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ABSTRACTS FROM THESES AND DISSERTATIONS, UNIVERSITY OF OTAGO, 2000–2003

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In the last two instalments of abstracts from Otago (Smith and Tucker 2001, 2003) several items completed between 2000 and 2002 were omitted. These are included here along with abstracts from theses and dissertations in topics related to archaeology and biological anthropology completed in 2003. Included are seven PhD, two MA and three MSc theses, along with five BA (Hons) and two PGDipArts dissertations. The theses submitted in Anthropology are held in both the University of Otago Central Library and the Anthropology Department Library, while the dissertations are held only in the latter. Theses in Anatomy & Structural Biology are held in the University of Otago Medical Library and the Anatomy & Structural Biology Department Library, while those in Biochemistry and Botany are held in the University of Otago Science Library and libraries of the departments concerned. Requests to consult any of these items should be directed towards the library concerned.

Beu, Katerina 2003. The Physical Characteristics of Islands as Major Factors Influencing Anthropogenic Environmental Change in East Polynesian Prehistory: A Comparison Between Hawai'i, Easter Island and New Zealand. BA (Hons) dissertation, Anthropology Department, University of Otago. 67 pp, 5 figures, 2 tables.

The colonisation of the Pacific by prehistoric peoples led to significant anthropogenic environmental change on every island that was inhabited by humans. People affected their environments differently in Hawai'i, Easter Island and New Zealand. This was mainly a result of the differences between the environmental constraints experienced in the three island groups. These constraints were determined to a large degree by the locations, sizes and geological types of the islands, a model that can be applied to the whole of East Polynesia.

Buckley, Hallie 2001. Health and Disease in the Prehistoric Pacific Islands.

PhD thesis, Department of Anatomy and Structural Biology, University of Otago. 378 pp, 102 figures, 106 tables, 1 appendix.

The main impetus of this research was to assess the role of infectious disease, particular malaria, on the success of human settlement in the prehistoric Pacific Islands. A significant difference in the disease environments of the Pacific Islands is the presence of malaria in most of Melanesia and its absence in Polynesia. This research is the first attempt to assess the impact of malaria on the health of prehistoric Pacific Islanders.

The materials used were two samples of human skeletal remains from different regions of the Pacific Islands; one from Taumako, an island in the malarial zone of the Solomon Islands, Melanesia, and one from Tongatapu, the Kingdom of Tonga, Polynesia where malaria has always been absent.

The objectives of this research were to record several different parameters of health and disease in these samples. Firstly, the demographic profile of each population was compiled to test whether the mortality rates of the Taumako people may have been affected by the presence of malaria. Secondly, non-specific indicators of growth disruption in dental material were recorded to assess whether levels of childhood stress were greater at Taumako. The stature of adults was also compared to between Taumako and Tonga as a measure of the individual ability to achieve a genetic potential for growth. Finally, the skeletal indicators of iron-deficiency anaemia and infectious disease were recorded to test whether the prevalence of disease differed and whether these differences may be attributed to malaria.

The results of the analyses of these parameters of health and disease showed significantly higher prevalences of prenatal and childhood growth disturbance at Taumako compared to Tonga. The stature of adults was similar between the two regions but the range of heights was greater at Taumako. Similarly, a higher prevalence and more severe expression of iron-deficiency anaemia and significantly more proliferative skeletal lesions were found at Taumako. However, a significantly greater number of subadults were affected with postcranial proliferative lesions at Tonga than Taumako, although, the affected children were older at Tonga. The mortality rates of the two populations were similar, although males were more vulnerable to early death than females at Taumako.

A differential diagnosis proposed that endemic yaws was the most likely infectious disease causing the skeletal lesions at Taumako; while at Tonga a more non-specific pattern of disease was proposed. The possibility of multiple causes for the skeletal lesions was also proposed for some individuals at both sites.

The discussion of the results found they were consistent with the premise that the presence of malaria in Melanesia may have caused chronic growth disturbance and exacerbated the expression of anaemia and infectious disease in prehistory. However, it is also argued that differences in diet may have had an equally strong role in the observed patterns of health and disease.

In conclusion, the results of this research did not unequivocally demonstrate the role of malaria on the health of prehistoric populations. However, this study is an initial step in the investigation of the impact of malaria on human populations, while not excluding other factors such as diet.

Chang, Nigel 2001. Personal Ornaments in Thai Prehistory: Nong Nor, Ban Lum Khao and Noen U-Loke. PhD thesis, Anthropology Department, University of Otago. 307 pp, 70 figures, 69 tables.

Personal ornaments – jewellery and other items of decoration worn on the body – are common grave goods in prehistoric Thailand. Grave goods are important and accessible aspects of mortuary ritual and mortuary ritual has proven an attractive means by which to interpret prehistoric social organisation. Yet little research has been devoted to the study of personal ornaments.

