Archaeology Completed PhD Theses

2020

Radclyffe, Charles (2020) Prehistoric Settlement and networks of interaction in the Western Solomon Islands: A survey of Manning Strait.

This thesis is an investigation into the prehistory of the western Solomon Islands and an examination of archaeological sites located in and around a deep-sea passage between Choiseul and Santa Isabel known as Manning Strait. Archaeological surveying has been carried out in this part of Solomon Islands since the 1960s, however, Choiseul, Manning Strait and large parts of Santa Isabel have received little attention. An important aim of this study was to address this and, ultimately, contribute towards constructing a more complete and comprehensive archaeological sequence for Solomon Islands.

Three fundamental aspects of the culture history of the western Solomon Islands are examined. The first is the prehistoric settlement of the region during the late Lapita period (ca. 2700-2000 BP) and evidence of how mobility patterns changed over time. The second is the development of prehistoric trade and exchange networks from initial settlement leading into late prehistory. This period, specifically the last millennium, was a pivotal time in western Solomon Islands which saw major cultural developments such as the emergence of head-hunting, monumental architecture, specialised production and exchanging of shell valuables and increasing contact with Europeans. The third is processes by which cultures in the region changed and diversified over the last two and a half millennia. This traditional culture historical approach is partnered with theoretical outlooks that have developed in more recent years in island archaeology whereby islands are perceived not as singular entities but as part of a broader 'sea of islands' or 'seascapes'. Manning Strait is perceived in this manner not simply as a setting but as an active agent in influencing the course of cultural transformation in the western Solomon Islands.

The methodological approach taken in this study draws upon archaeological survey and excavation, laboratory analysis of ceramics, lithics, shell artefacts and faunal remains, and a systematic review of ethnographic and historical literature. Significant outcomes of the fieldwork that are presented include the discovery of a 2.5 m deep cave deposit on Wagina, southeast Choiseul, dating to 2300-2150 calBP, a late Lapita intertidal site in northwest Santa Isabel, and ceramic deposits on the Arnavon Islands and Laena Island dating to between 850-150 calBP. A wide range of artefacts are analysed in this study, although emphasis is placed on exploring production and distribution patterns of pottery to gain insight into the development of both local and regional patterns of inter-island interaction. At the end of the thesis, a ceramic sequence is put

forward for Choiseul as well as a revised cultural sequence for the wider western Solomon Islands that builds upon earlier archaeological modelling and findings. Additionally, the dynamic role Manning Strait played in prehistory as an ocean highway in the late Lapita period and altering to becoming a highly contested seascape in late prehistory is discussed.

2017

Greig, Karen Lee (2017) Tracking dogs across the Pacific: an archaeological and ancient DNA study.

The dispersal of dogs across the Pacific region is inseparably linked to the relationships between dogs and people. Unlike movement across continental landmasses, dogs must have been transported by people across the waters that separate islands. The purpose of this PhD research is to investigate the introduction and dispersal of dogs throughout the Pacific. The approach uses dog remains from archaeological sites to generate ancient mitochondrial genomes using next generation sequencing technology. This molecular data is interpreted in relation to regional archaeological models for human and animal movements and human-dog interactions. In order to understand as fully as possible what the nature of the dog-human relationship may have been like, ecological, ethnographic and historical information about dog populations and their interactions with people in the region are also considered. The outcomes of the ancient DNA analyses of dog specimens from colonisation era archaeological sites in New Zealand demonstrates the impact that the interactions between people and dogs can have on mitochondrial molecular diversity, and hence the usefulness of studies using only maternal markers. The results, nonetheless, are informative about the Pacific dogs brought to New Zealand and the colonisation process. The homogeneity of mtDNA lineages from this first introduction suggests a single, closely-related founding population, and supports the current archaeological model of rapid and strategic colonisation. Complete and partial ancient mitogenomes were generated from archaeological specimens throughout Southeast Asia and the wider Pacific to investigate the place of dogs in the Lapita migrations. These results indicate the introduction of at least three different dog lineages to the Pacific region, each with a different dispersal history. An association between Late Lapita dogs and modern Taiwanese dogs was found that suggests the possibility that dogs may have been part of the expansion of Austronesian language speakers associated with the Lapita Cultural Complex, but were not successfully transported by groups moving beyond the Bismarck Archipelago. A major Pacific dog clade was observed, which was a relatively late but highly successful introduction. This lineage was found in archaeological specimens across the Pacific, including several islands in Polynesia. There appears to be a discontinuity between Lapita era mtDNA lineages and later East Polynesian lineages.

This research has resulted in new data generated from ancient DNA analyses of complete mitochondrial genomes of dogs from archaeological samples from Island Southeast Asia and the Pacific. The results demonstrate the complexity of dog introductions and dispersals in the region, with implications for understanding human colonisation processes and the ways in which dogs may have been moved around the Pacific.

