

Pre-European Māori textiles from South Island New Zealand

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Background

Māori settled New Zealand in the early 14th century, in a planned migration from Eastern Polynesia. While most interpretation of pre-European Māori society has previously been based on the study of more robust material culture, early Māori perishable artefacts provide direct evidence of the importance of textiles and the plants that made them in prehistoric New Zealand society. This study firstly identified a corpus of prehistoric Māori textiles from South Island New Zealand and then applied systematic technical and analytical methods to their study.

Aim

To examine three assemblages of New Zealand pre-contact textiles, focusing on their physical attributes (colouration, structure, sett, materials of construction), and implications of these for i) consideration of the development of Māori textiles and ii) improving knowledge of pre-contact Māori technology and lifeways (Smith, 2014).

Methods

1. Survey

A survey of New Zealand museums was first undertaken and three textile assemblages with good provenance from South Island, New Zealand were selected for study; i) Fiordland textiles, c. 18th - early 19th century AD ii) Puketoi Station textiles (Central Otago) early 18th century AD and iii) Kaitorete Spit (Banks Peninsula) early 15th century AD (Figure 1).

2. Documentation

All artefacts (206) were systematically documented using photography, illustration and diagrams. A pro-forma was developed to record essential artefact attributes, using terminology based on structural characteristics of the textiles.

3. Analysis

Traditional methods of plant identification were trialled (microscopic identification; transverse sections prepared, staining of internal anatomical features, comparison with known, non-aged plant samples, as well as viewing of surface characteristics using Scanning Electron Microscopy (SEM) (Carr, Cruthers, Girvan and Scheele, 2009; Lowe and Smith, 2012). A new method of plant identification using micro-computed tomography, and comparison of samples from artefacts with measured, diagnostic features of New Zealand plants was also developed (Smith, Lowe, Blair, Carr and McNoughton, 2013; Figure 2).

All artefact attributes were measured (using ImageJ, a public domain, Java-based image analysis software package; Rasband, 2008) and statistical analysis (means, standard deviations (s.d.), coefficients of variation (%CV), cluster analysis) was used to interrogate the possible relationships among artefacts in the Kaitorete assemblage.



Figure 1. Map of find locations of artefacts.

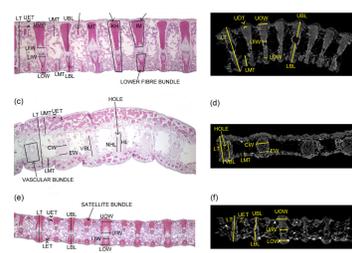


Figure 2. Measured diagnostic features of plants endemic to New Zealand (top - bottom; harakeke, New Zealand flax, *Phormium tenax*, J. R. Forst & G. Forst; ti kōuka, cabbage tree, *Cordyline australis*, (Forst.f.) Endl.; kiekie, *Frecinetia banksii* A.Cunn.). Micro CT images (right) compared with micrographs of transverse sections (left).



Figure 3. Woven artefact from Fiordland (Southland Museum and Art Gallery; B74.58).

Results

The textiles showed innovation and difference. There was diversity of structure (wovens; plain, twills with different orientations and patterns (Figures 3 and 4), weft-twining (Figure 5), knotting, braiding, folded yarns) and selvages (braids, twined, re-inserted into textile). Variation in production and structure implied difference, even when function of incomplete artefacts was difficult to discern. Textiles that were identifiable included cordage, containers and bags, mats or architectural elements, sandals and processed textile materials. When artefact function was unclear, selvages, textile structure and surface and decorative treatments were used to speculate about possible end-use, based on post-contact examples and ethnographic studies of Māori textile production. Based on these criteria, the Kaitorete assemblage may provide evidence of the earliest extant Māori clothing (weft-twined, tagged fragments could be derived from a cloak(s); Figure 6, woven artefact may be short upper body garment such as a mai, pokeka or para, or a lower body garment such as a maro; Figure 7). Additionally, divergence from previously-noted customary textile forms (based on post-contact artefacts) could be discerned. Noteworthy also was that the earliest textiles studied (Kaitorete Spit; c.1400 AD), were among the most complex (structure, sett, surface treatment) and were more complex than textiles previously thought earlier in the sequence. Developmental models previously articulated (Buck, 1925; 1938; Simmons, 1969) therefore did not adequately account for Māori textiles production, also calling into question the veracity of evolutionary progress as a model for culture change in New Zealand (Jacomb et al, 2004). In light of the short chronology of prehistoric New Zealand, and the environmental heterogeneity in the South Island, a concomitant diversity in cultural response to specific conditions (animal, plant, temperature, levels of population, interrelationships) is discernable in the textile assemblages studied (Smith, 2014).

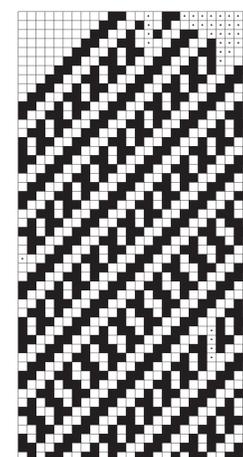


Figure 4. Detail of weave structure (Southland Museum and Art Gallery; B74.58).



Figure 5. Example of weft-twining, Kaitorete Spit excavation (Canterbury Museum, Christchurch, New Zealand).

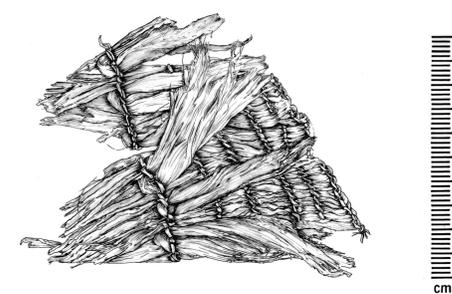


Figure 6. Weft-twined textile fragment with surface decoration of tags, Kaitorete Spit excavation (Canterbury Museum, Christchurch, New Zealand, Illustrator Judith Street).



Figure 7. Woven artefact, Kaitorete Spit excavation (Canterbury Museum, Christchurch, New Zealand, Illustrator Judith Street).

Implications

The pre-European Māori textiles studied amply illustrated weaving expertise, and significant antecedent craft specialisation in producing textiles from plants endemic to New Zealand. Indeed the study of three assemblages of early Māori perishables provided palpable evidence of the centrality of textiles in pre-European New Zealand, not only for clothing and portage, but also for procurement and storage of food. In addition to the importance of textiles for survival in pre-European Māori subsistence strategies, it is also postulated that textile production, trade and exchange were likely a defining aspect of social reproduction, essential for successful adaptation to New Zealand.

Key words: New Zealand, pre-European Māori textiles, dress, material culture, classification.

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