This dissertation has two main aims. First, it begins to redress this omission by considering what information is available from personal ornaments and by developing a methodological framework for research. An holistic approach is adopted with the emphasis on acknowledging the wide variety of classes, styles and materials involved. This theoretical background is followed by three site assemblage analyses; Nong Nor, Central Thailand (cemetery: c.1100-700 BC), Ban Lum Chao, lower Northeast Thailand (cemetery: c. 1000-500 BC) and Noen U-Loke, lower Northeast Thailand (cemetery: c. 300 BC-AD 600). The personal ornament assemblage from each site is described, followed by a discussion of its implications in terms of developing technologies, exchange patterns and inter-site relationships.

In general, the typological scheme adapted and developed here is shown to be useful across Neolithic, Complex Hunter-Gatherer, and Bronze Age sites in Thailand. However, the Bronze Age brings a new level of variety in *bronze* that will require new approaches to its typology and more focused studies of individual artefacts are required in order to advance our knowledge.

The second major aim of this dissertation was to apply the personal ornament data to understanding social organisation at each of the sites, between the different regions and over time. Assessments of social organisation were based on the distribution of personal ornaments within the cemeteries, com-

bined with other data. In Chapter 8 the discussion was broadened to include other sites and information. Models of change in Central Thailand and the upper Mun Valley of lower Northeast Thailand, and a model of the changing exchange patterns underlying the social developments, were constructed.

It is argued that, as has been suggested before, sites such as Khok Phanom Di do represent autochthonous populations, with their own personal ornament traditions surviving in the face of a major *bifurcative* expansion of agriculturalists, ultimately out of the Yangzi Valley. By the Bronze Age, features of both these cultures can be seen in the metal-using communities. However, while there is no longer a distinction between local and incursive populations, regional traditions became more important. At the same time I argue that ethnic and cultural echoes of the original agricultural expansion created a network that allowed the rapid transmission of the idea of metal-working. The distribution of the T-sectioned bangles represents this network.

Turning to Noen U-Loke I argue that an important feature of the upper Mun Valley is its isolation from major centres and routes of trade. By the Late Iron Age (AD 1-500) India and China were linked by a 'world trading system', prompting increased social complexity in the Mekong River Delta, a nodal point in this trade. However, while at Noen U-Loke new materials and some artefacts indicate exchange with these new polities, the personal ornaments more clearly reflect a flourishing and independent local tradition. At the same time I argue that Noen U-Loke was not part of a chiefdom, but rather a complex big-man society. If these characteristics were the result of isolation we may look to communities like Ban Kan Luang, located downstream at the confluence of the Mun and Chi rivers, for the reason behind that isolation. I contend that these societies not only controlled trade but also conducted their relations in such a way as to retain their powerful position as 'middlemen'.

Such hypotheses are, of course, not without important caveats and the final chapter stresses the need for further research, outlining several specific areas of concern, in order to reach more secure conclusions.

Chiles, Leanne 2002. Occupation at Khok Phanom Di: Skeletal Evidence for Patterns of Habitual Activity Within A Prehistoric Thai Site. MSc thesis, Department of Anatomy and Structural Biology, University of Otago. 173 pp, 40 figures, 38 tables, 4 appendices.

Enthesial variation between individuals has been hypothesised to show activity patterns within the archaeological record. Similarly, differences in the levels of bilateral asymmetry between individuals may also show differences in the patterns of activity between individuals or groups. Little research has been done within the Southeast Asian archaeological record to

show contrasts in activity patterns between groups. The present study was undertaken to examine these types of changes in activity patterns within one such archaeological population.

For this study, 65 individuals were examined from the 4000 B.P. pre-historic site of Khok Phanom Di in Central Thailand. The site chosen shows evidence for a change of environment during the occupation, which, it was hypothesised, would have led to a change in the subsistence strategies and economic activities and thus to a change in the habitual activities of the inhabitants. The strength of enthesial development for 44 muscle attachment sites was recorded for each individual. Eighteen paired measurements for each individual were also recorded where possible and standardised to examine bilateral asymmetry within the sample. The data recorded was used to examine patterns of activity between the young and old and the sexes as well as changes over time.

Differences in the activities and activity levels were found between the earlier and later individuals of Khok Phanom Di as well as between the males and females from the site. These differences show that there was a change in the activities of the inhabitants over the period of occupation leading to an increase in the overall amount and type of physical activity over time which correlated with the environmental change, as well as a division of labour between the sexes. There were no differences found, however, between the younger and older inhabitants which indicates that the people of Khok Phanom Di were performing the same habitual activities throughout their lives.

Cox, Murray 2003. Genetic Patterning at Austronesian Contact Zones. PhD thesis, Biochemistry Department, University of Otago. 277 pages.

