

BRIEF COMMUNICATION

Chronological aspects of the Hensbacka – a group of hunter-gatherers/fishers on the west coast of Sweden during the Pleistocene/Holocene transition: an example of early coastal colonization

Lou Schmitt^a and Krister Svedhage^b

^aDepartment of Historical Studies, University of Gothenburg, Sweden; ^bDepartment of Conservation, University of Gothenburg, Sweden

ABSTRACT

In this short article, we take a brief but concise look at chronological, and to a limited extent environmental and typological, aspects of the Hensbacka culture group in Bohuslän. Due to the extensive nature of the group in time and space, it is reasonable to refer to members of this group as colonizers – even if other groups may have visited western Sweden prior to the Hensbacka. Granted, the title is provocative but it should be made clear that we are addressing the Hensbacka group as we know it today, and not in the mid-1950s. In addition, and fairly obvious, it is only the Swedish west coast that is taken into consideration, since this particular area had an extensive seasonal population during the close of the Late Pleistocene and beginning of early Holocene; one that is difficult to find elsewhere in Scandinavia.

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Introduction

As discussed in previous papers (Schmitt 1994, Schmitt *et al.* 2006, 2009), the C-14 dating of Hensbacka sites on raised beaches has proven to be a problem. In addition to the obvious problem of well-aerated sandy contexts in which organic material has not been preserved, we could also have had a problem with acidic rain along the coast of Bohuslän (for additional insights, see Schmitt *et al.* 2006, p. 18). It was for this reason that an early marine transgression on SW Orust was investigated and, in the long term, could possibly serve as a chronological ‘time marker’ in other northern coastal areas with this transgressional phase. In that which follows, we first take into account our concept of regional colonization and then continue with when this episode most likely took place. In closing, a brief discussion concludes that three phases of the Hensbacka group might very well be present in Bohuslän.

As mentioned and before we proceed, it should be made perfectly clear that our use of the term ‘colonization’ should be taken to mean repeated seasonal visits to a specific, but limited, geographical region on the Swedish west coast by one and the same

culture group from, as we see it, the North Central European Plain. Accordingly, these visits are witnessed by an archaeological record containing similar artifact inventories within a given chronological zone; in this case the late Younger Dryas and early Preboreal. This does not mean that other regional ‘colonization’ processes of a later date are not significant; only that they do not represent the first ‘Continental Connection’ (Schmitt 2015a).

Chronology – and how we got there

In the early 1990s, an excavation at Nösund on SW Orust (Figure 1) revealed a minor transgression (Schmitt 1999b, p. 8, Figure 3) that took place shortly after 12,000 cal BP (*ibid.* NHR, ST13752, p. 111; see also Schmitt 2013b). Accordingly, our original shore displacement curve (Figure 2) has been constructed from this information in conjunction with data from a previously known small transgression of c. 5 m, and duration of c. 100 years, from Kolamossen (Figure 1) in Risveden (Svedhage 1985, p. 7). A few words concerning shore displacement dating is in order. A shore line curve incorporates at least four parameters; the rate of sea level rise in relation to the rate of isostatic rebound in coastal

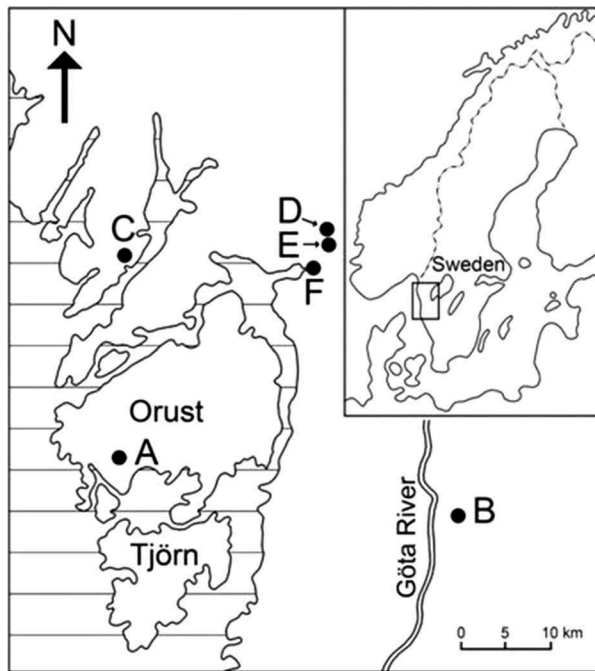


Figure 1. Generalized map showing the location of archaeological sites, areas of geological investigations and present-day cities mentioned in the text. (A) Nösund. (B) Kolamossen in Risveden. (C) Gullmarsskogen/Lassehaga. (D) Ramsedalen. (E) U-157. (F) The city of Uddevalla.

