norse and it thus literally means ‘to cause to bite’.²⁷ The verb *bíta* itself also refers to upwind sailing in two Old Norse passages.²⁸ The idea behind this has, to our knowledge, not been much discussed. According to *Norsk ordbok* this meaning of *bíta* / *beita* derives from the meaning ‘to pressure, to force, to press against’, although this meaning seems to be attested only in modern Norwegian and only in the case of the variant form *beita*.²⁹ The other variant, *bíta*, is not known with this meaning. Sayers has put forward an explanation that takes into account both verb forms:

Beating to windward or tacking [...] is a nautical manoeuvre which causes the ship to ‘bite’ into a headwind. The ensuing zigzag pattern created by changing tacks might be likened to a succession of chunky bites taken out of the wind.³⁰

This explanation is, in our opinion, also problematic because it does not link up with the decisive feature of a good tacker, which is its ability not to drift sideways. If we say that a good tacker ‘bites into a headwind’, the image conjured is that of a boat avoiding leeway because it has bitten on to the headwind with its teeth. But such a ‘grip’ in the headwind

²³ Godal & Eldjarn, *System og oversyn*, 149. *Norsk Ordbok*, Vol. 7, has the form *lobeite*, but this must be an error as the source is Godal / Eldjarn, who have the form *lobeit*. Planke, ‘Tradisjonsanalyse’, 168-72, 184-6, 189, 197-8, 201.

²⁴ Planke, ‘Tradisjonsanalyse’, 170, 184-5; Personal communication from Jon Bojer Godal, 6 October 2010, and Håvard Haraldson Hatløy, Sunnmøre Museum, 2 November 2018. Note that *lobeit* refers to the (abstract) ability to maintain lateral resistance, not the transition piece that can be manipulated to influence this ability. There is no indication that *beit* could refer to a part of a ship. Thus, *beit* as a term for a ship type can hardly be a poetic metonym, a *pars pro toto*, where a part is taken for the whole (e.g. *brandr*, ‘a prominent piece of the prow’, used as a synonym for ‘a ship’, see Jesch, *Ships and men in the late Viking Age*, 147).

²⁵ Other important factors are the angles between the lowest strakes and the keel and *lòt*, the cross profile of the front part of the lowest strake (Norwegian *innløpet*), and the width of the hull above the lowest strakes.

²⁶ *Beit* f. ‘pasture’, ‘grazing’, ‘a plate of metal mounted on the brim of a drinking vessel’. Heggstad et al., *Norrøn ordbok*, 65; Jónsson, *Lexicon poeticum*, 40; Fritzner, *Ordbog over Det gamle norske Sprog*, Vol. I, 122; Blöndal, *Islandsk-dansk Ordbog*, 67; *Norsk Ordbok*, Vol. I, 499.

²⁷ Fritzner, *Ordbog over Det gamle norske Sprog*, Vol. I, 141-2.

²⁸ Benediktsson, *Íslendingabók. Landnámabók*, 38-9, Sveinsson, *Vatnsdæla saga*, 45

²⁹ *Norsk ordbok*, Vol. 1, 502.

³⁰ Sayers, ‘Some English Sailing Terms with Norse Antecedents’, 264.

would only sweep the boat sideways and backwards, which is the sort of thing a good tacker prevents. To avoid this, the boat needs a foothold in some other medium with which it is in contact.

What stops a good tacker from being swept sideways (and allows it to convert the wind's counter force to a forward movement) is the keel in a wide sense, including the *lòt* with any possible extensions, and the lowest strakes if they form a V seen in profile. We suggest that the idea behind *beita* 'to tack' is the same as behind the Old Norse adjective *beit(t)r* (sharp, cutting).³¹ The verb *beita* seems to compare the keel of a ship to the edge of a knife or axe working on wood. A dull one just slides off, whereas a sharp one enters the wood where it is aimed, and can then only be moved sideways by a strong force. In this sense, the ideal ship for upwind sailing, or its keel, is also *beit(t)r*. It thus makes good sense if the ships with angular stems, which were 'sharper' in this way than other ships at the time, earned the designation *beit* (the sharp one). If so, this *beit* is the same word as Norwegian dialect *beit* (sharpness), which is also neuter.³²