The advance of Neolithic culture was a defining process in human history. Chronicled by the distribution of Austronesian languages, one such expansion of Neolithic peoples swept through the Indo-Pacific region just 4,000 years ago. A record of this dispersal is carried in the genes of modern people. Yet human populations have a much older history in the region, and their genetic legacies also persist to modern times. Examination of the genetic patterns that resulted from contact between these Austronesian and non-Austronesian peoples forms the central focus of this thesis. Research was directed towards three geographical regions in which Austronesian languages are still spoken today: the island nations of Indonesia, Madagascar, and Vanuatu. Inherited genetic characters were examined from nearly six hundred individuals, and analysis focused on two genetic systems. Firstly, mitochondrial DNA, which is inherited through the maternal line; and secondly, the Y chromosome, which is inherited through the paternal line. Disengaging the

genetic lineages of men and women allowed exploration of possible sex-specific structuring in the contact process. An examination of spatial patterning, and the application of novel genetic techniques for dating human population expansions, gave additional facets to the study. Four thousand years of human mobility have blurred prehistoric patterns in the genetic variation displayed by modern populations. No spatial or sex-specific patterning was detected. Yet it can be inferred that less than a fifth part of the modern populace carry genetic markers once diagnostic of the dispersing Austronesian speakers. It seems that non-Austronesian populations have contributed significantly to modern populations. Genetic analysis suggests that, at least in Vanuatu, adoption of a Neolithic economy triggered a period of population growth for non-Austronesian peoples. This was contemporary with the arrival of the first Austronesians. Thus, the spread of Neolithic society seems to have been driven in part by biological dispersal, and in part by cultural diffusion. The genetic data best fit a model of leapfrogging, whereby Austronesian populations crossed the Indo-Pacific region in bounds, each of which subsequently formed a staging ground for cultural diffusion. Although not reflected so clearly in the archaeological and linguistic records, non-Austronesian peoples were active players in the emerging Neolithic world. They encountered the dispersal of the Austronesians, adapted culturally to their changing situation, and biologically, they kept on going.

Crowther, Alison 2001. Pots, Plants and Pacific Prehistory: Residue Analysis of Plain Lapita Pottery from Anir, New Ireland, c. 3300 B.P. BA (Hons) dissertation, Anthropology Department, University of Otago. 93 pp, 25 figures, 6 tables.

Identification of plant-processing in Pacific prehistory is problematic because direct evidence in the form of macrobotanical remains is rare, particularly for roots and tubers. Hypotheses for the exploitation of roots and tubers by Lapita peoples have been formulated on the basis of comparative ethnography and historical linguistics. Indirect evidence has come from putative plant-processing artefacts, domestic animal remains (arguably associated with a horticultural production system), land-use patterns and other evidence in the archaeological record.

An exploratory analysis of residues on undecorated potsherds from the Early Lapita site, Kamgot, New Ireland, dating to *c.* 3300 BP, was undertaken to test the hypothesis that Lapita people used root and tuber crops. The result of the analysis indicates that abundant levels of starch grains and raphides were present on these artefacts, and a large quantity of raphides was also

present in the sediment. These residues were identified as taro (*Colocasia esculenta*).

This represents the first direct evidence obtained from anywhere that *Colocasia esculenta* was processed by Lapita peoples, and has thus made an important contribution to archaeological understanding of early plant processing in the Pacific. It is also the first study of surface residues on Lapita pottery to ascertain their actual use. This research demonstrates that the analysis of cooking residues on pottery is an alternative to traditional archaeobotanical recovery methods in the Pacific.

Domett, Kathryn 2000. Health in Late Prehistoric Thailand. PhD thesis, Department of Anatomy and Structural Biology, University of Otago. 350 pp, 50 figures, 98 tables, 5 appendices.

The aim of this research was to provide a synthesis of the variations in health among prehistoric Thai communities, and to show that the health of these people was differentially affected by both their natural and cultural environment. Four skeletal samples comprising a total of 500 skeletons provided the material for this research. There were two coastal southeastern skeletal samples, Khok Phanom Di (2000-1500 BC, early agriculture) and Nong Nor (1100-700 BC, Bronze Age) and two inland northeastern samples, Ban Lum Khao (1400 BC, Bronze Age) and Ban Na Di (600-400 BC, Iron Age). It was hypothesised that the health profile of samples from within the same natural environment would be similar and, conversely, that the health status of the northeast would be in contrast to the southeast. Additionally, it was hypothesised that changes in the cultural environment through time, including the intensification of rice agriculture, would see an improvement in general health.