areas after deglaciation, known regional palynological studies, geological features seen in the terrain, and radiometric dates when available. In consequence, archaeological sites situated on these curves

are referred to as raised beach sites and, at times, water rolled flint artifacts and/or a sorted matrix containing the artifacts, disclose that the actual site was situated within the local tidal range. Interestingly, this has been the case in the three sites seen on our curve in Figure 2. The advantage of shore displacement dating is twofold: the curves are regional and there is no risk of dating ‘old drift wood’ that is a common problem with radiometric dating. The disadvantage is that it is not *always* certain that the sites were situated within the tidal zone and, therefore, radiometric dating in this case is more exact.

How can these observations be used to date our site in Nösund? Providing that the rate of regression was 2.5 m/100 year (Schmitt *et al.* 2009, p. 18), one can count downwards along the slope of the site in Nösund from an erosion notch, in the underlying moraine, that represents a transgressional maximum at 60.0 masl; this becomes our chronological ‘fix point’ at 12,000 cal BP. The first (YD) regression minimum, or minorant, is represented by a distinct notch in an underlying layer of compact diamicton at the 55-m level of the site. Based on these features, the area with wide-edged flake axes/knives can be dated to between 11,700/600 and 11,200/100 cal BP. In order to corroborate our findings, a second displacement curve, based on GIA modelling (glacial

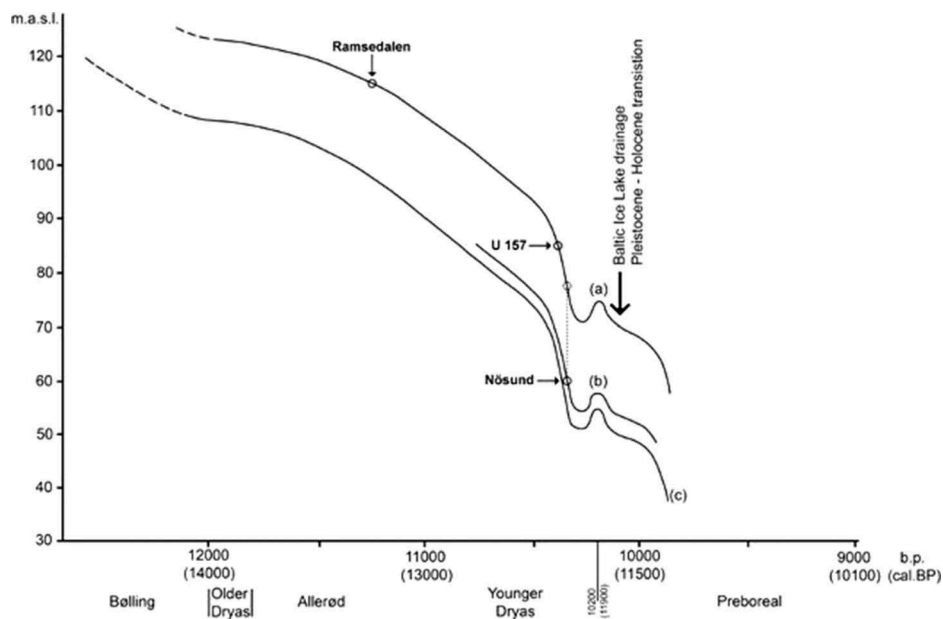


Figure 2. Shore displacement curves for the Uddevalla area (a), Nösund on SW Orust (b) and Kolamossen in Risveden (c). Note the difference between Nösund on SW Orust and its relationship to U-157 in the Uddevalla area.

isostatic adjustment) was presented in 2009 (Schmitt *et al.* 2009, p. 5, Figure 3). Our curve, as well as a third- and independent displacement curve (Påsse and Andersson 2005), indicates a period of isostatic subsidence at about 12,000 cal BP. From our point of view, this resulted in the minor transgression we see on SW Orust in Bohuslän, and in Risveden.

Naturally, it goes without saying that the material recovered from the site in Nösund was not *in situ*. Clearly, all flint material that has been subjected to tidal movements on an inclined beach must, to a certain extent, have been moved downhill. However, since we could co-join a blade and a burin to the core they were removed from – and found in the same meter square but in different fractions and intervals (see Schmitt 1999b, p. 62, M238 area ‘B’); it is safe to assume that this downhill movement was rather limited. The aforementioned tidal movement in the archaeological record is witnessed by a sorted matrix containing aggregates of gravel with chipped flint material, and areas of homogeneous sand lenses with no flint at all (*ibid.* pp. 36–37). This feature has been referred to as ‘islands of gravel and rivers of sand’ (*ibid.* p. 10; Schmitt 2013b, pp. 436–437) and is easy to identify in the field.