This interpretation is supported by the fact that the above-mentioned 'skeg' on some North Sea boat types is referred to in Dutch as *loefbijter* (literally 'windward biter'), alongside the corresponding *loefhouder* (literally 'windward holder'),³³ and by the fact that the Sunnmøre variant of the term is *lobit*, which shows an even clearer connection to the verb *bíta* (Old Norse form) than the standard Norwegian *lobeit*.

Sverdrup also derives *beit* (a type of ship) from the verb *beita* on the basis of the resemblance of the terms,³⁴ and so do Bjorvand & Lindeman, although they understand the verb *beita* as originally meaning 'to row against the wind'.³⁵ De Vries, and later Ásgeir Blöndal Magnússon, seem to misunderstand Sverdrup because they say that *beit*, if it derives from the verb *beita*, is a 'late formation'.³⁶ But Sverdrup's point is that *beit* is a Scandinavian formation rather than inherited from Proto-Germanic, which still allows for it to have formed in conjunction with the earliest upwind sailing vessels of the Merovingian Period or Early Viking Age.

De Vries explains *beit* as literally meaning 'half a split log', originally referring to a log boat, from the verb *beita* in the sense 'to split', which is believed to be the essential or original meaning of this etymological root.³⁷ This etymology is, however, improbable as dugouts are not made from split logs. In a dugout it is crucial to ensure that the freeboard and the stems are as high as possible; therefore, more than half the tree-trunk is used and it thus makes little sense to split it.³⁸ Also, *beita* does not mean 'to split', nor do related words in Germanic, as far as we can tell. It may well be correct that the Indo-European root **bhey-d-*

³¹ Ordbog over det norrøne prosasprog: http://onpweb.nfi.sc.ku.dk/wordlist_d.html; Heggstad et al., *Norrøn ordbok*, 66, 72.

³² *Norsk Ordbok*, Vol. 1, 499. This *beit* 'sharpness' is probably ultimately the same word as *beit* in *lobeit*, although it is considered a different word, *ibid.*, cf. that 'sharpness' is also one meaning of *bit* (in Old Norse, as well as in Modern Norwegian. <http://onpweb.nfi.sc.ku.dk/webart/b/bi/8497art.htm>; *Norsk ordbok*, Vol. 1, 629), found in the Sunnmøre variant *lobit* of *lobeit*. In the Sunnmøre dialect, *bit* in *lobit* is pronounced with a vowel between /i/ and /e/, which shows that it derives from the Old Norse short *i*, not the long *í* (personal communication Håvard Haraldson Hatløy, 2 November 2018).

³³ Thanks to Gerbrand Moeyes for information on this. Kweekschool voor de zeevaart, *Onderdeelen van het schip*, 6, 36; Oosting and Vlierman, *De Zeehond*, 17, 98; Lunenburg & Haentjens, *Ronde en platbodems schepen*, 46; Vermeer et al., *De Boeier*, 2, 18, 21, 439, 454; Szymanski, *Der Ever der Niederelbe*, 80; in German *Luvklotz*, 'leeward block / lump'; Menzel, *Die Tjalk*, 46-47; Menzel, *Smakken, Kuffen, Galioten*, 80.

³⁴ Sverdrup, 'Har Norden faat baaten fra England?', 56.

³⁵ Bjorvand and Lindeman, *Våre arveord*, 165-6.

³⁶ De Vries, *Altnordisches etymologisches Wörterbuch*, 30; Magnússon, *Íslensk orðsifjabók*, 48.

³⁷ De Vries, *Altnordisches etymologisches Wörterbuch*, 30.

