

Tuija Rankama (ed.): *Mesolithic Interfaces: Variability in Lithic Technologies in Eastern Fennoscandia*. Monographs of the Archaeological Society of Finland 1. Archaeological Society of Finland, Helsinki 2011. ISBN 978-951-98021-9-0. 253 pp



Recent years have seen a revived interest in lithic technology in Fennoscandian archaeology, partly stimulated by the penetration of French *chaîne opératoire* methodology and partly by the empirical recognition that lithic assemblages contain more variability than can be accommodated by traditional typological methods. This is particularly the case for the Early Mesolithic, which is now seen to be comprised of different eastern and western technological traditions. This book is a consequence of these trends, reflecting a need to re-think our understanding of Mesolithic lithic assemblage variability in the northern and eastern portions of Fennoscandia.

Available in both a hardback and a web-based .pdf version ([http://www.sarks.fi/masf/masf\\_1/masf\\_1.html](http://www.sarks.fi/masf/masf_1/masf_1.html)), the publication is a handsome work, produced with a full repertoire of colour illustrations (photos, maps, graphs) and traditional line drawings of artefacts. Care has been taken to

maximise the size of the artefact depictions so as to facilitate observation of detail. The fine lay-out results in a highly readable text.

As outlined in the 'Forward' by Tuija Rankama and the short 'Introduction' by Esa Hertell and Mikael A. Manninen, the book had its point of departure in a lithic technology group formed at the University of Helsinki. The purpose of the group was the study of technological variation in the Mesolithic and how this variation played out in relation to 'interfaces' understood as regional, chronological and cultural border zones. The goal was anthropological inference from lithics rather than traditional chrono-typological studies, so the focus was on variability in technological practices, settlement mobility and inter-regional exchange. The book contains eight articles, with area coverage ranging from northernmost Finnish Lapland and adjacent areas of northern Norway and Sweden, to southern Finland, Estonia, and northwestern Russia, and it includes both individual site analyses and regional to supra-regional analyses.

Leading off, Esa Hertell and Miikka Tallavaara deal with one of the sharp regional interfaces: the lack of geological deposits of flint in Finland versus the abundance of flint sources to the south and the east. Their goal is to account for the presence of exotic flints during the colonisation phase of the Finnish Early Mesolithic. Using ethnographic data on hunter-gatherers derived from Binford and Kelly, they consider the possible scales of land-use implied by different forms of residential and logistical mobility, and how these might affect colonisation processes relative to the distances between southern Finland and the flint sources. The conclusion is that the flint sources were unlikely to have been accessible within the projected home range of Finland-based groups. The diversity of flints at the Ristola site suggests multiple knapping episodes and the technology implies curation practices to extend lithic use-life, so the authors opt to view the collection as indicating multiple visits and the acquisition of flint as occurring through exchange rather than procurement at source. Flint acquisition through gift exchange is seen as embedded in the opera-

tion of regional mating networks. Evolutionary ecology is used to posit the evolutionary benefits of acquiring distant mates; females living behind the colonisation front would improve their evolutionary fitness by mating with males on the colonisation front, who could produce superior foraging returns than males in the already settled areas with higher population densities. While useful for envisioning possible parameters of the colonisation process and their archaeological implications, the model implies a rather mechanical 'creeping-front' colonisation process with predictable spatial consequences. Historical contingency, however, tends to erode neat model predictions; colonisation patterns may have been more opportunistic and spatially irregular.

Next, Jarmo Kankaanpää and Tuija Rankama address spatial patterning at the Early Mesolithic site Sujala in northern Lapland. After an overview of the Post-Swiderian blade assemblage they consider the lithic distribution patterns in relation to an area interpreted as a dwelling structure. They conclude that most of the production, use and maintenance of tools were conducted within the dwelling, but that distinct clusters of lithics outside what they interpret as the entrance to the dwelling represent dumping episodes for waste produced within the dwelling. The tendency of lithic material to be concentrated on one side of the inferred dwelling is suggested to indicate an age/gender organisation of internal space.

