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A Permeable Border – Long-Distance Contacts Between Hunters and Farmers in the Early Neolithic of Scandinavia

Introduction

This paper discusses long distance interaction between hunter-gatherers and farmers in Scandinavia during the 4th millennium BC. The beginning of the 4th millennium coincides with the introduction of agriculture in South Scandinavia, and therefore the approximate year 4000 cal. BC is considered the start of the Early Neolithic (4000–3300 cal. BC) in this region. The Early Neolithic of South Scandinavia is not only defined by the introduction of domesticates, but also by a characteristic archaeological assemblage that include artefacts such as funnel-beakers, polished working axes and polygonal battle-axes. This archaeological complex is known as the Funnel Beaker Culture, traditionally abbreviated TRB after the German term *Trichterbecherkultur* (Jażdżewski 1932; Becker 1948; Midgley 1992).

On the Scandinavian Peninsula to the north of the TRB there lived hunter-gatherers who did not adopt farming during the Early Neolithic; neither did they adopt the material culture characteristic of the TRB. Slate tools are a prominent feature in the archaeological remains of these latter groups, and the find-complex is therefore known as the Slate Culture (Brøgger 1906; Brøgger 1909; Almgren 1912). It can be argued that there really is a sharp divide in the Early Neolithic archaeological material across Central Scandinavia, with the Funnel Beaker Culture in the south and the Slate Culture in the north. There are, however, also traces of contacts across this border in the form of imported exotic objects. This theme will be explored further in this paper, starting with a discussion of an exotic slate knife found at the TRB settlement of Skogsmossen in Eastern Central Sweden.
Skogsmossen is a settlement of the northern Funnel Beaker Culture, located in a forested area of Västmanland, in Mälardalen in Eastern Central Sweden (Figure 1). A part of the site was excavated in connection with the construction of a new railway in 1995, with minor research fieldwork carried out in 1997–98 (Hallgren et al. 1997; Hallgren 2008). The TRB settlements in the region Mälardalen can be roughly divided into two categories, land-facing settlements with an emphasis on cultivation and cattle herding, and sea-facing settlements with an emphasis on seal hunting and fishing. Skogsmossen belong to the former category, dominated by bones of terrestrial herbivores (N=104 fragments), of which determined species represent cattle (8) and sheep/goat (5). The settlement is located on the slopes of a moraine ridge, 62–54 m above present sea level, the distance to the Early Neolithic coastline (40–35 m a.p.s.l.) was no more than 100 m during the beginning of the early Neolithic and about 1.2 km at the end of the period (cf. Risberg 2002). The close proximity to the sea is also evinced by the presence of bones from seal (5 fragments) and fish (5), together constituting 4% of the osteological material.

Apart from settlement remains, the Skogsmossen site contains a small fen that was used for ritual depositions during the Early Neolithic. The find material from the fen includes, among other things, 155 fragmented ceramic vessels, 35 axes and 25 quernstones. Besides finds typical of the Funnel Beaker Culture, the assemblage numbers a few exotic artefacts in the form of slate tools originating from the hunter-gatherer society of Northern Scandinavia. One of these exotic objects, an intact knife of banded red and green slate (Figure 2) displays some interesting traits in both its design and the choice of raw material, which can be used to shed light on the character and scale of the social networks that cut across the “border” between TRB farmers and Slate Culture hunter-gatherers. Before this can be explored further, it is however necessary to present a brief overview of the archaeological materials grouped under the blanket terms of Funnel-beaker Culture and Slate Culture respectively.

The Analytical Constructs “Funnel Beaker Culture” and “Slate Culture”