Elsewhere

It is not without interest that a similar transgression, but larger (~10 m), also occurred along the Norwegian west coast in the Bergen (Krzywinski and Stabell 1984; Anundsen 1985) and Stavanger (Thomsen 1982) areas at about 12,000 cal BP. In addition, it is noteworthy that a small (1 m) transgression also occurred during the Younger Dryas near Tromsø (Munch-Ellingsen 1984) – as well as a minor transgression, ending at about 12,000 cal BP, which has been observed in the Kroppefjäll area of western Sweden (Björck and Digerfeldt 1991, pp. 128–129, Figure 17). In western Norway the transgression was caused by a major ice sheet re-advance that halted the isostatic uplift (Lohne *et al.* 2007) and raised the geoid (Fjeldskaar and Kanestrøm 1981). Far more distant examples of this Younger Dryas transgression can be found on Svalbard, where a phase of equilibrium between isostatic rebound and eustatic sea level rise has been noted between 12,500 and 11,500 cal BP (Landvik *et al.* 1987, pp. 39–41), as well as on Iceland where a transgression

culminated at c. 12,100 cal BP (Rundgren *et al.* 1997, p. 210; Wohlfarth *et al.* 2008, p. 75). In brief, regional features such as an ice front re-advance, in conjunction with a rising eustatic (global) sea level in general, can have had far reaching effects in Nordic coastal areas. Consequently, there is no reason to doubt the Younger Dryas transgression observed at Nösund on the Swedish west coast, in that the event has been documented in numerous northern coastal areas. See also Schmitt (2013b) for additional insights concerning dating on raised beaches.

Implementation – in theory

If we integrate the aforementioned shore displacement curves with where Hensbacka sites are found in the terrain of central Bohuslän, many of the sites can be dated to an interval between c. 11,700/600 and 11,200/100 cal BP. Thereafter, this early phase is replaced by a latter phase of the Hensbacka that continues until c. 10,700 cal BP. However, and as Fredsjö pointed out, there exists a series of high lying sites that represent a *very* early phase of the Hensbacka group (see Fredsjö 1953, p. 131, Figure 34, sites marked ‘V’) without flake axes (*ibid.* pp. 85–86) that, as we see it, are earlier than 11,700 cal BP (compare Fredsjö 1953, p. 131, Figure 34 and Schmitt *et al.* 2009, p. 5, Figure 3; p. 18, Figure 8); that is to say – prior to the drainage of the Baltic Ice Lake at 11,700 cal BP (Jakobsson *et al.* 2007, p. 367). One of these early ‘V’ sites (U-157) in the Uddevalla area (see Figure 1) has been excavated; no flake axes were found, but rolled chipped flint was observed and collected along with other typical Hensbacka artifacts (Cullberg and Kindgren 1999). If we extrapolate from our chronology in Nösund by adding 18.2 m to our ‘fix point’ (60.0 masl), in that the site in Uddevalla (U-157) is about 26 km to the north (+0.7 m/km, towards the north, Svedhage 1985, p. 4), we arrive at 78.2 m at U-157 in Uddevalla. This indicates that the 60-m level in Nösund or 12,000 cal BP is, in chronological terms, younger than the 85-m level of U-157 in Uddevalla. In consequence, U-157 in Uddevalla is older than 12,000 cal BP. As mentioned previously, the early phase with wide-edged flake axes referred to as the ‘Hogen phase’ by Fredsjö (Fredsjö 1953, pp. 73–75 and 144), follows directly after these very high

lying ‘V’ sites and can be dated to a chronozone that runs between c. 11,700/600 and 11,200/100 cal BP.