³⁸ Korhonen, 'Samisk-finska båtterm'.

means ‘to split (long objects lengthwise)’,³⁹ but this meaning is not found in the Old Norse words *bíta*, *beita*, *bit*, *beit*, *beit(t)r*, *beiti*, *biti*, *bitill* or their cognates and relatives in other Old Germanic languages, although this seems to be universally believed.

To *bíta* is ‘to bite’, ‘to cut into’, and secondarily ‘to graze’. To *beita* is ‘to make bite’, or ‘to make graze’, ‘to make chase (of hunting dogs)’, ‘to handle a (cutting) instrument’, ‘to bait a fish hook’ and ‘to hitch up the horse’ (which makes the horse bite the *bitill* ‘bit of a bridle’). A *bit* is ‘a bite’, ‘biting’, ‘a pasture’, and ‘sharpness’. A *beit(i)* is ‘pasture’, ‘grazing’, or ‘a plate of metal mounted on the brim, e. g. of a drinking horn’; i.e. ‘something that is bitten (or intended to be bitten)’. The same is the case with the noun *beita*, ‘a pasture’, ‘a bait’. *Beit(t)r* is ‘sharp’, essentially ‘having the ability to bite’. A *biti* is ‘a bit, a mouthful’, ‘a piece’ (< ‘something bitten off’), ‘a cross-beam in a house or a ship’, and ‘a canine tooth’.⁴⁰ Some etymologists seem to take *biti* in the meaning ‘cross-beam’ as proof that the root in question had the meaning ‘to split’ in Germanic – assuming that cross-beams were made from split logs.⁴¹ However, it is not a defining characteristic of cross-beams to be made of split logs and in houses they certainly are made from unsplit logs. The meaning ‘cross-beam’ seems more easily derived from the meaning ‘canine tooth’, because cross-beams in houses would usually go through the wall and protrude on the outside, allowing for it to be secured with a wedge on the outside. The same construction was later taken into use on cargo ships, when they evolved,⁴² although not on boats. The meanings of all these words seem to derive from the semantic complex surrounding biting and teeth, which does not involve splitting, but rather cutting long objects across, or cutting into something. The same seems to apply to the cognates in the other Old Germanic languages.⁴³

The third argument for the linking of *beit* and the ships with angular stems is that *beit* as a term for a ship type seems to be an early term in Old Norse. This would fit with the early dating of the angular ships.⁴⁴ First a few words about the sources for Viking Age Scandinavian terminology are needed. Some Viking Age runic inscriptions mention maritime aspects, but these are few and short.⁴⁵ The oldest manuscript fragments in Old Norse are from the end of the twelfth century. Most of the Scandinavian literature believed to date from the Viking Age is handed down to us in thirteenth- and fourteenth-century manuscripts, most of them are Icelandic and a few are Norwegian. These manuscripts contain vast amounts of prose texts, some of which pose as historical accounts from the Viking Age. But regarding maritime technology and many other aspects, it is quite clear that these prose texts reflect the time of their composition in the High Middle Ages, rather than the Viking Age.⁴⁶ However, the prose contains skaldic poems, which most scholars believe were orally transmitted from the Viking Age (the oldest from the 9th century) until their recording in the High Middle

³⁹ For example Bjorvand and Lindeman, *Våre arveord*, 166; Pokorny, *Indogermanisches etymologisches Wörterbuch*, Vol. I, 116-17.

⁴⁰ <https://onp.ku.dk/>, Heggstad et al., *Norrøn ordbok*, 66, 72; Fritzner, *Ordbog over Det gamle norske Sprog*, Vol. I, 122, 141-2.

⁴¹ For example Bjorvand and Lindeman, *Våre arveord*, 166; De Vries, *Altnordisches etymologisches Wörterbuch*, 30.

⁴² Christie, *Middelalderen bygger i tre*, 26; Christensen, ‘Boat finds from Bryggen’, 53-4, 73, 77, 80, 223-4.