The archaeological assemblages of the Funnel Beaker Culture sites in Mälardalen are characterized by a re-occurring set of artefacts such funnel-beakers, collared flasks, clay disks, polygonal battle-axes, point-butted and thin-butted working axes, saddle-shaped quernstones, etc. These artefacts can be viewed as the outcome of cultural practices performed in local, partly overlapping, partly separated communities of practice of differing composition (Hallgren 2008; cf. Wenger 1998). While being the outcome of craft practices performed locally, they nonetheless allude to a sphere beyond the local as, for example, the con-
Figure 1. Map of the Scandinavian peninsula (Norway and Sweden) with key sites mentioned in text displayed. Legend, from south to north: dots – the Funnel Beaker Culture sites Skogsmossen and Nyskottet; stars – the Slate Culture sites Persmyra, Gäddede and Grobpakkeengen; crosses – outcrops of banded red and green slate with traces of extraction: Björnidet, Elakedan and Gohppevårrí. (Map by the author).
cepts of the polygonal battle-axe or the funnel beaker are by no means local ones (Becker 1948; Zápotocký 1992). The polygonal battle-axes were, however, not only local versions of a pan-regional theme, but also the product of regional craft traditions. The battle-axes produced in Central Sweden and Southern Norway display a regional design that clearly differs from the battle-axes produced in Scania/Denmark (Zápotocký 1992; Hallgren 2008: 224–228). In contrast to the craft objects produced by local craft communities within the Funnel Beaker Culture of Mälardalen, slate tools only occur as exotic, imported objects during the Early Neolithic (Taffinder 1998; Hallgren 2008: 236–238).

The osteological record of the TRB of Mälardalen contains bones from cattle, sheep/goat, small forest game, seal and fish (Hallgren 2008). The domesticated animals were not only a source of meat and other primary products, but were also utilized in milk production, as shown by lipid analysis of potsherds (Isaksson & Hallgren 2012). Although some wild animals like seal and small game were hunted, elk and other large cervids are very rare in the osteological material. The botanical record includes evidence of the cultivation of wheat, barley, peas, beans and wine-grapes. As with craft traditions, subsistence can be viewed as cultural practices performed in specific social contexts, communities of practice, of differing composition. This theoretical perspective can also be applied to architecture. It is striking that the house building practices of the local Funnel Beaker Culture were guided by the same cultural norms that were also reproduced within the TRB of Scania and Denmark as there was a common design of post-built long houses of the Mossby type throughout these regions (Larsson 1992: 66–77; Hallgren 2008: 95–99).

As with the analytical construct Funnel Beaker Culture, the Slate Culture can be viewed as locally performed practices of non-local repertoires. A stone industry based on “slate” is for example a common feature (The raw material that by tradition is termed slate in the archaeological discourse is classified as siltstone or shale in the geological literature. I will keep to the archaeological terminology here). Another common feature consists of houses with a slightly sunken floor, surrounded by an embankment of sand and fire-cracked rocks from cooking (Boaz 1997; Lundberg 1997; Hesjedal et al. 1996; Damm 2006; Norberg 2008). Most settlements are found in close proximity to water, either coasts, lakes, rivers or brooks. A typical inland settlement may consist of between one and ten semi-subterranean houses located along the shores of a lake system (Lundberg 1997). In contrast, the coastal sites of Northern Norway sometimes contain as many as 80–90 Early Neolithic houses in rows along the ancient shoreline (e.g. Gropbakkeengen and Slettnes, c.f. Simonsen 1961; Hesjedal et al. 1996). While the scale of the groups gathering at these coastal sites differs from the interior lake sites, I am nonetheless prone to see the houses as variants of the same pan-regional architectural practices performed within local communities of practice.

Elk and beaver predominate among the osteological materials from the interior, whereas coastal sites also display fish, birds, seal, and in northern Nor-
way whale (Olsen 1967; Lundberg 1997, cf. Hodgetts 2010). In many regions within the slate culture there were heavy investments in permanent trapping systems for elk and reindeer, with fences and pitfalls (Helskog 1988: 2–3; 104–105; Selinge 2001). Elk and reindeer were a prominent feature in symbolism, appearing in petroglyphs and as slate figurines. Significantly, elks also appear at sites where the main subsistence activities are considered to have been fishing rather than elk-hunting, such as Nämforsen in Ångermanland and at Slettnes in Finnmark (Hallström 1960; Baudou 1992: 74; Hesjedal et al. 1996).

Local and Regional Traditions in the Slate Industry

Just as polygonal battle-axes can be viewed as objects produced in local craft communities following regionally reproduced norms, which refer to a pan-regional theme, there is a similar complex relationship between local, regional and pan-regional variation among the slate knives of the Slate Culture. This is a subject I hope to study more thoroughly in the future. In this paper I will focus on the design and raw material of the exotic knife of banded slate found in the offering fen at Skogsmossen.