It should also be mentioned that a second, very high lying site (115 masl) referred to as Ramsedalen 579 by Fredsjö (1953, pp. 82, 83, and site catalogue p. 184) (see also Schmitt 2015b) can be dated to c.13000 cal BP when plotted on our shore displacement curve (Figure 2; see also Schmitt *et al.* 2009, p. 5, Figure 3b). Had it not been for the occurrence of very early Ahrensburgian sites on the Continent, e.g. Alt Duvenstedt LA 121 at 11,060 ± 110 uncal C-14 (c. 13000 cal BP) (Kaiser and Clausen 2005, pp. 456–457; Weber *et al.* 2011, p. 291) and Hintersee 24 OSL dated to an early segment of the Younger Dryas (Bogen *et al.* 2003), one could not believe that this early HK/Ahrensburgian dating in Bohuslän was possible. Clearly, these very high-lying sites in central Bohuslän require additional investigation. Nevertheless, the material that had been collected at the Ramsedalen site included: one tanged point, five convex end scrapers on blades and a large microburin and lastly, but by far not least, water rolled flint. Fredsjö refers to the tanged point as having its parallel in the Ahrensburgian material from Stellmoor (Fredsjö 1953, p. 83). As to the microburin, it seems as if this item has been a stigma for Late Palaeolithic Stone Age research from a Nordic point of view. As was demonstrated in a recent paper (Schmitt *et al.* 2009), microburin technique has been well known during most of the Upper Palaeolithic (see also Bo Madsen (1996, p. 69) for additional insights concerning microburins in a Hamburgian context). We find it most probable that this microburin in the material from Ramsedalen deterred further investigation of the site in that a Mesolithic context was obvious – or was it? (see also Schmitt 2015b, Figure 2).

Implications

For the time being, and *generally* speaking, the Hensbacka group existed during a 1300-year period between 12,000 and 10,700 cal BP. At the end of this 1300-year long period – a palaeogeographic change took place that seems to have had a profound effect on the Hensbacka culture group; the Otteid and Uddevalla straits dried up at about 10,500 cal BP (Fredén 1988, p. 70). In brief, large quantities of fresh melt water no longer emptied into the

archipelago of central Bohuslän. An earlier and non-local change that might also have had an environmental impact on the Hensbacka (Ahrensburgian) was the drainage of the Baltic Ice Lake at about 11700 cal BP (Jakobsson *et al.* 2007, p. 367) in that this resulted in the closing of the Fehmarn Belt (see Jensen *et al.* 2005, Figure 2). Prior to the drainage event, a connection with the Kattegatt, over Fehmarn Belt and Great Belt, is probable (*ibid.* p. 45) and is supported by C-14 dates (c. 12,000 cal BP) that derive from organic material recovered in sediment samples from the Great Belt (Bennike *et al.* 2004, p. 22, Table 1). In addition, recent tidal modelling suggests that, prior to the drainage of the Baltic Ice Lake; the northern end of the Great Belt was effected by a tidal amplitude (M2) of c.1.2 m in the southern end of the Kattegatt (Schmitt 2015b, pp. 110–111). This means that the difference between low and high tide was about 2.4 m. Nevertheless, the implication here is that it became impractical, but not impossible, to travel by boat between the Continent and Bohuslän shortly after c. 11,700 cal BP. This in turn can have resulted in shorter seasonal rounds within a more restricted regional area; *perhaps* from coastal areas of eastern Denmark. That is to say, from the land area that existed between Læsø and Anholt and, on the eastern side of the Kattegatt, the Swedish west coast (see Schmitt 2015a, Figure 2). In this regard, it is interesting to note armatures types that resemble those found in south eastern Norway and Bohuslän have been found on Anholt (Sørensen 1996, p. 121). Recent investigations, however, suggest a Neolithic dating and not, as could be expected, Mesolithic (see Petersen 2004), although an early Maglemosian site is known from the southern side of Anholt (personal communication, Petersen P.V. 2015/12/19). Moreover, it should be kept in mind that a Late Palaeolithic Bromme point has been found on Anholt (Fischer 1985, Figure 4, p. 84).

Indeed, from an archaeological point of view, perhaps one can define the difference between a Late Palaeolithic lifestyle and an Early Mesolithic lifestyle, as the distance travelled on a seasonal round – and not only because of environmental circumstances, as we have been doing? Indeed, the latter option resulted in the colonization of western

Sweden in the form of a culture group we refer to as the Hensbacka. It should be noted that the drainage of the Baltic Ice Lake at c. 11,700 cal BP did not change the coastline of Bohuslän since it was only the surface of the lake (BIL) that was lowered via an outlet at Närke in central Sweden.

Three phases of colonization

This short article is not a report; it is an enticement. That is to say, it is an attempt to interest future archaeological researchers to put additional ‘meat on the bone’. In short, confirm that which has been suggested using empirical data.