The subsequent paper by Aivar Kriiska, Esa Hertell and Mikael A. Manninen moves south to Estonia. After a brief discussion of the need to shift from chrono-typological studies to technological organisation and raw material economies, the authors consider four Mesolithic and three Neolithic sites. They focus on the flint components of assemblages that also contain varying amounts of quartz. Some of the flints were procured from local moraines, while others were imported from Baltic sources to the south or west during the Mesolithic, and from Russian sources to the east during the Neolithic. The analysis explores metric variation in a techno-classification consisting of cores, flakes, blades and tools, with a basic distinction between platform and bipolar reduction methods. Size variation is viewed as an indicator of lithic economising behaviour and as related to raw material dimensions. Kriiska et al. conclude that the prevalence of bipolar reduction was a situational response to the scarcity of

flint raw materials. Furthermore, they link the transition from flint-dominated assemblages in the Mesolithic to quartz-rich assemblages in the Neolithic to changes in foraging strategies from terrestrial resources to increased use of marine resources. The concomitant reduction in mobility decreased access to flint, resulting in greater use of quartz and more economisation of flint. The authors suggest that lithic economising behaviour should be used as a default assumption in research; results that deviate from this assumption can then be given a 'cultural' explanation. Other scholars, however, might find this 'culture as residual' approach to be less compelling.

Mobility and the organisation of core technology in Finland, Estonia and Russia are explored by Esa Hertell and Miikka Tallavaara. Three basic forms of core technology are identified, aimed at producing blades, bladelets and flakes. Species diversity in the faunal material is used as a surrogate measure of mobility. Marshall Binford and Kelly's data, hunters specialising on large terrestrial mammals should display high mobility and frequent residential moves, whereas a reduction in mobility and longer residential site occupations should be associated with an expansion of diet breadth. However, only five sites were available for which both faunal and core data could be compared. The authors conclude that conical core technology conferred a selective advantage in high mobility contexts, particularly in the Early Mesolithic, while irregular core technology was associated with a reduction of mobility towards the Late Mesolithic. Narrow-face cores (i.e. 'handle cores' for producing bladelets) do not show a clear time trend, although they are more common during the Late Mesolithic, when mobility decreased. These conclusions are based on a very limited data sample, so they should perhaps be regarded more as hypotheses to be tested in the future. The concluding discussion raises some key points for future work: mobility patterns and foraging strategies can be mixed, they may vary over short time spans (e.g. seasonally) as well as regionally (coast/inland), transportation technology (e.g. watercraft) needs to be factored in, as does the availability of raw materials. Introducing these additional variables makes the model more realistic, but it also presents greater challenges for robust testing. Finally, the authors emphasise that the organisation of lithic technology must be seen as related to selective advan-

tages in adaption, rather than as a source of inferences concerning past ethnicities. One need not subscribe to the paper's underlying evolutionary ecology perspective to appreciate this anti-normative stance.

Blade technology is present in the Finnish Mesolithic, but until recently, it has not been fully investigated given its relative scarcity in assemblages otherwise dominated by quartz. Mikael A. Manninen and Esa Hertell provide the first detailed overview of blade finds from Finland. They consider blades and blade cores, as well as blades retouched into other implement classes. A chronology is established using radiocarbon and shoreline dates. Blade technology is found during the entire Mesolithic, but shoreline dates from southern Finland indicate it was also present during the Neolithic. Technological styles and raw material sources indicate the Finnish blade materials are primarily related to those in central Russia and perhaps the eastern Baltic region; only one site in Finland displays south Scandinavian attributes.