In its present state, the knife is 13 cm long and consists of a curved, slim blade, and a straight handle that ends in two “ears” (Figure 2). The blade show traces of repeated resharpening. The border between the handle and the blade is marked by a small knob-like protrusion. It is likely that the knife originally had two such protrusions, one on each side of the handle (cf. Figure 3). As a result of the repeated re-sharpening of the blade, part of the handle (including the hypothetical second knob) was reworked into the base of the blade. The same detail appears on an exotic slate knife from another TRB settlement in Mälardalen, Nyskottet in Uppland, as well as on three stray finds of slate knives from Västmanland and Uppland (Taffinder 1998: 136).
When the find from Skogsmossen was first published (Hallgren et al. 1997: 92–93), I made comparisons with slate knives from Nämforsten, Ångermanland, in Northern Sweden, in which a somewhat similar design occurs. There is, however, a principal difference insofar as the knives from Ångermanland and neighbouring areas of the coast of Norrland have protrusions defined by notches rather than real protrusions (Jansson & Hvarfnér 1960, fig. 49). A better comparison is a group of slate knives from Central Norway, where at least 16 specimens with knob-like protrusions are known (Søborg 1986). I am currently in the process of studying assemblages from Northern Sweden and so far I have found only two examples of this design, both from sites in western Jämtland: Gäddede in Frostviken parish and Faxnälden in Näskott parish (Figure 3). It thus appears that slate knives with protrusions are a regional design reproduced among stonemasons in the western parts of Central Scandinavia (Trøndelag, Møre og Romsdal, Nordland, and western Jämtland), a region that seems a likely area of origin for the exotic slate knives found at Skogsmossen and Nyskottet.

The knife from Skogsmossen was made of banded red and green slate. Red or banded red and green slate is also the most common raw material in the slate knife industry of the likely areas of origin: Trøndelag/Nordland/Møre og Romsdal (Søborg 1986: 257–294) and western Jämtland (my observation). The availability of different slates in Central Norway has been discussed at some length by Søborg (1986), who found that red and green slate do not occur locally, whereas slate of other colour varieties do (Søborg 1986: 257–294). The preference for red or banded red and green slate among knife smiths in Trøndelag and neighbouring areas was thus not dictated by easy availability. Neither was slate in these colours available in Näskott and Frostviken, although the latter area is situated closer to the sources of banded slate (c. 55 km as the crow flies).

Banded red and green slate is available in outcrops at a rather limited number of places unevenly spaced along a fault line on the eastern border of the Caledonian mountain range. This fault line runs from Finnmark in Northern Norway southward through the interior of Sweden to the Mjøsa region in Southern Norway (Vogt 1924; 1967; Asklund & Thorslund 1935; Føyn 1967; Thelander,
1971; 1982; Gee et al. 1990). In these localities, beds of slate typically form layers between 15 and 200 m in thickness, often mixed with layers of sandstone and/or quartzite. The slate appears both as homogenous layers of red or green colour, and as beds where red and green alternate forming the characteristic banded slate. Red slate with spots of green, or green slate with spots of red also appear at some localities. There are variations in the hues and saturation of the colour of the slate, and accordingly “red” slate can be bright red, greyish red, dark red, violet and brown. Correspondingly, “green” slate may be moss green, grey green or a light green bordering on white. Apart from the primary slate outcrops, the moraine (till) deposits in the vicinity of these outcrops also contain boulders of slate of the same varieties.

One or several of the geological formations between Tana and Mjøsa must be the source for the red and green slate used in tool production in Trøndelag and adjacent regions (Søborg 1986). The first discovery of traces of extraction and quarrying red slate has recently been reported by Alsaker in a popular publication on the Stone Age of Trøndelag (Alsaker 2005: 70–71). The slate quarry in question is described as located by the river Sjoutälven in westernmost Ångermanland, Northern Sweden, where red and green slate appear both as outcrops and as boulders in the moraine. Although situated on the other side of the Caledonian mountain range, this red and green slate deposit is in fact one of the closest to Trøndelag (c. 150 km from the coast of Trøndelag), and Alsaker suggests that the Sjoutälven quarry may be one of the sources for the slate industry of the latter region (Alsaker 2005: 70).