Health, morbidity, and mortality were investigated through the analysis of a selection of parameters that included measures of mortality, growth and its disturbances, joint disease, trauma, and dental health. This selection, although not exhaustive, enabled a *representation* of the health status of the four samples to be obtained and compared. Using a biocultural approach this information has been integrated with archaeological and ethnographic evidence for nutrition, pathogen load, and culture, to determine the effect each natural and cultural environment had on community health.

Within the southeast region there were marked differences between the health profiles of the Khok Phanom Di and Nong Nor samples. Nong Nor had lower subadult mortality, taller adult statures and lower prevalences of dental pathologies. However, skeletal preservation was poor at Nong Nor and not all parameters were able to be observed. Within the northeastern samples health profiles were similar in overall prevalences of joint disease and dental health,

but childhood morbidity and mortality were different. The latter, measured through observations of infant mortality, enamel hypoplasia and adult stature, were higher at Ban Lum Khao than at Ban Na Di. The natural environment had a significant influence on the health status of the people studied but not in the manner hypothesised. Comparisons within and between regions were complicated by time differences that may have affected the people's ability to cope with their environment. The comparatively poorer health suffered by the Khok Phanom Di and Ban Lum Khao communities may have been related to their settlement and adjustment to potentially new environments. In contrast, it is likely that both the Nong Nor and Ban Na Di communities were familiar with their natural environments as they were not the first settlers in their respective regions.

With respect to the cultural hypothesis, results indicated that a general improvement in health had occurred through the time periods studied. The earliest sample, the people of Khok Phanom Di, were the least healthy. They had comparatively high prevalences of dental pathologies and joint disease, and high subadult mortality and morbidity, the latter reducing the attained adult stature. Health improved into the Bronze Age, particularly so in the Nong Nor sample, the people of which had low subadult mortality and tall statures compared with the Ban Lum Khao sample. However, poor preservation of the Nong Nor skeletal material places a caveat over any interpretation. The people of the early Iron Age at Ban Na Di continued the trend for improving health. They had moderate subadult mortality and morbidity, although as they reached tall statures these had limited effects. In addition, dental health improved and osteoarthritis decreased with time. Post-Iron Age, Thai people underwent an expansion of society led by the establishment of the centralised political regime of the Angkorian civilisation. From this selective view of skeletal health it appears the people were healthy enough to withstand the effects of such a transition. Further integration with other prehistoric Southeast Asian skeletal samples is now required to support this statement.

Gilmore, Helen 2003. Southeast Asia, Maritime Trade and State Development: A Braudelian Perspective. BA (Hons) dissertation, Anthropology Department, University of Otago. 71 pp, 6 figures.

This study sets out to investigate the relationship between the participation of Southeast Asia in the trade of the maritime silk route in the first millennium AD and the state development in the region. In this period there was significant intensification of international maritime trade, and the archaeological record shows a corresponding major cultural change in the Mekong Delta region, and evidence of the emergence of trade-oriented polities. The

aim of this research has been to consider the continuity between the long-established exchange patterns of prehistory and those of the early historic era, and the contribution of long-term environmental variables and evolving social structures to the eventual emergence of the states of Southeast Asia.

In order to do so, I have drawn upon the work of Fernand Braudel, an historian of the French *Annales* school of historiography, whose model of time for the analysis of history consists of three temporal scales, the interaction and dynamics of which form the background to historical changes and events. It was Braudel's contention that the history of short-term events could be better understood by incorporating elements of the medium and long-term into the analysis when addressing an historical question. The Braudelian time scales offer a method for organising archaeological evidence in a comprehensive way, providing deeper levels of explanation when addressing complex questions about past societies, and uniting processual and post-processual approaches to the data.

I begin by considering the long-term features of the environment, climate and resources, the constraints they imposed and the opportunities they afforded for exchange-related activities. Secondly, I proceed to consider the social and economic structures which developed within the environmental framework, showing the extent to which developing social complexity coincided with increasing levels of exchange interaction, and the extent to which the state formation of the first century was built on the foundations of trade and society in prehistory. The third part of the model considers the contribution of external events, ideas and political forces to the functioning of the maritime silk route and the development of the Southeast Asian state.

Archaeological, textual, epigraphic and iconographic data are ordered and examined within the context of a Braudelian perspective in order to produce a synthesis of the continuity of Southeast Asian trade, the influences that shaped it, its implications for social change, and how this culminated in participation in international maritime trade and contributed to state development.

Harris, Jaden 2003. Direct Human Predation and Avifaunal Extinctions in the Pacific. PGDipArts dissertation, Anthropology Department, University of Otago. 72 pp, 8 maps.

The colonisation of the Pacific Islands resulted in a mass extinction of birds. Records of extinct birds are especially rich from Eastern Polynesia and New Zealand. Human predation has been implicated in causing many of these extinctions since it was proved that they post-dated the arrival of man. Many early archaeological contexts show that native bird populations were heavily exploited. Many species were also affected by habitat loss and the impact

of the Polynesian rat and other predators. While there is some evidence that human predation played a significant role in the decline of some species, for others the process of extinction is still unknown. In all cases every line of evidence has to be considered before an evaluation of the relative contribution of factors causing extinction can be attempted.

