

**Book review of: Nurminen, K. (2020). Fish Bones and Fishing in Finland during the Stone Age. ISKOS 23. Helsinki: The Finnish Antiquarian Society.** Softcover, 128 p. with 74 figures (in majority in colour). ISBN 978-952-6655-24-6.

*Bente Philippsen*

The book "Fish Bones and Fishing in Finland during the Stone Age" by Katariina Nurminen is the author's PhD thesis. In just over 100 pages, it describes a new field of study in Finnish prehistoric archaeology – the study of burnt fish bones. Due to Finland's acidic soils, bones are usually not preserved. Only burnt or cremated bones can still be found. This is a particular challenge for those who want to study fish bones – undoubtedly an important resource in a country so rich with rivers, lakes and coastline – as burning changes the morphology of bones, especially that of the fragile fish bones. Until now, the methodological challenges have prevented such studies. The author solved some of these by building her own reference collection and by studying the effects of burning on the appearance of fish bones and the effects of screening with different mesh sizes on species representation.

A short introduction (chapter 1) describes the aims, purposes and challenges of the study, followed by introductory chapters (2-5) on the theoretical, environmental, ethnographic and archaeological background on fishing in prehistoric Finland. Chapter six, "Materials and methods", maps the bones of a fish in its skeleton, and presents a map of the studied sites in Finland. Chapter seven describes different experiments, or taphonomical studies, about the effects of burning on fish bones and some screening (sieving) tests performed on archaeological material. Chapter eight contains fish bone analyses of five inland lakeshore and five Baltic coast sites, spanning from the Mesolithic to the Late Neolithic. Chapter nine comprises two case studies, one on Burbot and possible winter fishing, and one on Cyprinid species in the Stone Age. After a discussion of the insights gained during the preceding chapters, the papers that Nurminen had authored during her PhD studies are included as an appendix.

Parts of the book are written in a more personal tone, which would be unusual in scientific articles. This adds an interesting human perspective to the motivations behind this study.

The book is an important source of information about fishing in the Finnish Stone Age. It describes the relative importance of the different

freshwater species and shows that, with the right screening strategy, fish bones can be retrieved from many settlements. It is therefore a good addition to the studies of charred macrofossils or cremated mammal bones, which illustrate some aspects of human diet.

The author's new method of analysing burnt fishbone assemblages opens up a large number of sites, which are situated on acidic soils or where unburnt fishbones had not been preserved because of other reasons. These assemblages can now be analysed, removing a large bias from research into Stone Age economy. The book is therefore a useful resource, also outside of the author's study area of Finland. The techniques developed here can also be applied to other time periods than the Stone Age. Furthermore, freshwater fishing was an important subsistence strategy in prehistoric Northern Eurasia. The situation in Finland might not be as unique as the author assumes, and I think that comparisons to sites in other countries are valid. Therefore, I will not hesitate to recommend this book to other researchers working on prehistoric fishing techniques and (burnt) fishbone assemblages regardless of their study area.

With the expertise and reference collection, which form the basis of this book, I expect that future zooarchaeological studies will embrace all aspects of Stone Age hunting and fishing, thus providing a richer image of past economies by including fishbones. Even field archaeology can be improved by using the optimal screen sizes the author found for sieving soil samples.

A more thorough editing, though, would have benefitted the book by eliminating a few spelling or grammatical errors. However, I acknowledge that this might be difficult to provide for the publication of a PhD thesis. Furthermore, the few errors do not change my general recommendation of this important work.

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