During the summer of 2009, I visited several of the formations of red and green slate described in the geological literature, including locations in Vestertana, Smalfjord, Tana and Varanger in Finnmark, northern Norway, as well as Storbäck in Southern Lappland, Sjoutälven in western Ångermanland, and Storån and Strömberget in northern Jämtland, Northern Sweden. Along Sjoutälven possible traces of extraction of slate were found at Elakedan. This is probably the same locality mentioned by Alsaker (although he does not describe the exact location). Traces of possible extraction and quarrying were also observed at Göhppevärri in Smalfjord and at Björnidet at Strömberget (Figure 1). At Vestertana, Tana and Storbäck, slate of good quality was found but no traces of extraction were encountered during the limited surveying. Banded red and green slate of the same geological formation also occurs in the Mjøsa region of Hedmark, Southeastern Norway (Vogt 1924). Although I have yet to visit this locality, it is an unlikely source of raw material for Neolithic slate tool manufacture, as the find assemblages of the Mjøsa region only contain debitage of slate of other colours (my observations of the collections from Hedmark and Oppland at the Oldsaksamlingen, Oslo).
Tracing Long-Distance Contacts

Judging by its design, the knife from Skogsmossen was most likely produced by stonemasons working in a craft tradition reproduced in Western Central Scandinavia, as discussed above. The raw material was however fetched either from the other side of the mountains in Jämtland, Ångermanland or Lappland, or possibly in Finnmark in northernmost Norway. Either way, great effort was made to acquire this specific slate despite the fact that functionally equivalent materials of other colours were available locally, for example in Trøndelag. The finished object was then used and circulated, first in the original cultural contexts, thereafter in contacts across the border between hunters and farmers, which may have been both peaceful and warlike. Finally, the foreign, exotic knife was incorporated in the ritual of the local farmstead(s) at Skogsmossen, being included among the offerings of funnel-beakers, axes and quernstones that the farmers deposited in their sacred fen.

Similar to the exotic slate knives that were circulated among the northern Funnel Beaker Culture, foreign stone tools such as battle-axes and four-sided polished working axes originating among the TRB were circulated and deposited among the hunter-gatherers in Central and Northern Scandinavia (Figure 4). One example of a Slate Culture context with exotic TRB objects is the Persmyra locality at Rødsmaoen, Hedmark, Eastern Norway, a site complex with several semi-subterranean houses, two (R39, R112) of which have been 14C-dated to the Early Neolithic (Boaz 1997). The osteological material is dominated by bones of elk but also include beaver, bear, wolverine, marten, otter and pig/wild boar. The houses are interpreted as winter residences for a group of hunters (Boaz 1997: 143). Among the stone finds that can likely be linked to the Early Neolithic phase of habitation are tools and waste of slate, mainly arrowheads (n=80) but also a large point (spearhead or dagger) and a point fragment of a slate knife. One of the slate finds, a handle of a fragmentary tool decorated by a series of a dozen notches on the butt end, has been interpreted as a part of a T-shaped artefact by Boaz (1997: 69–76) but may rather be the handle of a knife (I will discuss this implement further in another paper). The slate waste consists of knapped, sawed and polished pieces of black, grey and white slate. These variants of slate also dominate among the finished tools, but there are four arrowheads of red slate and the large point is made of banded green and red slate. Even though red and banded red and green slate is available locally in Hedmark, as discussed above, the lack of waste in these materials indicate that the red and banded red and green implements are imports from areas further north.

The finds from Persmyra R39 and R112 include a large quantity of knapped flint. Judging by technological and typological criteria, most of the knapped flint may be connected with the Mesolithic phases of occupation that also are reflected in the series of 14C-dates (Boaz 1997; Per Persson personal communication; Steinar Solheim personal communication). Some of the flint is however of Neolithic age, and this dating can be attributed to a group of flakes with remains of polishing on one or more surfaces, i.e. flakes knapped from polished
Figure 4. The distribution of “exotic” TRB axes (stars) found north of the northernmost known Funnel Beaker Culture sites in Scandinavia (dots). Legend: stars with white fill – polygonal battle-axes; stars with light grey fill – point-butted and thin-butted flint axes; stars with dark grey fill – point-butted and thin-butted greenstone axes. (Map by the author).
flint axes, originating in the TRB of southern Scandinavia. Rather than being evidence of the re-sharpening of flint axes, these flakes represent the utilization of flint axes as cores for the production of small tools. The raw material for the axes is flint from Denmark or Scania. Most of the flint axes found to the north of these areas are considered to have been circulated as finished objects, i.e. not only did the raw material originate in Denmark/Scania, but the manufacture of the axes also took place there (Welinder 1988). A possible exception to this pattern is the Oslofjord region, where local production of Early Neolithic flint axes made from imported flint has been suggested (Mjærum 2004). In either case, the fragments of flint found at Persmyra are examples of exotic objects that have been handled in a longer or shorter chain of events, from the flint mines in Denmark/Scania, through the craft community of flintsmiths either in Denmark/Scania or southern Norway, and then in the encounters of persons of the Funnel Beaker Culture with the elk hunters of northern Hedmark, who subsequently used these axes not as axes but as raw material for the production of small tools.