Molloy, Nicola 2003. *The Material Culture of Ban Bon Noen*. MA thesis, Anthropology Department, University of Otago. 122 pp, 32 figures, 5 tables, 1 appendix.

This thesis examines the material culture from the six occupational layers at Ban Bon Noen, Central Thailand. Through the analysis of the ceramic, lithic and metallurgical assemblages, the range of subsistence activities at Ban Bon Noen are determined and the site is placed in a broad regional context.

Ban Bon Noen reveals two major phases of occupation. The first phase may date from as early as 1500 BC. In the later stage, Ban Bon Noen is incorporated into the Dvaravati polity, becoming one of several rural hinterland sites providing support to elites at the ceremonial centre of Muang Phra Rot. The archaeological evidence indicates that the residents of Ban Bon Noen exploited a range of terrestrial and marine resources. The site is furthermore seen to conform to a broad regional pattern, both in the location of the site as well as the technology of the inhabitants. Comparative analysis of a number of Southeast Asian sites, including Khok Phanom Di, Nong Nor, Chansen and Oc Eo, indicate cultural continuity in the region, underscored by a well-developed network of exchange.

Muth, Srey 2003. *Health and Wealth: An Investigation of Social Status and Biological Status at the Iron Age Settlement of Noen U-Loke*. BA (Hons) dissertation, Anthropology Department, University of Otago. 175 pp, 29 figures, 32 tables, 7 appendices.

This study investigates the relationship between biological status, and social status at the Iron Age settlement of Noen U-Loke in Northeast Thailand. The skeletal indicators used to estimate health are mortality, stature, enamel hypoplasia and caries. Social status was estimated from the quantity and quality of grave goods.

The relationship between health and wealth at Noen U-Loke was measured statistically, using Chi and Fisher's Exact significance tests. Average wealth was also compared between the categories of each skeletal health indicator. The results indicate that Noen U-Loke was a hierarchical society, with a small number of extremely rich people who owned most of the wealth.

Mortality was the only skeletal health indicator that has a significant relationship with wealth. There was no significant relationship between wealth and stature, enamel hypoplasia, or caries. The oldest individuals were the richest in this sample, and the wealth distribution between the ages indicates that social status at Noen U-Loke was achieved, that is, the wealth of an individual was acquired through one's actions, characterises and work during one's life. This is comparable with the health of the sample, which showed that old individuals were healthier than the younger individuals.

A multi factorial approach indicate that males in this sample were not as healthy as females, despite being richer than females. It is possible that female biological buffering to environmental stress may have outweighed the possible consequences of social status differentiation in the social environment. It was concluded that there is a complex relationship between social status and biological status, at Noen U-Loke, and this relationship should only be interpreted as one of a 'nuance' or subtle difference.

Nash, Lance 2001. The Relationship Between Acromial Morphology and Subacromial Lesions in Two Prehistoric Populations. MSc thesis, Department of Anatomy and Structural Biology, University of Otago. 94 pp, 35 figures, 14 tables, 10 appendices.

Current understanding regarding the mechanisms responsible for subacromial lesion formation and what it signifies differs between paleopathologists and clinicians. Both fields agree that altered mechanics of the gleno-humeral joint can lead to the development of Subacromial Impingement Syndromes and eventual subacromial lesion formation. One difference between the two fields is that clinicians state that scapular morphology is an important factor but this does not appear to be considered in the paleopathological literature. This study was undertaken to determine whether the presence of a particular 'morphological package' was associated with the presence of a subacromial lesion.

Sixty-two adult human scapulae were selected from 323 skeletons in a Proto-Prehistoric New Zealand Polynesian (NZP) Collection dated from AD 400 to 1800's, and 154 skeletons from a Neolithic Thai Khok Phanom Di (KPD) Collection dated 2000-1500 BC. Subacromial lesions were identified by differential acromial thickness followed by visual confirmation. Lesion thickness was then analysed with five variables including: percentage grading of surface degeneration, acromial margin shape, coracoacromial outlet shape, slope of the acromion and spine of the scapula.

Eleven subacromial lesions were found in 6 individuals aged from 18 to 45 years. Five individuals had bilateral lesions (1 NZP male, 2 KPD males

and females) and 1 KPD female had a unilateral right lesion. No significant differences were found between mean levels of pathological surface degeneration in lesioned and non-lesioned acromia. Only scapulae that presented with subacromial lesions had Bigliani/Morrison type III 'hooked' acromia. The coracoacromial (CA) outlet formed a narrow triangular shape in 91% (10/11) of lesioned cases. Results of the mean slope of the acromion and the spine of the scapula were significantly ($p < 0.01$) flatter and steeper respectively for lesioned scapulae.