⁴³ Gothic *beitan*, Old English / Old Saxon *bītan*, Old Frisian *bīta*, Old High German *bīzzan* (= Old Norse *bíta*); Old English *bētan*, Old Saxon *bētian*, Old High German *beizen* (= the Old Norse verb *beita*); Old English *gebāte*, Middle High German *gebeize* (= Old Norse *beiti*); Old English *bita*, Middle Low German *bete*, Old High German *bizzo* (= Old Norse *biti*). De Vries, *Etymologisches*, 30-31, 38; Karg-Gasterstädt and Frings, *Althochdeutsches Wörterbuch*, Vol. I, 859, 1158, 1164; Bosworth and Toller, *An Anglo-Saxon dictionary*, Vol. I, 67, 105, 291; Holthausen, *Altsächsisches Wörterbuch*, 6, 8; Schiller and Lübben, *Mittelniederdeutsches Wörterbuch*, Vol. I, 296; Köbler, *Gotisches Wörterbuch*, 85-6.

⁴⁴ Heide, ‘The early Viking ship types’.

⁴⁵ Jesch, *Ships and men in the late Viking Age*.

⁴⁶ Malmros, ‘Leding og skjaldekvad’.

Ages.⁴⁷ There are many reasons for making this assumption. First, the metre of the poems is so complex and rigid, with many types of rhyme, that it provided a multitude of supports for the memory, which makes it possible that poems have been carried in relatively unchanged forms. Second, the assumption of antiquity is confirmed in many ways. For example, they often present a picture different from that of the prose in which they are transmitted, among other things regarding maritime aspects. Thus, the high medieval prose praises fleets for consisting of big, high ships, whereas the accompanying skaldic poems from the Viking Age praise them for consisting of many, swift ships.⁴⁸ This discrepancy actually fits with what we should expect in that the high medieval contemporary sagas depict an arms race in the twelfth and thirteenth centuries, with ships that seem to morph into ‘floating castles’, and such vessels would have been useless for Viking Age beach landings, which required light and shallow – i.e. small and numerous – ships. This is one of many indications that the bulk of the skaldic poetry attributed to the Viking Age really does date from that period. The maritime aspects of the skaldic poetry and the runic inscriptions from the Viking Age have been studied by Malmros and Jesch.⁴⁹ Much of the Eddic poetry, handed down to us in the same kind of manuscripts as the skaldic poetry (Icelandic, thirteenth and fourteenth century), is also widely believed to date from the Viking Age. The arguments for this are different, however, and the assumption is much more uncertain. The Eddic metre is so loose that it does not provide much support for the memory. But the scholars of the twelfth and thirteenth centuries apparently understood the poems as handed down from ancient times, and the content of the poems have no reference to Christianity, which indicates that they predate the conversion in the year 1000 A.D. in Iceland.⁵⁰ There is no existing study of the Eddic poems as a source of maritime information, but in terms of linguistic forms and overall comprehension it is easier to access than the skaldic poetry. Viking Age poetry can provide invaluable information about Viking Age terminology and other aspects of the Viking Age, but because of the source problems, it must be used with care and ought to be supplemented by information from other sources, and conclusions will always be uncertain.

Beit is mentioned as a term for a (type of) ship at least nine times in the Eddic and skaldic poetry.⁵¹ All the examples listed by Finnur Jónsson are early twelfth-century or earlier. (In several of the cases, end rhymes and internal rhymes reveal that the term *beit* genuinely belongs in the poem.) And, more importantly, *beit* never occurs in Old Norse prose. Given the magnitude of the prose corpus, this indicates that *beit* was not used as a term for a ship type in everyday language during the High Middle Ages, only in the poetic language. This is an indication of ancientness because old words could survive as poetic words long after they went out of use in daily speech. Another example of this is *kjóll*. This is also an Old Norse term for a (type of) ship, it does not refer to Scandinavian ships in prose,⁵² but is common in Eddic and skaldic poetry⁵³ – and we happen to know that is very old. The Old English form of it, *cēol*, is mentioned by Gildas in the sixth century, referring to the ships that

⁴⁷ Kuhn, *Das Dróttkvætt*, Myrvoll, ‘Kronologi i skaldekvæde’.