Woods, Naomi (2017) Household Narratives from a Colonial Frontier.

This research uses an archaeological assemblage collected during the redevelopment of a central Whanganui carpark into the Victoria Retail Centre to highlight the potential of this type of material to provide rich and meaningful information about New Zealand's colonial past. In order to do this a methodology was created to suit archaeological investigations without pre-determined research questions and allow for the material culture itself to direct the research. This approach incorporates traditional archaeological recording, artefact analysis and historical research with the slightly less orthodox presentation of the data as three narratives which each focus on a particular individual or household. These narratives portray the past as a set of individual experiences as interpreted through particular artefacts or types of artefacts and enable archaeological data to be presented in a way which in accessible and meaningful to a non-archaeological audience while at the same time maintaining academic integrity. The stories themselves reveal three unique vignettes of life in late-nineteenth and early-twentieth century Whanganui in considerable more depth than traditional archaeological interpretations. When considered together these stories also provide insights into the past at a local, national and even global scale.

2016

Robinson, James Justin (2016) Tawhiti Rahi: Nga Poito o te Kupenga o Toi te Huatahi - A float of the fishing net of Toi te Huatahi. A multi-disciplinary study of Māori settlement of Tawhiti Rahi, an offshore island in northern New Zealand.

My archaeological research addresses the question of the role constrained and circumscribed offshore islands played in the initial Polynesian colonising phase and in the subsequent indigenous Māori culture in New Zealand's horticultural north. Specifically it attempts to determine the timing of settlement and the nature of that settlement on the Poor Knights, a group of islands located off the east coast of Northland. This is then used to discuss the regional history of the coastal and island seaway from the mainland out to Great Barrier Island.

Settled by Māori at an unknown time in the prehistoric period, these islands contain today a complex archaeological landscape of earth and stone structures along with faunal and lithic assemblages that are associated with Māori society just before contact with the western world.

The fieldwork has focused on Tawhiti Rahi Island, the largest island in the group, and one that contains a remarkably well preserved prehistoric archaeological landscape variously interpreted by ethnographers, scientists and archaeologists as gardens, villages, defended forts as well as ceremonial and specialist areas. This island is interesting because despite the obvious horticultural potential from its volcanic soils, sheltered topography and temperate climate, it also has significant constraints on settlement such as difficult access, minimal water supply and a limited range of non-garden related exploitable resources especially when compared to other nearby coastal islands and mainland localities. Utilising a multi-disciplinary approach a range of natural science techniques, archaeological methods and historic and traditional sources are used to establish and explain when and why this island was settled. Results of the palynology research create a vegetation history of the island that provides proxy evidence for 500 years of gardening starting around 1300AD at the beginning of New Zealand's prehistory. Archaeological survey and excavation show a complex constructed landscape that shows some direct garden activity in the middle of Māori prehistory around 400 years ago but most significantly show a significant increase in human activity at the very end of the prehistoric sequence that continues on onto the early historic period. Ethnographic and traditional history places these islands within the tribal territory of Ngatiwai that currently incorporates coastlines and islands from the Northland mainland out to Great Barrier Island, and identifies that gardens, muttonbird and refuge potential as the primary reasons for many generations of use of Tawhiti Rahi. However the traditions are ambiguous when it comes to a chronology of island settlement. Although clearly identifying an early discovery and naming, they surprisingly place the arrival of the islands first chief as occurring very late in the sequence only 200 years ago. Finally there is the absence of the Polynesian rat kiore. (Rattus exulans) on the Poor Knights. Since kiore are commensal with Polynesian settlement and they are found everywhere on the New Zealand mainland and on nearly all inshore and offshore island groups, their lack here raises serious questions about our assumptions on how long these islands were settled, the intensity of that settlement and on the role of agency. It is suggested that an integration and reconciliation of these apparently conflicting data sets is possible. This thesis suggests that this island was in continuous use by Māori for 500 years from 1300 AD right up to their abandonment in 1823. However for the first few hundred years they were utilised only as a valuable garden outlier for people living at less constrained settlements on the mainland. Full and permanent occupation of the island that produced the diverse range of site types visible on the ground today, occurred much later in the prehistoric period as a direct response to inter-tribal conflict that was escalating in the 1700s. The implications of the data obtained from Tawhiti Rahi suggests that for Māori in prehistory these islands were not seen as a special case with a different and separate story to that found on the mainland. Instead they are component parts of a tribal maritime territory that included the mainland coast and offshore islands in a seaway sheltered by Aotea

(Great Barrier) Island. Although the nature and timing of settlement may have followed different trajectories depending on the unusual mix of opportunities and difficulties inherent with living on this peripheral island, it is argued in this thesis that their actual usage of Tawhiti Rahi was entirely contingent on what was happening politically, economically and socially within Māori society in general. In this framework it is the sequence of 'presence and absence' scenarios left behind on this circumscribed island that allow for a discussion about change over time in the Māori history of this coastal region.