The find assemblage at Persmyra R112 also include a thin-butted greenstone axe, found in one of the two houses at the site. The axe is made of a variant of porphyritic dolerite and likely originates in the TRB of Oslofjorden or Central Sweden. The edge of the axe is damaged, but could easily have been re-sharpened and can therefore be considered as a “potential tool” intentionally taken out of circulation through deposition. Thus, while the utilisation of flint axes as raw material at Persmyra, stand out in stark contrast to the inclusion of the slate knife in the rituals performed at the offering fen at Skogsmossen, the intentional deposition of the greenstone axe at Persmyra may have been more similar in character.

Compared to the total distribution of Early Neolithic TRB axes found north of the regions with settlements from the Funnel Beaker Culture, the polished four-sided working axes of greenstone have a rather limited spatial distribution. As “foreign axes” they only occur in the southernmost areas of the Slate Culture, i.e. in what may be considered a contact zone between the TRB-farmers and the hunter-gatherers of the North (Figure 4). Within this region, flint waste with traces of polishing seem to be quite common (Danielsson 2000), indicating a similar attitude towards exotic TRB axes as at Persmyra.

The polygonal battle axes of the TRB have a more northerly distribution and appear as far north as Central Jämtland and Northern Ångermanland (Figure 4). There is a clear tendency that the distribution of these exotic implements follows the waterways, indicating networks of contacts along the coast and along water courses. Interestingly enough, the stray finds seem to cluster along specific river systems, while being absent from others. The two northernmost finds of polygonal battle-axes from the inland are a case in point, as they have been found a mere 10 km from each other along the same river. The river in question, Ammerån, is one of the few water systems in Jämtland not dammed for hydraulic power, and thus investigated to a comparatively small degree by archaeologists. It is quite remarkable that two stray finds of polygonal battle-axes have been made along this small river in the wilderness. One axe, an edge fragment
preserved from shaft-hole to edge (Figure 5, left), was found at Flyn in Stugun parish. Since the find was made, one semi-subterranean houses of the same type as described from Persmyra has been registered at the site (there may actually be two house structures at the site – my observation). Houses of this type are generally interpreted as winter dwellings (Lundberg 1997), and this may be also valid for Flyn. The other polygonal battle axe from Ammerån was spotted lying on the bottom of the river during ice-fishing (!) at Skyttmon, Borgvattnet parish, 10 km upstream from Flyn. Considering that this axe is an intact specimen (Figure 5, right), it may be an intentional water offering.

The intact axe from Skyttmon can be determined as being a regional type common in Central Sweden and Southern Norway (Zápotocký’s type III), as opposed to Denmark/Scania or Continental Europe where other designs prevailed (Zápotocký 1992; Hallgren 2008: 215–228). The edge fragment is more difficult to determine as to its type, but judging by the cross-section and the groove that runs from the shaft-hole to the edge, it is likely either a KV or a FIII axe. KV is a regional type specific to Central Sweden. FIII axes were produced both in Central Sweden and in Denmark/Scania, but as the design with a groove running from the shaft-hole to the edge is comparatively rare in the latter region it is likely that the axe originate in Central Sweden. The area of origin of both these exotic axes is thus likely the Northern TRB of Central Sweden/Southern Norway.
It would be tempting to see a direct connection with the clusters of exotic polygonal battle-axes in the Slate Culture areas of Jämtland and Ångermanland, and the relative abundance of exotic slate knives in the TRB of Mälardalen. While there may indeed be a connection, it should be borne in mind that at least the knives with protrusions on the handle from Skogsmossen and Nyskottet (as well as the 3 stray finds of the same type), probably had an origin beyond the regions of eastern Jämtland and Ångermanland where polygonal battle-axes appear. As discussed above, the knives with protrusions on the handle may be traced back to westernmost Jämtland, Trøndelag and adjacent regions, areas from where no exotic polygonal axes are known.