Accordingly, and from a generalized point of view, variations in the tool-kit reflect different activities. If true, this suggests that three chronological phases of the Hensbacka group should be taken into consideration. Firstly, a very early phase (HK-1) from *before* 11,700 cal BP without flake axes; a second phase (HK-2) between 11,700/600 and 11,200/100 cal BP with wide edged flake axes that display concave lateral sides (Figure 3a), and thirdly, a final phase (HK-3) between 11,200/100 and 10,700

cal BP with surface trimmed flake axes that usually display diverging lateral sides when viewed from a proximal butt-end position towards a distal cutting edge (Figure 3b), concave lateral sides are no longer seen. In addition, core axes in the form of Lerbergs axes (Figure 3c), and flake chisels, make an appearance in this third and final phase. It should be noted that the wide edged flake axe mentioned above is a ‘key artifact’ for the HK-2 phase; however, this does not exclude the presence of other morphological types of flake axe in the same (HK-2) phase.

In summary, and as a plausible scenario, we have three phases within the Hensbacka group: *exploratory*, *extraction*, and finally – regional *habitation* at about 11,000 cal. BP. The first and earliest phase is witnessed by the absence of flake axes in the tool-kit and this might mean that they were not needed and or another tool, such as a blade, was employed for an eventual job at hand. These sites can be seen as being *exploratory* in nature. In a somewhat latter phase of the Hensbacka, the large numbers of wide-edged flake axes might express the regional *extraction* of rendered seal oil from blubber that, in part at least, could have

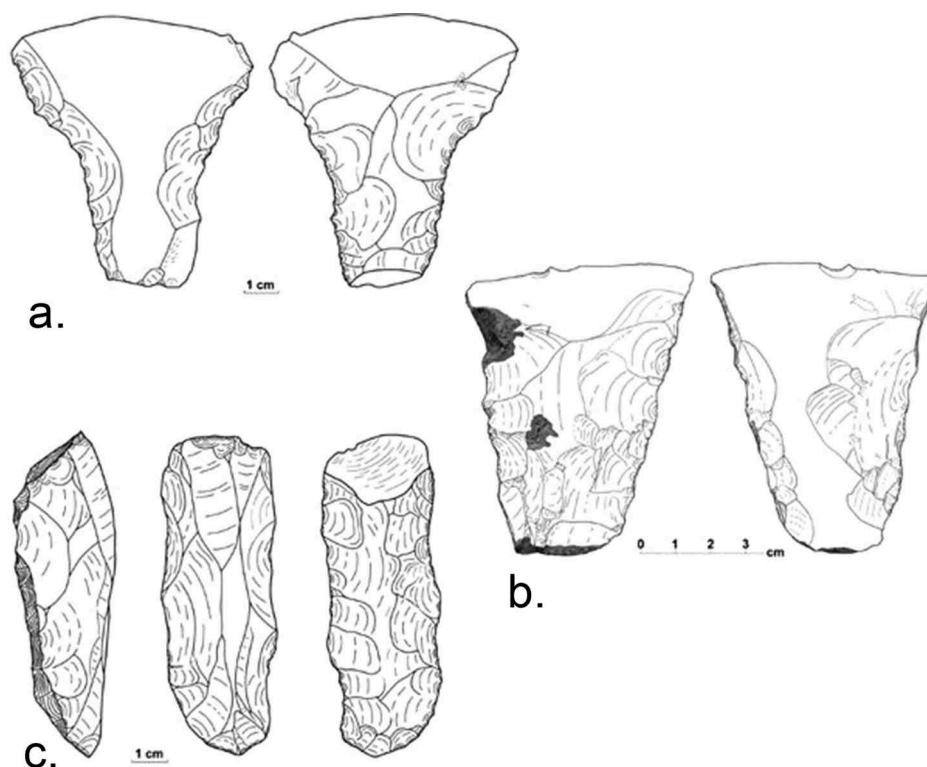


Figure 3. Chronological differences of ‘type’ within the axe/knife populations mentioned in the text. (a) Represents the late phase of the early Hensbacka while (b) and (c) are found in the in the last, or youngest phase, of the Hensbacka. The total absence of these axes/knives indicates the earliest phase of the Hensbacka/Ahrensburgian group.

been transported back to the Continent (for more detail see Schmitt 2013a & Schmitt 2015a). Last but by all means not least, the final form of flake axes, in conjunction with flake chisels and Lerbergs axes, suggests a possible wood working tradition – that was not seen earlier; as such, a phase of regional *habitation* has become a reality. Indeed, this might also mark the close of Ahrensburgian traditions as we know them today.

A concluding reflection

Although we do not wish to debunk what we have suggested here, it should be kept in mind that things are not always what they seem to be. Nevertheless, and until a reliable C-14 dating from a Hensbacka site in Bohuslän becomes available, it is reasonable to assume that our shore displacement curve has a considerable amount of utility in the field during the excavation of Hensbacka sites in western Sweden. As such, it is noteworthy that the method also incorporates a standard ± 100 year deviation.

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Disclosure statement

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