Wu, Pei-hua (2016) What Happened at the End of Lapita: Lapita to Post-Lapita Pottery Transition in West New Britain, Papua New Guinea.

This study presents a detailed Lapita to Post-Lapita sequence/transition with chronology at particular sites in west New Britain, through the medium of pottery analysis of style and production. The data allow me to address the research questions: (1) the cultural change that happened toward the end of Lapita, and (2) the issue of cultural continuity/discontinuity between the Lapita and Post-Lapita periods. This study identified a cultural change with greater break down and regionalization/diversification of the Lapita societies in the Late Lapita phase around and after 2750/2700 BP. This study also identified detailed pottery characterization, production, and provenance in west New Britain through compositional analysis, using a scanning electron microscope (SEM), which helps in understanding the interactions in the Lapita and Post-Lapita periods between west New Britain and other regions. In addition, this study identified a distinctive vessel form of double spouted pots of Lapita pottery that might originate from Island Southeast Asia, and demonstrates that after Lapita peoples had reached the Bismarcks, they maintained contact with homeland communities in Island Southeast Asia, and the double spouted pots were later introduced to the Bismarcks through interactions.

2015

<u>James-Lee, Tiffany Mahalia</u> (2015) Prehistoric Maori Subsistence: Evaluating Two Regions in North-eastern New Zealand.

Most existing models of settlement and subsistence in New Zealand archaeology were developed in conjunction with radiocarbon dates that no longer meet the current criteria for chronometric hygiene, and have generally been based on the restricted set of regions that have been the focus of much academic research, such as Murihiku in the south of the South Island and the Auckland region in the northern North Island. This research evaluates these models by bringing together a corpus of data from two study areas on adjacent parts of the North Island east coast: the Coromandel Peninsula, which was the focus of some early research; and the Western Bay of Plenty, which while dense in archaeological sites, has had relatively little research into subsistence conducted at the regional

level. Faunal assemblages with radiocarbon dates that meet strict chronometric hygiene criteria were selected and examined for patterns of spatial and temporal subsistence and variation in site types from which they derived. A case study from Whangamata, Coromandel Peninsula was used to provide fine-grained insight for patterns occurring at the regional level. Regional differences in subsistence and settlement patterns through time are identified. Early settlement in the Coromandel comprised both multi-function and specialised-function sites with generalised subsistence patterns. Settlement in the Western Bay of Plenty was sparse in early prehistory, with a sudden increase in site numbers in the middle period and a tendency towards specialised function sites and an overwhelming dominance of specialised subsistence assemblages. These results challenge the prevailing view of New Zealand prehistory that settlement was more transient in the early period and more settled in the late period. The data also emphasise the diverse patterns in regional prehistory, even when the study regions are directly adjacent to each other.

<u>Maxwell, Justin James</u> (2015) The Moriori. The integration of Arboriculture and Agroforestry in an East Polynesian Society.

The Chatham Islands were a challenging environment for East Polynesian colonisers. The successful long term settlement of these islands can be attributed to the first people applying and adapting Polynesian strategies to the colonisation of an unfamiliar environment. Previous studies have suggested that settlement and subsistence practices were entirely focused upon the collection of wild plants and fauna, throughout the Moriori sequence with a heavy dietary reliance on one marine species, the New Zealand fur seal (Arctocephalus forsteri). This interpretation is not consistent with the results of this research.

In this thesis a holistic multi-proxy research design is used to identify terrestrial plant use by Moriori and the landscape modification which is associated with the introduction of East Polynesian subsistence practices. The primary data sets employed are the ethnographic and historical accounts of Moriori subsistence, archaeological investigations of the broad-leaved forests and associated sites, anthracological and palynological analyses to identify past vegetation regimes and the anthropogenic effects, and to date when humans began to modify the environment. The results suggest that after an initial period of rapid population growth, even though marine mammals were still available in large numbers, the first settlers began to modify the environment to increase terrestrial production.

It is argued that the environmental changes occurred in part to increase the productivity of wild plants, particularly bracken fern (Pteridium esculentum). The most important change to the vegetation was the intentional introduction and management of the mainland New Zealand endemic tree Corynocarpus laevigatus. The broad-leaved forests, a previously under-researched component of Moriori subsistence, are shown to have been actively managed by Moriori. They were an integral component of the subsistence practices in the 'late', post-1650AD, Moriori sequence. The introduction and cultivation of Corynocarpus laevigatus

was essential to the long term colonisation of the Chatham Islands in the absence of the standard tropical East Polynesian cultigens.

2014

<u>Jackson, Moira A.</u> (2014) Settlements Patterns and Indigenous Agency in Te Tau Ihu, 1770-1860.