Although polygonal battle-axes thus have a wider distribution north of the TRB, compared to the greenstone working axes discussed above, none have been found in northernmost Sweden (Lappland, Västerbotten, Norrbotten), and the distribution north of the TRB in Norway is restricted to Hedmark and Oppland (Figure 4). In contrast, the flint axes originating in the Early Neolithic TRB have a wide spatial occurrence throughout Central and Northern Norway up to Southern Troms (Valen 2007; Østmo 2007). The difference is less pronounced on the Swedish side, although the flint axes have a distribution that reaches both further north (Västerbotten) and further west (western Jämtland) than the polygonal battle-axes (Figure 4). As discussed above, the flint originates in Denmark or Scania, and most flint axes were also manufactured in these regions, and then circulated as finished objects. It may seem paradoxical that the exotic objects that are of the most distant origin also have the furthest secondary distribution, a paradox that may say something of the nature of the network of contacts that facilitated the circulation of exotic objects.

Discussion

As mentioned in passing above, the exotic TRB axes are not the only non-local tools in the assemblage at Persmyra, as several of the points are made of varieties of slate that are not utilized in the local craft tradition. Among these are four arrowheads of red slate and the large point/knife of banded green and red slate. Boaz suggests that these implements may derive from Northern Scandinavia (Boaz 1997: 143). As the large point/knife is made of the distinctive banded slate discussed above, this tool may originate from anywhere between Jämtland and Finnmark. Homogenous red slate, as that of the smaller points from Persmyra, is available as layers or beds in the same formations that also contain banded slate. Homogeneous red slate is also available in the Nordingrå formation in coastal Ångermanland (Lundqvist 1990). Judging by the slate tools, preforms and debitage in the Nordingrå region (e.g. the large assemblage from Överveda, Ångermanland), the red slate from Nordingrå clearly differs in hue and saturation from that of the red points from Persmyra (my own observation). Thus, the red points from Persmyra more likely originated in the outcrops of banded slate
discussed above, i.e. the eastern border of the Caledonian mountain range in Central or Northern Scandinavia.

The presence of both TRB axes from the south and slate tools from the north show that the group of people who lived at Persmyra participated in wide-ranging social networks that directly or indirectly stretched from Denmark to Northern Norway/Northern Sweden, and right across the border between hunter-gatherers and farmers. The same can, of course, be said about Skogsmossen, where both exotic slate tools from Western Central Scandinavia and foreign flint axes from Scania/Zealand were included in the rituals at the local offering fen, where also the locally produced funnel-beakers and porphyrite axes were laid to rest.

In archaeological writings, an asymmetrical relation between farmers and hunter-gatherers is sometimes assumed (eg. Ekholm 1909: 69, although more recent examples could be listed). In these narratives, farmers are described as dominant and active, while hunter-gathers are portrayed as submissive and passive. It may therefore be worth emphasizing that the data on exotic Funnel Beaker Culture axes and Slate Culture slate knives in Scandinavia do not validate such an interpretation. Neither the extent of the social networks that facilitated the circulation nor the circumstances of how these objects were intentionally taken out of circulation at places such as Skogsmossen and Skyttmon indicate that the relation between farmers and hunters was asymmetrical or could be described in terms of active and passive.

In the above text, the term “border” is used in several instances. The long-distance contacts between farmers and hunters traced through the circulation of exotic objects discussed in this paper show that this “border” was quite permeable. Rather than a barrier, the boundary between Funnel Beaker Culture and Slate Culture can be seen as a contact zone. It is sometimes assumed that contact and interaction creates similitude. The scenario discussed here could be taken as an example of the opposite. Despite the repeated and prolonged interaction across this zone of cultural difference, the contrast between North and South remained for the 30 or so generations we brand “the Early Neolithic”. On the other hand, also this long-surviving boundary was eventually redefined at the onset of the Middle Neolithic, a subject that is discussed in Hallgren & Skandfer (in press).

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