⁴⁸ Malmros, ‘Leding og skjaldekvad’.

⁴⁹ Malmros ‘Leding og skjaldekvad’ and Jesch *Ships and men in the late Viking Age*.

⁵⁰ Meulengracht Sørensen, ‘Om eddadigtene alder’, 217-28; Þorgeirsson, ‘The Dating of Eddic poetry’, 33-61.

⁵¹ According to Jónsson, *Lexicon poeticum*, 40, cf. Jesch, *Ships and Men in the late Viking Age*, 135

⁵² For *kjóll*, see Heide, ‘The early Viking ship types’, 118-22. The term is mentioned twice in Old Norse prose, but refers both times to English ships (Falk, ‘Altnordisches Seewesen’, 88). Thus, it seems that the term survived in the everyday language of the High Middle Ages as a designation for an English ship type (which is logical because the term *cēol*, later *kēle*, was very common in English, see Thier, *Altenglische Terminologie für Schiffe*, 38 ff.), but not a Scandinavian one. Thier believes that *kjóll* became associated with the English cognate relatively late.

⁵³ Jónsson, *Lexicon poeticum*, 337.

brought the first Saxons to England.⁵⁴ Clearly, at this early time, the term was not confined to poetry. The term *beit* seems to be analogous. Because it only occurs in poetry there is reason to believe that its original, actual referent probably was a very early ship type. This dating of the term fits the angular ship type, which is known only from the Early Viking Age and Merovingian Period.

Achieving absolute certainty as to whether *beit* really did refer to the ships with angular stems is not possible. But we have to remember that certainty is generally unattainable in matters like these. The best we do is to take into account all of the available information and then reach for the explanation that is more probable than the alternatives.

Arrow-shaped ships – a different type

A number of rune stones feature a ship type reminiscent of the one discussed here, from Östergötland and Scania on the Swedish mainland, and northern Jutland.⁵⁵ There are seven examples, two of which are shown in Figures 8 and 9.⁵⁶

If there is a connection between this type of ship and the one discussed above, this would count against the proposal we make here. But there seems to be no connection. The ship type discussed as *beit* above belongs to the Merovingian Period and Early Viking Age; the depictions dated with certainty are from the early ninth century or earlier (see above). The examples from the Gotland stones are more uncertain, but they, too, are early: identified as ninth century or between 750 and 900 in the most recent work.⁵⁷ The depictions of arrow-shaped ships, on the other hand, belong to the Late Viking Age, mostly the eleventh century.⁵⁸ Accordingly, the ship type discussed above (which we identify as *beit*) and the arrow-shaped ships are separated by more than a century, there seems to be no continuity between them, and the evidence for them is found in different regions. In addition, the pronounced arrow-shape, which all examples of the later type have, makes them distinctly different from the ships with angular stems. Admittedly, on some of the angular-stemmed ships, the stem and stern tilt slightly inwards, but the difference between them and the ships depicted in figures 7 and 8 is nevertheless striking.

The arrow-shaped ship type is difficult to comprehend in many ways, partly because the depictions seem unrealistic. It is clear, however, that they should not be seen in connection with the Merovingian and Early Viking Age ships with angular stems.

The relationship between *beit* and Old Norse *bátr*, Old English *bāt*

Up to this point, we have omitted one aspect in order to give a more transparent presentation. This is the question of the relationship between Old Norse *beit*, Old Norse *bátr* ‘a boat’, and Old English *bāt* (> *boat*) ‘a boat’. As some scholars consider these words to be reflections of the same original word, we need to discuss the relationship between them.