Dynamic post-contact Maiori settlement patterns in Te Tau Ihu o te Waka a Maui (the northern South Island) are used to investigate agency and the role of emergent nineteenth century European population on Maori landscape use. The study has shown that the settlement pattern changes observed in the 1770 to 1830 period were mainly due to agency and internal cultural drivers of change rather than by forces external to Aotearoa New Zealand. The conceptual framework is informed by social archaeological theory drawn from international culture contact studies. A geographic information system (GIS) was used to aid the analysis of temporal and spatial data derived from historical maps and charts augmented with archaeological historical and ethnographical information.

Petchey, Peter Graham (2014) The Archaeology of the New Zealand Stamp Mill.

This thesis is an archaeological study of the stamp mill, often referred to as a 'stamper battery,' that is one of the iconic features ofNew Zealand's historic goldfields. After the Otago gold rushes started in earnest in 1861 thousands of men flocked to the alluvial diggings, and they were soon searching for the quartz reefs that they were sure were the source of the river and stream gold.

Hard-rock mining started in 1862 in Otago and Coromandel, and machines were erected to crush the rock and release the gold that it (hopefully) contained. These machines were stamp mills, a mechanically simple hammer mill that raised and dropped heavy weights onto the quartz in order to reduce it to the consistency of sand. The first few mills were improvised locally from materials at hand, and these were soon followed by a number of 'engineered' stamp mills imported from foundries in Melbourne. A local manufacturing industry quickly grew up, and other mills were imported from Britain and America. Today many examples of these mills survive in the old goldfields in varying states of preservation. They constitute archaeological evidence of two important aspects of the goldfields: technology, and a place of work. Much Industrial Archaeology has traditionally focussed on technological details, and this is the starting point for this research. Contemporary industry literature is used to describe and understand the engineering of the stamp mill, and this understanding is then applied to the archaeological record. The results of a wide-scale survey that covered sites from Fiordland in the south to the Coromandel in the north are considered in terms of technological adoption, adaption and innovation in order to determine how and why gold milling technology came to New

Zealand.

The results indicate that the majority of the technology was imported, with Australia acting as a source of conventional technology, and Britain and America as sources of more innovative designs. However, far from being completely technologically dependent on these places, it is argued that New Zealand was a technological participant in the international mining industry.

There is ample archaeological evidence for local agency in New Zealand, whereby technology was chosen and adapted to suit local requirements, with some local designs then being re-exported. New Zealand was admittedly never more than small player in this international field, but it was nevertheless an active one.

The thesis then turns to the second issue: the stamp mill as a workplace. Since the 1970s commentators have pointed out that Industrial Archaeology should take note of social issues in the industrial world, but much subsequent work has been criticised because of its focus on technology and structures. By taking the same engineering analysis of the archaeological evidence of the New Zealand stamp mills as used in the discussion of technology, the mill as a place where people worked is considered. Evidence of wear, repair, modification and pragmatic adaption is discussed to identify the work that was actually carried out by the mill workers, and detailed volumetric analysis of various mill parts is used to quantify some of the tasks in relation to contemporary records of workmen's abilities. Finally, the workplace environment is also considered, including hazards such as noise, dust and poisons. The results of this, unsurprisingly, find that the battery house was by modern standards a very dangerous place. However, it is also observed that in a world without social welfare, the battery house represented employment and income that was vital for the working man and his family. In conclusion, the stamp mill is part of an archaeological landscape that has both international links and individual social meaning. Modern New Zealand society evolved in melting pot of the nineteenth century, and the gold mining industry played an important role in that development. The combination of evidence of international influence and local agency in mining technology, and the role and experiences of the mill workers, provides a small insight into the emergence of the complex modern world.

Smith, Catherine Ann (2014) Pre-European Māori textiles from South Island New Zealand.

The study of archaeological textiles is commonly reported as a tool for illumination of technology, social process (gender, production, exchange, interaction) and cultural difference. While most interpretation of prehistoric human society has been based on study of more robust material culture increasingly evidence suggests the importance of textiles in subsistence economies. Plants, and the textiles made from them, were likely as important as food for past human survival. However systematic, rigorous technical and analytical examination had not previously been applied to pre-European Māori textiles in New Zealand. Few Māori

textiles were known to be prehistoric, and previous examination of them had limited research value.

In order to improve knowledge about pre-European Māori textiles, and contextualise the archaeological discovery of a large assemblage of early textiles (early 15th century AD, Kaitorete Spit, Banks Peninsula, New Zealand) information was sought about existence of other relevant artefacts. A survey of New Zealand museums resulted in discovery of a larger corpus of prehistoric textiles than anticipated, scattered nationwide-wide. Three textile assemblages with good provenance from South Island, New Zealand, were selected for study i) Fiordland textiles; n.d. likely 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. All 206 individual artefacts were systematically documented (photography, illustration, diagrams) requiring development of terminology based on structural characteristics, and a pro-forma to record essential textile attributes.