The next two papers look at different aspects of the 'oblique point' tradition of the Late Mesolithic. Mikael A. Manninen and Kjel Knutsson evaluate the inland manifestation of this tradition in northern Finland, Sweden and Norway. They provide an inventory of inland sites containing these points and they assess the radiocarbon dates associated with the localities, concluding that the points were mainly in use between 5800–4700 calBC, although their use may have begun as early as 6400–6900 calBC. The chronologies of the oblique point sites on the Norwegian coast and in southern Finland are also considered; the radiocarbon and shoreline dates correspond broadly to the main time span of the inland dating. Oblique points were produced using a flake-based rather than blade technology, which facilitated the flexible production of unstandardised point blanks from a wide range of raw materials of variable quality. This technological tradition seems to have a border in northern Swedish Lapland, where it interfaces with the handle core microblade tradition of central and northern Sweden. The border is suggested to represent the meeting point of two early post-glacial colonisation waves, one originating from the south the other from the east. The developmental context of the oblique point tradition was the post-glacial boreal forest maximum, which involved increases

in the availability of some species (elk/moose) and possibly changes in the behaviour of others (reindeer).

The oblique point tradition is explored further by Mikael A. Manninen and Miikka Tallavaara, who take up the concluding point of the previous article, that the tradition represents the rapid spread of the technology through a geographically extensive social network. Now the question is whether the oblique points found in northern and southern Finland represent the same technological tradition – the margin-retouched point concept – and thus share a common descent history, as this is understood within cultural transmission theory. Specifically, do the points represent two different directions of origin – one in the north related to the Norwegian coast, the other from south of the Baltic – or only one of these possible sources? A technological and formal analysis of the points is presented, with quantitative data from bivariate correlations between variables and the assessment of univariate variation. The result is that most of the variability in the point sample can be attributed to raw material differences: the northern points are mostly made of chert while virtually all the southern points are made of quartz. Thus the northern and southern points can be regarded as part of the same technological tradition, which exhibits regional adaptations related to raw material availability. An assessment of radiocarbon dates for margin-retouched points suggests their earliest occurrence (c 7000 calBC) is in the northern Lapland interior and on the Norwegian coast. The 8200 calBP (6200 calBC) cold event reduced marine environment productivity on the coast, leading to greater use of the interior by coastal groups and the concomitant adaptation of their technology to more diversified raw material use, with increased emphasis on quartz. During the subsequent thermal maximum and boreal forest expansion the point concept was transmitted southwards through social networks, perhaps as a technological 'package'. Although data supportive of the climate change/culture change explanation are rather limited, the interpretation provides a useful starting point for future research.

The final paper, by Tuija Rankama and Jarmo Kankaanpää, analyses Late Mesolithic quartz assemblages from the Kaaraneskoski site in southwestern Lapland using a *chaîne opératoire* approach. The focus is on identifying the techniques

used in quartz reduction (platform, bipolar, microblade), assessing the formation characteristics of the debitage assemblages using fragment type analysis, and evaluating the spatial distributions of tools and debitage. The multiple lithic clusters at the site indicate re-use over several hundred years and the high frequency of tools as well as their diversity suggests the location was a multi-activity site. The high ratio of tools to debitage and the skewed representation of debitage fragment types imply that most quartz reduction occurred elsewhere than at the excavated localities and that some fragment types were selected preferentially for tool production. The presence of handle cores for microblades – along with very few microblades – in an assemblage that otherwise is characteristic of the oblique point technological tradition, suggests interaction with the handle core tradition of neighbouring northern Sweden.

This book is an important contribution to Fennoscandian Mesolithic studies. While the individual papers contribute to expanding empirical horizons, they are perhaps more important for their methodological innovations in lithic analysis and for their potential theoretical implications. They point to how we can get more out of seemingly recalcitrant lithic assemblages than simply reproducing sterile chrono-typological thinking. They suggest how the lithic assemblages can be seen within the bigger picture of technological organisation in relation to regional settlement mobility. They also suggest ways of linking lithic variability to conceptual models such as optimisation theory from behavioural ecology and cultural transmission theory. The latter directions require fuller development, both theoretically and in terms of empirical testing, but they raise hopes that Fennoscandian Mesolithic data eventually can contribute to more than baseline culture history.

Bryan C. Hood  
Professor of Archaeology, University of Tromsø  
– The Arctic University of Norway  
bryan.hood@uit.no