The findings of this study suggest that lesioned scapulae have a particular type of morphology that is unique, and therefore support the clinical view that a specific morphology is associated with the presence of a subacromial lesion.

Samson, Jim 2003. Cultures of Collecting: Maori Curio Collecting in Murihiku, 1865-1975. PhD thesis, Anthropology Department, University of Otago. 383 pp, 15 figures, 40 tables.

The ambivalence of many prehistorians toward curio collections has meant that although they recognize some of their shortcomings, they nevertheless use collections as if they had qualities of archaeological assemblages. In this dissertation it is posited and then demonstrated that curio collections are very different entities to archaeological assemblages. In order to use collections in valid constructions of New Zealand's pre-European past, the processes that led to their formation need to be understood. It is only then that issues of representation can be addressed.

In order to better understand the collecting process, a study of the activity of 24 curio collectors who operated in the Murihiku region of southern New Zealand during the period between 1865 and 1975 was undertaken. The study was structured about two key notions: the idea of the 'filter' and the idea that tools and ornaments have a 'life history' that extends from the time raw material was selected for manufacture to the present. The notion of the filter made possible a determination of the effects of particular behaviours on patterns of collector selectivity and the extent and nature of provenance recording; and the extended concept of life history recognised that material culture functions in multiple cultural and chronological contexts - within both indigenous and post-contact spheres.

Examination of the collecting process led to the identification of five curio collecting paradigms: curio collecting for the acquisition of social status, curio collecting for financial return, curio collecting as an adjunct to natural history collecting, curio collecting as an adjunct to historical recording, and ethnological or culture-area curio collecting. Filtering processes associated

with each paradigm resulted in particular, but not always distinctive, patterns of curio selectivity and styles of provenance recording.

A switch in the focus of attention from examination of curio collecting processes generally to the study of the filtering processes that shaped collections from a specific archaeological site - the pre-European Otago Peninsula site of Little Papanui (J44/1) - enabled some evaluation of individual collection representation. A database recording up to 19 attributes for each of 6282 curios localized to 'Little Papanui' in Otago Museum enabled 31 dedicated or 'ardent' collectors who operated at the site to be identified. These 31 dedicated collectors were grouped according to the paradigm that best described their collecting behaviour. It was found that the greater proportion of these dedicated collectors (n=12, 39%) had been influenced by the ethnological or culture-area collecting paradigm. These 12 collectors were responsible for recovering a remarkable 5645 curios or nearly ninety-percent (89.86%) of the meta-collection.

Because curio collections lack meaningfully recorded stratigraphic provenance, it is the technological and social context in which tools and ornaments functioned that must become the focus of curio collection studies. Appropriate studies of technological and social and context focus upon evaluations of raw material sourcing, evaluations of manufacture technique and assessments of tool and ornament use and reuse (and integrative combinations of these modes of study). These sorts of evaluation require large collections compiled in the least selective manner possible and the collections need to be reliably localized to specific sites. Collections compiled by the ethnological or culture-area collectors have these qualities. Collections compiled within other paradigms lack reliable locality information and were assembled in highly selective manners.

Sharpe, Kiri 2002. Information Loss and Rescue Archaeology in Coastal Otago, New Zealand. BA (Hons) dissertation, Anthropology Department, University of Otago. 61 pp, 13 figures, 2 tables.

This dissertation examines loss of information from archaeological sites, a common problem experienced in sites all around the globe. This research essay is case study oriented, focusing on coastal and estuarine prehistoric Maori sites in Otago, New Zealand. Two case studies are presented and analysed in detail; Purakaunui as an example of a high dune estuarine site, and Watson's Beach, an extensive low dune site complex behind an exposed coastal beach. This essay also looks at site values and the various threats that cause information loss in sites. Conservation techniques are also discussed with particular focus on rescue archaeology and the need for site monitoring.

Stiles, David 2003. Ethics and Contemporary Archaeology of Human Remains in the Pacific Region. PGDipArts dissertation, Anthropology Department, University of Otago. 60 pp, 4 figures.

The excavation and curation of human remains in an archaeological situation has become controversial over the last 40 years. This controversy has arisen because descendant communities have become more forceful and open in their questioning of archaeologists who they see as desecrating their burials and burial grounds. This research essay asks this question in relation to the ethics and practice of the recovery of human remains in the Pacific region, specifically South Island, New Zealand, Hawai'i and the Solomon Islands. Although the three areas display a variety of attitudes and practices because of social, political and legal differences, and the view of ethics relating to human remains is filtered through those differences, the ethical considerations are the same. The conclusion is that with clear consultation with descendant communities along with careful research design and non-invasive investigation techniques, can lead to a significant understanding of past ways and peoples.