The textiles showed innovation and difference. There was diversity of structure (wovens; plain, twills with different orientations and patterns, weft twining, knotting, braiding, folded yarns) and selvages (braids, twined, re-insertion into kaupapa in assorted ways). Variation in production and structure implied difference in artefact form, 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), short upper body garment such as a mai, pokeka or para, or a lower body garment such as a maro). 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 also among the most complex (structure, sett, surface treatment) and were more complex than textiles previously thought earlier in the sequence (Lake Hauroko). Developmental models articulated by Buck (1925; 1938) and 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. 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) seems more logical, and indeed discernable in the textile assemblages studied.

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.

2013

George, Amanda (2013) Dental pathology profile of pre-European Maori and Moriori.

An interest in the health and disease of past populations and how they may be influenced by factors such as diet, environment and culture are major themes of current bioarchaeological research. This thesis addresses questions relating to the dental health of past New Zealanders by examining evidence of dental wear, calculus, caries, periodontal disease, periapical infection and antemortem tooth loss, in order to construct a Dental Pathology Profile or DPP. Collections of pre-European Maori and Moriori skeletal remains from museums and institutions in New Zealand and in Europe were examined for evidence of their sex, age, stature and geographic affiliation to build individual life histories and clarify variations in the occurrence and frequency of dental disease. This data is then analyzed within the biocultural context of pre-European Maori and Moriori diet, environment and culture.

Present evidence points to a short prehistoric sequence for Maori and Moriori and the biology, culture and diet of both populations share many similarities with each other and with their East Polynesian ancestors. Although there is evidence for changes in settlement and diet, much of New Zealand's prehistory (from around 1500 AD) is characterized by a high degree of mobility, necessary to exploit the many varied microenvironments, and by seasonality, with the preservation, storage and trade and exchange of foodstuffs integral in most areas. Overall, the diet was highly abrasive with an emphasis on marine exploitation supported by numerous wild and semi-cultivated plant foods including the roots of various ferns, by various birds and marine mammals, and by agricultural crops grown where possible and traded elsewhere.

The results of the examination of dental pathology indicate that both Maori and Moriori showed little evidence of calculus, caries, or periodontal disease but did experience moderate-severe levels of wear which likely led to the high frequencies of intrabony defects and antemortem tooth loss observed. There is little evidence for differences in the frequency of dental disease by sex, or by provenance however most increased in frequency or severity with age. This suggests little difference in diet overall by sex or by regional affiliation. When levels of dental pathology are combined into a DPP, the results indicate it is not possible to categorise pre-European Maori and Moriori as either hunter-gatherers

or agriculturalists. Instead the subsistence strategy of both groups was complex, incorporating elements of various subsistence strategies so they may be best described more generally as maritime hunter-gatherers.

Simmons, Alexandra Lee (2013) Soldiers' Foodways: Historical Archaeology if Military Comestibles on the Waikato Campaign of the New Zealand Wars.

Food is an essential part of human existence and directly linked to the cultural behaviour of individuals, groups, and institutions. In their commentary on food studies, Mintz and Du Bois (2002, p. 8) noted that war has been relatively neglected as a research focus. This thesis investigates British and colonial soldiers' comestibles during the Waikato campaign of the New Zealand Wars, a regional conflict that commenced in 1863. It is the first major investigation that has been carried out on this subject in New Zealand and one of the few investigations worldwide on soldiers' comestibles during a war. The thesis addressed three questions: what did soldiers eat and drink during the campaign; how was food security ensured; and what foodways practices indicated status. The questions address themes that are at the core of foodways research (Dery 1997, Bray 2003, Cool 2006, Andersen and Moltsen 2007, Peres 2008, and Eichelberger 2010). Food security was of specific interest because the Waikato campaign followed the disastrous Crimean War and took place during a time of British military supply system reform. Cognitive archaeology and middle-range theory guided the research process. A middle-range methodological approach was used to address the research questions in three distinct data sources—the official records, eyewitness accounts, and the archaeological record. Each source was compiled as an independent record of comestibles using the same criteria; a middlerange technique used by Binford (1987), Leonie and Crosby (1987), Leonie and Potter (1988) and Smith (1996). The criteria were based on underlying food culture rule sets (Leach 2008, 2010). The rule sets were modified and used to construct a food culture research framework that addressed the range of data available in the sources. The framework structured the investigation. Among the findings was evidence that the War Office supply and transportation system reforms had little impact on food systems during the campaign in New Zealand. More unusual findings included the link between food security and luxury foods (a finding not identified in the military food research of Dery 1997, Cool 2006, or Eichelberger 2010). The research also indicated a variety of food practices were used to indicate status. Many of the foodways were embodied in the mess system—a system of hierarchal separation. For example, the mess building or tent was a daily visual reminder of the military hierarchy, e.g. commissioned officers' messes, sergeants' messes, enlisted men's messes. Military hierarchy is directly linked to military control and discipline. The ideas and hypotheses presented are pertinent to future archaeological investigations at military sites in New Zealand and overseas. The research methodology and the foodways research framework also have applications for comestible research at other sites

such as railway camps, abandoned towns, mining camps, as well as for regional analysis of foodways at contemporary pre-historic sites.