Beit and *bāt* correspond formally, as *ei* is the normal Old Norse cognate of Old English *ā* from Proto-Germanic *ai*. But *beit* and *bāt* do not mean the same. All nine Old Norse

⁵⁴ Williams, *Gildae De excidio Britanniae*, Chapter 23. Gildas’ spelling is *cyulae*, with a Latin plural. Both Old English *cēol* and Old Norse *kjóll* correspond to a hypothetical **keulaz* in Proto-Germanic (nominative singular). This is not the same word (not even the same root) as Old Norse *kjōlr* ‘the principal structural part of a ship’, despite the superficial orthographic similarities and despite the fact that the two words have merged in English.

⁵⁵ Varenius, *Det nordiska skeppet*, 89 ff.; Rosborn, *Den skånska historien*, 126 ff.

⁵⁶ Varenius, *Det nordiska skeppet*, 89-93.

⁵⁷ Imer, ‘Gotlandske billedsten’, 104, 106; Imer, ‘The Viking Period Gotlandic Picture Stones’, Halla Broa IV, Klinte Hunninge III, Bro Eriks I; see also Kastholm, ‘De gotlandske billedsten’ (2005) and Kastholm, ‘De gotlandske billedsten’ (2006).

⁵⁸ Varenius, *Det nordiska skeppet*, 99-100, Felbo, ‘Skibsbilleder i Skandinavien’, 81, 145, 146, 200, 274, 279, 291.

occurrences of *beit* refer to warships,⁵⁹ whereas *bāt* seems to have a much more general meaning quite close the modern word ‘boat’.⁶⁰ Thier defines *bāt* as ‘boat’, also ‘logboat’, in poetry ‘any watercraft’.⁶¹ *Bāt* and *bátr* do mean approximately the same, but they are not cognates. Among others Falk, de Vries and Bjorvand & Lindeman argue that Old Norse *bátr* is borrowed from Old English *bāt*.⁶² This may be so, although it would be surprising (but in no way impossible) if the Scandinavians had borrowed a central term for ‘craft’ at a time when they themselves were leading the maritime development, as pointed out by Sverdrup.⁶³

Bjorvand & Lindeman argue that *bāt* / *bátr* derive from the verb that we find in Old Norse as *beita*, and that it originally referred to a craft that was good at beating.⁶⁴ However, if the term originated in English, as Bjorvand & Lindeman argue, this etymology requires, in order to be plausible, some support for the assumption that the English *bāt* distinguished itself from other boat types by being specially designed for beating. However, there is no evidence of this and the fact that a *bāt* could also be a dugout clearly counts against it.

Nielsen also argues that *bátr* is a loan from Old English and he argues that *beit* is the indigenous Scandinavian form of the same word.⁶⁵ He derives this *bāt* / *bátr* / *beit* from ‘Germanic **baita-*, Indo-European **bhoido-* to the root **bheid-* ‘to split’, and suggests that the original *bāt* / *bátr* / *beit* was ‘a cut off, split or hollowed out trunk’ or ‘a ship assembled from split wood’. As we have seen, however, the root that *beit* belongs to does not have the meaning ‘to split’ in Germanic, and this excludes the latter explanation. Nor does the root in question yield the meaning ‘hollow out’ in Germanic. It does nonetheless have the meaning ‘to cut off’, so the meaning ‘a cut off trunk’ cannot be rejected altogether. But it would seem odd to give a dugout the designation ‘a cut off [trunk]’, since all logs used in boat building are cut off.

The question of the relation between *bāt*, *bátr* and *beit* seems unsolvable. *Bátr* may be a loan from Old English, but this does not bring us closer to an understanding of the relationship between *bāt* / *bátr* and *beit*. If it is right that the (Scandinavian) term *beit* referred to the ship type with angular stems, it is conceivable that the possible (linguistic) cognate *bāt* referred to the same ship type in England at the same time, and only later assumed the more generic meaning ‘a boat’. However, there is no indication that the ship type with angular stems existed in England.

Fortunately, this unsolvable question makes no difference to the argument put forward in this article, especially as *beit* probably is an earlier word in Old Norse than *bátr*. As we have seen, the word *beit* seems to belong to the earliest layers of the Old Norse language. Regarding the term *bátr*, however, there is nothing that points to its existence much earlier than its first probable attestation in a skaldic poem dated to around 990.⁶⁶ This justifies discussing the term *beit* in its own right and as a possible designation for the Scandinavian ship type with angular stems.

