Centre for Archaeological Science

Key Research Project

Shell as a raw material

Molluscan shell is a widely used raw material in the production of artefacts, but reaches its zenith in the tropical Asia-Pacific region. Not simply a substitute for often poor stone materials, the variety of raw materials selected and the range of working techniques applied indicates that shell-working developed along a different trajectory to stone artefact production in the Asian and Pacific Islands. “Shell” is not a cohesive raw material category, with different molluscan families displaying very different microstructures, macrostructures and combinations of these. As such, different types of shell respond very differently to forces and taphonomic processes. This variation has not been well-studied, meaning that the identification and interpretation of shell-working can be complex and difficult. Unlike investigations into lithic technologies, there has been very little controlled experimental work with shell, resulting in a near-vacuum of solid methods for identification and analysis.

To properly understand the history and role of shell-working within ancient Asia-Pacific cultures, there is a need to go back to basics and understand the properties of the various raw materials. Engineering studies and experimental working form the basis of Kat Szabó’s current QEII research fellowship work, funded by the Australian Research Council. Not only does this project aim to understand early shell working in the Asia-Pacific, but also forms a template for the investigation and interpretation of shell artefacts at a methodological level.

| Abraded edge of a *Batissa violacea*, Liang Bua, Flores, Indonesia | Scored and cut piece of *Nautilus pompilius*, Liang Bua, Flores, Indonesia |

In this project, Kat is attempting to develop a framework for the identification and discussion of shell-working and unmodified shell use in Palaeolithic Southeast Asia. Drawing on elements of engineering and palaeontology, the fracture mechanics, taphonomic tendencies, and microscopic manifestations of 12 major tropical Indo-Pacific shell taxa – representing a variety of microstructural types – are being investigated. The results of this foundation research will then be applied to the analysis of shell material from a number of key Palaeolithic sites in the Southeast Asian region.
Brent Koppel (BScHons) completed his Honours project "Investigating the potential use of limpets as scrapers: a technological analysis" in 2010.

**Key publications**