NOTES

PRELIMINARY ANALYSIS OF STABLE OXYGEN ISOTOPES AND SHELL GROWTH IN THE SOFT-SHELLED CLAM *MYA ARENARIA*: IMPLICATIONS FOR INTERPRETING SEASONALITY AND SHELLFISH HARVESTING IN PORT JOLI, NOVA SCOTIA

Meghan Burchell, Matthew Betts, A. Katherine Patton and Bernd R. Schöne

The systematic analysis of shellfish remains recovered from shell midden sites from Port Joli Nova Scotia can provide insight into local and regional patterns of shellfish harvest, the season of shellfish harvest, and by proxy, site occupation. Using a combination shell micro-growth pattern analysis (sclerochronology) and stable oxygen isotope analysis ($\delta^{18}O$) it is possible to attain a precise season of shellfish collection and the population dynamics of past marine ecosystems. Combined, these data can be used to understand long-term human environmental interactions and adaptations to coastal settings. Prior to applying stable isotope sclerochronology to an archaeological sample of shellfish, modern specimens of *Mya arenaria* (soft-shelled clam) need to be examined for both growth patterns and geochemistry. If the results of the analysis of modern shells are recording local environmental conditions and annual growth lines in their shell, then the methods of growth line visualization and stable oxygen isotope analysis can be applied to archaeological shells with confidence. In this report we discuss the potential for using *M. arenaria* in archaeological research by conducting a visual analysis of growth lines in the chondrophore, and an analysis of the stable oxygen isotope values of different parts of the shell structure, specifically the ventral margin and chondrophore.

BACKGROUND

The *E'se'get* Archaeology Project is a community-based, collaborative research initiative aimed at chronicling Maritime Woodland Period (ca. 3100 BP - 500 BP) culture history on Nova Scotia's south shore. Since 2008, project members have intensively surveyed and excavated ancient shell midden sites in Port Joli Harbour, using fine-grained excavation methods and sampling protocols. There are two central premises which guide this research: 1) that the pre-contact Mi'kmaq were a central part of coastal ecosystems and had a recursive socioeconomic relationship with those ecosystems, and 2) as samplers of these ecosystems, their shell middens contain significant palaeoecological and population information that can be used to reconstruct the Mi'kmaw ecumene and extend our understanding of long-term