2012

Ford, Anne (2012) Learning the Lithic Lanscape in the Ivane Valley, Papua New Guinea: modelling colonisation and occupation using lithic sources and stone tool technology.

Modern humans first moved into the Ivane valley between 43.000 -49,000 years cal BP, placing it within the initial colonisation stage of Papua New Guinea. At 2000 metres above sea level, this montane valley also marks the first time that modern humans move into a high altitude area in the Sahul region. This study addresses the question of how modern humans colonised and occupied new landscapes in the Sahul region by using the Ivane valley as a case study. To investigate this question, a landscape learning framework was employed to demonstrate how people learnt and familiarised themselves with the lithic landscape. Lithic source use and stone tool technological organisation were expected to change due to two factors linked to landscape learning: (1) as people became more familiar with the properties of the specific lithic landscape itself; and (2) as a result of the particular technological responses utilised by people in exploiting their local environment. The results of this study demonstrated both changes and continuities in raw material selection and stone tool technology in the Ivane valley over time. These were attributed to both the nature of the lithic landscape available and accumulations in landscape learning. Importantly, this study noted that while there was no evidence for risk minimisation in the initial stages of colonisation, overall raw material selection and technological organisation trend towards resource maximisation. All periods of occupation were characterised by three factors: (1) only locally available raw materials were used; (2) specific raw materials were used for particular technological trajectories; and (3) technology was organised expediently, where sourcing, manufacture, use and discard of tools occurred on site, with no apparent evidence for curation. The overall structure of the technology was considered to be a result of the nature of the lithic landscape, where the availability of abundant high quality raw materials negated the need to carry or curate mobile tool kits. A fundamental result of this thesis has therefore been the identification of the influence that the local lithic landscape has on shaping how technology is organised. Changes in raw material selection and technology over time point to increases in landscape learning of both lithic and non-lithic resources. Right from initial colonisation, only local raw materials were used and these were used selectively, being associated with particular technological trajectories. Over time, raw material selection changes, developing towards an optimal use of the lithic landscape, where high quality raw materials were selected over others. At the same time, an increase in diversity of tool types suggests

new familiarity with non-lithic resources in the Ivane valley. In terms of stone technology, this thesis challenges the usual depiction of Pleistocene Sahul stone technology as a static amorphous tradition, with few defined tool types. Instead, it demonstrates that a dynamic technology existed in the Ivane valley, with formally modified tools present during all periods of occupation, as well as changes in raw material selection, technological trajectories and tool types occurring over time.

2008

<u>Cawte, Hayden James</u> (2008) *Smith and Society in Bronze Age Thailand.*A metalsmith's ability to turn stone into metal and mould metal into

useable objects, one of the most valuable production industries in any society. The conception of this metallurgical knowledge has been the major catalyst in the development of increasing socio-political complexity since the beginning of the Bronze Age (Childe, 1930). However, then considering the prehistory of Southeast Asia, especially Thailand, it is noted that the introduction of metallurgical activity, namely copper and bronze technology, did not engender the increase in social complexity witnessed in other regions. It is suggested that the region is anomalous in that terms and concepts developed to describe and define Bronze Ages by scholars working in other regions, lack strict analogues within Southeast Asia. Muhly (1988) has famously noted the noncompliance of Southeast Asia to previous models, "In all other corners of the Bronze Age world - China, Mesopotamia, Anatolia, the Aegean and central Europe – we find the introduction of bronze technology associated with a complex of social, political and economic developments that mark the rise of the state. Only in Southeast Asia, especially in Thailand and Vietnam, do these developments seem to be missing" (Muhly, 1988:16). This "rise of the state" is associated with the development of hierarchy, inequality, and status differentiation, evidence for which, it is argued, is most explicitly articulated in mortuary contexts (Bacus, 2006). Evidence would include an intra-site restriction in access to resources, including prestige goods, and ranking, a vertical differentiation, often related to interment wealth. Thus the introduction of metallurgical metallurgical technology saw copper and other prestige goods, used to entrench authority and advertise status (Coles and Harding; 1979). Such evidence has so far been absent in Bronze Age, Southeast Asian contexts. Accordingly, the usefulness of the term "Bronze Age" for describing and defining Southeast Asian assemblages has been questioned (White, 2002). However, the Ban Non Wat discovery of wealthy Bronze Age interments, with bronze grave goods restricted to the wealthiest, has furrowed the brow of many working in the region, providing evidence to at least reconsider this stance.