Conclusion

This study is an example of how it may be possible to increase our understanding of early maritime history by making use of all the available material and interpret it in light of practical experience with boats of the same tradition. As demonstrated, it appears possible to

⁵⁹ Heide, ‘The early Viking ship types’, 137-42.

⁶⁰ Bosworth and Toller, *An Anglo-Saxon dictionary*, 69.

⁶¹ Thier, *Altenglische Terminologie für Schiffe*, 128.

⁶² Falk, ‘Altnordisches Seewesen’, 4, 86; De Vries *Altnordisches etymologisches Wörterbuch*, 28; Bjorvand and Lindeman, *Våre arveord*, 165-6.

⁶³ Sverdrup, J., ‘Har Norden faat baaten fra England?’, 49-59.

⁶⁴ Bjorvand and Lindeman, *Våre arveord*, 165-6.

⁶⁵ Nielsen, *Dansk etymologisk ordbog*, 58. Translated by the authors.

⁶⁶ Jónsson, *Den Norsk-islandske skjaldedigtning*, Vol. I, 134.

throw light on the ship type *beit* through a combined analysis of archaeological finds, contemporary iconography, etymology, information from High Medieval Old Norse manuscripts and practical sailing experience. Based on how the term is used in the manuscripts, *beit* seems to belong to the earliest phases of the Old Norse linguistic period, which coincides with the period when the characteristic ships with angular stem and stern were used. Several scholars have, independently, linked this ship type to early upwind sailing and the need for increased sideways resistance, because the extensions under stem and stern would increase sideways resistance in a primitive, easy-to-implement way. This fits very well with the term *beit*, which seems to be related to the verb *beita* ‘to beat’, really ‘to make [something] bite’, which again seems to derive from the idea that the keel of a good tacker ‘slices’ through the water instead of being pushed sideways. This matches the characteristic of the ships with angular stem and stern well. In addition, we know from several Northern European boat types that sideways resistance has been increased with modifications similar to those on the ships with angular stems, and that these modifications have been semantically linked with the verb ‘to bite’. In Dutch, a skeg is called a *loefbijter*, ‘windward biter’, and in Norwegian tradition, a direct descendant of the Viking ship tradition, a vessel’s ability to avoid leeway is referred to with the linguistically close relatives *lobit* and *lobeit* (*lo* = *loef*).

We believe that the approach employed here represents a large untapped potential, and we hope that the results of this study and the approach will inspire further research.

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Figure 1. The Nydam ship. (Åkerlund, *Nydamskeppen*, 51), c. 320 AD.

Figure 2. Pictorial stone from Stenkyrka (46), Gotland. (Photo: Simund Oehrl, *Gotlands Fornsal*, 2013). Migration Period or Early Merovingian Period.

Figure 3 Pictorial stone from Stenkyrka (IV), Gotland (Lindqvist, *Gotlands Bildsteine*, no. 498). Merovingian Period.

Figure 4. Pictorial stone from När Rikvide, Gotland (Lindqvist, *Gotlands Bildsteine*, no. 466). Merovingian Period.

Figure 5 Graffito from the Oseberg find (Christensen et al. *Osebergdronningens*, 106). Early 9th century.

Figure 6 A Dutch boeier with *loefbijter* and *scheg* under stem and stern. (Kampen, *De Zeilsport*, 47).

Figure 7. Pictorial stone from Hunninge in Klinte, Gotland. (Lindqvist, *Gotlands Bildsteine*, no. 428. ‘Klinte Hunninge I’). C. 750 –900. (On the dating of Gotland stones, see § 3.)

Figure 8. Rune stone from Ledberg, Östergötland (Wikipedia). 11th century.

Figure 9. Rune stone from Törnevalla, Östergötland (Wikipedia). 11th century.