Stowe, Chris 2003. The Ecology and Ethnobotany of Karaka (*Corynocarpus laevigatus*). MSc thesis, Botany Department, University of Otago. 133 pp, 21 figures, 11 tables, 7 plates, 1 appendix.

Historically there has been considerable debate over the origin of karaka (*Corynocarpus laevigatus* J.R. et G. Forst.) in New Zealand. In contrast, the extent and importance of prehistoric arboriculture in New Zealand has received little attention in the literature. This study reviews the ecology and ethnobotany of karaka and investigates its cultural and natural biogeography.

Maori migration traditions frequently state that karaka was introduced to New Zealand. However, molecular evidence and finds of fossil seeds of late Oligocene age show that karaka is endemic to New Zealand. Therefore, Maori traditions probably relate to the translocation and cultivation of karaka within the New Zealand region, for which there is abundant anecdotal evidence. Karaka fruits were a valuable addition to the Maori diet and were likely to have functioned as a replacement for traditional Polynesian tree crops. The preparation of karaka seeds also had Polynesian precedents and entailed a rigorous regime of steaming and soaking to rid the kernel of its toxic elements. There is data to suggest selection for fruit size and/or nutritional value in cultivated karaka populations.

A database of karaka distribution was compiled and populations classified as 'cultural' or 'unknown' on the basis of spatial association with archaeological sites. Groves classed as cultural were assumed to be cultivated

or translocated by prehistoric Maori. Lack of effective seed dispersal by birds and the longevity of the trees, mean that the contemporary distribution of karaka provides a reasonable template for the extent of its prehistoric translocation and cultivation within New Zealand.

Karaka has a distinct cultural and natural biogeography. The greatest overlap between cultural and unknown trees occurred in the northern North Island while the majority of trees in the lower North Island, and all trees in the South Island were classed as cultural. Prior to the arrival of Polynesians in New Zealand, karaka was probably restricted in distribution to the Northland/Auckland region. Its natural range was then extended by human translocation and cultivation to the lower North Island, South Island, Kermadec Islands, Chatham Islands and many other in-shore islands off New Zealand.

Climate variables were fitted to the distribution data and discriminant analysis used to further test the classification of karaka into cultural and unknown populations. Significant differences were found in climatic parameters between groups. Cultural karaka were found in environments with greater solar radiation seasonality, higher evaporative demands and greater soil moisture deficits than unknown karaka. The climate profile of karaka was closer to that of other tree species currently restricted to the northern North Island than with more widely distributed species. Furthermore, the climate profile and location of cultural karaka is biased towards the same environmental correlates of pa and pit site locations, further indicating that karaka was a cultivated tree crop.

The extensive translocation of karaka by Maori means that it has the potential, with the application of molecular methods, to serve as a marker for prehistoric settlement and mobility. Preliminary work has begun on this aspect and a predictive model is presented of the possible relationships within and between populations of karaka.

It is concluded that the importance and extent of karaka arboriculture, and probably that of other endemic tree species, has previously been overlooked. This has implications for our view of certain plant communities as unmodified by humans, and provides an impetus to protect surface vegetation as an integral part of some prehistoric archaeological sites.

Talbot, Sarah 2002. From the Iron Age to Angkor in Northeast Thailand. PhD thesis, Anthropology Department, University of Otago. 176 pp, 93 figures, 35 tables, 2 appendices.

The Southeast Asian polity of Angkor (802-1431 CE) was unprecedented in stability and scale, and left a rich artistic and architectural legacy in Cambodia, Laos and Thailand. Yet, its origins are little understood. While

the upper Mun River valley of Northeast Thailand was a critical part of the empire of Angkor, its significance has often been overlooked, and little is known of the region in the centuries immediately before Angkor. Two archaeological excavations provide new evidence about Iron Age (c. 500 BCE-500 CE) and Early Historic (c. 500-800 CE) communities in this region. Mortuary analysis of over 120 Iron Age burials from the moated site of Noen U-Loke – the largest such excavation to date – suggests a community under significant social stress, resulting in a dramatic intensification in mortuary ritual shortly before site abandonment. An excavation at an important Angkorian temple, the Prasat Hin Phimai, recovered Iron Age ceramics and the remains of a brick structure that had been re-used as temple foundations but which would seem to date to the eighth century. This archaeological evidence is considered in light of the region's early historical records, particularly those concerning an important indigenous matrilineally inherited male position *pon*, the replacement of which was critical to the development of Angkor. The story of the development of Angkor is one of increasingly centralised power, as, over the course of generations, heterarchical strictures on greater hierarchy were gradually overcome. This process can be traced back to late prehistory.