Despite its obvious importance in shaping Bronze Age societies around the globe, and now, significance in Northeast Thailand, very little is known of the acceptance, development, and spread of tin-bronze metallurgical techniques during the prehistory of Southeast Asia. Only a handful of investigations of archaeological sites in the region have investigated the use of metals beyond macroscopic cataloguing. Utilising an agential framework, the Ban Non Wat bronze metallurgical evidence has been investigated as an entire assemblage, from the perspective of the individual metalsmith, in order to greater understand the industry and its impact upon the society incorporating the new technology.

Furthermore, mortuary data is investigated by means of wealth assessment, as an insight into social form throughout the corresponding period of adoptions, development and spread of metallurgy. The bivalent study of society and technology has shed light on the development of socio-political, and economic complexity during Bronze Age Southeast Asia, and in doing so, outlined the direct impact the metalsmiths themselves had on the supply, spread and functioning of their important industry.

Variabilities in grave 'wealth', have been identified as Ban Non Wat. A further situation not previously encountered in Bronze Age Southeast Asia, is the restriction of bronze goods, in death, to differentiated, wealthy individuals. The existence of such individuals suggests that society during this period was rather more complex than regional precedents would suggest. I contend that it is the introduction of metallurgy, and in particular, the nature in which it was conducted that engendered these developments.

Therefore, when considering the traditional course of developing social-political complexity during the Bronze Age, it now seems that Thailand at least, is potentially, not that anomalous.

Kononenko, Nina (2008) Obsidian Tool Function and Settlement Pattern during the Middle-late Holocene on Garua Island, West New Britain, Papua New Guinea (Australian National University) (2 volumes).

This thesis tests hypotheses previously proposed by scholars about the function of obsidian tools and their relationship with various aspects of human behaviour in the middle and late Holocene. Based on the functional analysis of a large sample of obsidian artefacts recovered from the FAO site on Garua Island, West New Britain, Papua New Guinea, this research has made significant contributions to both (1) use-wear methodology in the study of lithic assemblages and (2) new interpretations for subsistence, settlement patterns and mobility of the middle and late Holocene populations on Garua Island, with implications for the Bismark Archipelago generally.

A comparative approach was developed in order to understand how use-wear is formed and the potential impact of taphonomic factors. This approach involved comparisons of (1) extensive replication experiments and (2) studies of archaeological assemblages of obsidian artefacts from Vanuatu, Korea and Russia to reconstruct tool use on the basis of a microscopic study of artefact edges viewed at high magnification. Task-oriented experiments involving 292 obsidian tools were conducted. Some materials not previously incorporated into obsidian use-war experiments

were included to broaden the range of use-wear patterns. The extensive and detailed photographic documentation of wear patterns observed on artefacts and experimental tools has generated an important resource for future comparative studies of obsidian assemblages both in the Pacific region and elsewhere.

My integrated use-wear/residue study of 190 obsidian tools from FAO on Garua Island has significantly extended the documented range of functions of obsidian tools used for subsistence, craft and social activities, some of which had not been previously recognised as occurring in the middle and late Holocene periods in Papua New Guinea. Most of the tools had been used in craft activities, notwithstanding their chronological origin. Plant and non-plant materials were worked with obsidian tools using various modes of use and a range of materials. The working of skin, particularly piercing, is probably related to tattooing and scarification of the human body in both Papua New Guinea and Korea, and suggests a social function of stone tools not previously recognised within lithic assemblages. With rare exceptions, flakes were used for short periods of time as single purpose tools in both chronological periods confirming an expedient tool use strategy as a common technological feature in the Bismark Archipelago throughout the Holocene.

For most of the middle and late Holocene assemblages in the Bismark Archipelago, no previous attempt has been made to establish the structure and organisation of activities at a particular site through a systematic analysis of used tools and the pattern of their discard. My research provides evidence that the FAO site was re-occupied repeatedly during both periods, although a slightly different approach to the use of the space is apparent in the late Holocene. Moreover, my systematic study of obsidian tool use has revealed continuity in subsistence practices, settlement strategies and tool use patterns on Garua Island, during both the middle and late Holocene. This significant result suggests that the human populations had a low level of mobility and that gardening practices were developed in West New Britain before the Lapita pottery tradition was introduced into the region following the W-K2 catastrophic eruption. This conclusion is consistent with hypotheses of other scholars. Furthermore, the absence of obvious changes in the strategy of tool use, settlement organisation and subsistence activities coinciding with the appearance of new social groups with Lapita pottery, new lithic technology, advanced agricultural practices and domesticated animals. raises a number of important issues. These issues need to be resolved through further investigation of the relationship between the function of tools and available environmental resources and the cultural and social activities of the middle and late Holocene populations in the Bismark Archipelago. These new issues emerged from use-wear/residue studies of stone tools and are critical for understanding the processes involved in the development and spread of the Lapita Cultural Complex in the Pacific region.