Thomas, Tim 2003. Things of Roviana: Material Culture, Personhood and Agency in Nineteenth Century Solomon Islands. PhD thesis, Anthropology Department, University of Otago. 380 pp, 89 figures, 9 tables, 9 maps.

The following research examines how material culture was used to negotiate social relationships through exchange, in nineteenth century Roviana lagoon, Solomon Islands. Recent debates in Melanesian anthropology have focused on the commensurability of Western and non-Western understandings of exchange, and the applicability of various theoretical models (such as gift or commodity systems) to the context of colonial and post-colonial encounters. At issue has been the degree to which differences in cultural theories about persons, things and relationships can be said to have coloured interactions between Melanesians and Europeans. The present work articulates with these debates by providing a case study that delineates how Roviana people conceptualised material culture and its exchange, and how this gradually became enmeshed with European activity and modes of understanding. The methodology adopted provides access to the past through archaeology, history and ethnography, allowing a richer account of nineteenth century Roviana sociality than has been previously possible.

Roviana was once the centre of a network of regional interaction involving ritual violence and trade, in a landscape that drew the interest of Europe's industrial powers. This dissertation begins by detailing the long-

term development of this centre, describing the cultural landscape and categories of social persons recognised during the nineteenth century. The material culture of the period is then analysed utilising a rich archaeological assemblage deriving from abandoned village architecture, and museum collections. The 'style' of Roviana material culture is delineated and an argument is developed, postulating that it was conceived in terms of agency – things were perceived as being intimately intertwined with the ability of persons to have an effect on the world and to achieve specific ends. The Roviana style was less about signifying identity or conveying communicative meaning, than a means of addressing particular ontological concerns about personal coherence and efficacy.

This argument is then brought to bear on an analysis of the use of material culture in specific forms of exchange. It is proposed that the practice of 'keeping' exchange media served to replicate or reproduce social relations, whilst 'giving' exchange media tended to expand social relations. In opposition, the use of certain artefacts in enacting ritual violence served to sever relationships. During the initial stages of European activity in the region, these categories of exchange dictated the form of encounters. The use of exchange to replicate, expand or sever relations is argued to have been conducted according to a theory of action in which personhood was conceived of as relational, or 'fractal' – replication, expansion and severance enabled people to act effectively in a relational world.

Finally, an analytical parallel is drawn between the ritual breakage of material culture by Roviana people and the practice of material culture collecting by European visitors, as a means of contrasting differences and similarities in the use of material things for personal ends. This leads to the conclusion that the agency of people and things is always intertwined, in a way that is fundamental to human experience. No matter what the evident differences in conceptualisation between cultural groups, these are structurally comparable as permutations of the common ontological basis of human-thing interaction.

Wylie, Joanna 2003. *Negotiating the Landscape: A Comparative Investigation of Wayfinding, Mapmaking and Territoriality in Selected Hunter-Gatherer Societies*. MA thesis, Anthropology Department, University of Otago. 243pp, 79 figures, 4 tables, 7 appendices.

As human beings we are continually interacting with the landscape, and have been doing so throughout the entire course of our evolution. This thesis specifically investigates the way in which hunter-gatherers negotiate and interact with their landscapes, focusing on three patterns of behaviour:

wayfinding, mapmaking and territoriality. An examination of the relevant international literature reveals that globally, hunter-gatherer groups both past and present share a number of similarities with regard to their wayfinding and mapmaking techniques, and territorial behaviour. A case study of Maori interaction with the landscape of prehistoric and protohistoric Te Wai Pounamu [the South Island] provides further support for the central argument that hunter-gatherers collectively negotiate and interact with the landscape in distinctive ways. This contrasted with the interaction of European explorers and travellers with the 19th century landscape of Te Wai Pounamu in Chapter 5.

It is determined that hunter-gatherers use detailed cognitive or ‘mental’ maps to navigate their way through a range of landscapes from dense forests to barren plains. These maps often consist of sequences of place names that represent trails. These cognitive maps are most commonly developed through direct interaction with the landscape, but can also be formed vicariously through ephemeral maps drawn with the purpose of communicating geographical knowledge. Prior to European contact, little importance seems to have been given to artefactual or ‘permanent’ maps within hunter-gatherer societies as the process of mapmaking was generally regarded as more significant than the actual product.

Although the literature on hunter-gatherer territoriality is complex and in some cases conflicting, it is contended that among a number of hunter-gatherer groups, including prehistoric and protohistoric Maori in Te Wai Pounamu, interaction and negotiation with the landscape was/is not restricted to exclusive territories marked by rigidly defined boundaries. Among these groups, a specific method of territoriality known as ‘social boundary defence’ was/is employed. This involves controlling access to the social group inhabiting an area rather than access to the area itself, as with groups utilising the territorial method of ‘perimeter defence’.

References

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