Wiriyaromp, Warrachai (2008) The Neolithic Period in Thailand.

There are two principal models that purport to interpret the evidence for the origins of the Neolithic period in Thailand. Both stress the importance of rice cultivation and the domestication of a range of animals. One incorporates archaeological and linguistic evidence in identifying the origins as the result of the diffusion of farming communities into Southeast Asia and India from a source of the Yangtze River valley. The alternative stresses a local evolutionary pathway whereby indigenous hunter-gatherers began to cultivate rice within Thailand. This dissertation is centred on the results of the excavation of Ban Non Wat, in the Upper Mun of Northeast Thailand. This has provided one of the largest, best dated and provenanced samples of occupation and mortuary remains of a Neolithic community so far available in Southeast

the largest, best dated and provenanced samples of occupation and mortuary remains of a Neolithic community so far available in Southeast Asia. Its principal objective is to define the motifs incised, impressed and painted onto the surface of ceramic mortuary vessels, in order to permit a comparison with other assemblages first in Thailand, then in Southeast Asia north into China. It is held that if there are close parallels over a wide geographic area, in these motifs, then it would support a model of diffusion. If there are not, then the alternative of local origins would need to be examined closely.

It is argued that the similarity in motifs, particularly a stylised human figure, between Thai and Vietnamese sites lends support to a common origin for these groups. The motifs are not so obvious when examining the southern China data, although the mode of decoration by painting, incising and impressing recur there. This, in conjunction with mortuary rituals, weaving technology, the domestic dog, and the linguistic evidence, sustains a model for demic diffusion. However the presence of ceramic vessels also decorated with impressed/incised techniques in maritime hunter-gatherer contexts stresses that the actual Neolithic settlement may have been more complex.

2007

Inglis, Raelene Margaret (2007) The Cultural Transmission of Cookery Knowledge. From Seventeenth Century Britain to Twentieth Century New Zealand.

Underpinning most anthropological definitions of culture is the concept of the cultural transmission and diffusion of learned behaviour. Anthropological works generally emphasise the outcomes of this transmission rather than the processes, in part because the mechanisms are either ongoing or practically invisible. Recipes have proved a unique tool for tracking cultural transmission because of their inherent precision and characteristically datable contexts. This study uses recipes to explore the many paths of transmission and diffusion of culinary knowledge. The period under review is from the eighteenth to the twentieth centuries and the focus is on British culinary traditions up-to and after, their transfer to

New Zealand. It was found that culinary knowledge was disseminated around New Zealand through both formal and informal mechanisms. Formal transmission involved teachers, their school cookery classes and published teaching manuals, all of which played a major role in training school children to cook the dishes served at family meals. In contrast, informal publications such as cookery columns in magazines and newspapers were transmitting recipes for more fashionable dishes, especially baking, and these incorporated mechanisms that promoted innovation more than retention of traditional recipes. The significant role of material culture in cookery provided another pathway of transmission through appliance recipe books which translated established recipes into a form that could be made with the new technology, thereby preventing their disappearance from the culinary repertoires of cooks. It was established that community cookbooks, a common means of fund-raising, were a significant means of diffusing culinary information. The cookbooks produced by such efforts demonstrated change over time in their recipe content, especially if published as a series and such publications were tangible repositories of the cookery knowledge within the community. This study examined not only the pathways of culinary transmission but also the contexts in which it occurred. These circumstances were found to be influential in determining eventual acceptance or rejection of cookery knowledge and recipes, and provide valuable insights into processes of culture change.

2005

<u>Stephenson, Janet</u> (2005) Values in Space and Time: A Framework for Understanding Multiple Cultural Values in Landscapes. (Shared with Geography Dept.)

When new development threatens a valued landscape it is not just the physical landscape that is being affected, but the collective memories, meanings and identities that the landscape holds. Planning theory and practice currently offer relatively little guidance as to how to address meaning and value, particularly at a landscape scale.

Recent literature from a variety of disciplines has stressed the need to develop holistic models of understanding landscape. Particular emphasis has been laid on the absence of integration of disciplinary approaches, and the need to involve communities in defining what is important and distinctive about their own landscapes.

The thesis sets out to develop a conceptual framework to assist in understanding multiple cultural values in landscapes. Although the primary focus of the research is to address the perceived shortcomings in planning theory and practice, its potential relevance to inter-disciplinary work also forms a major component of the research approach. Values in landscapes include those expressed by associated communities and those identified through a variety of disciplinary approaches. Using case studies, the research explores the nature and range of landscape

values as expressed by those with special associations with particular landscapes. It also examines the nature of the meanings and values ascribed by disciplines with an interest in landscape, and how various disciplines model landscape so as to convey these values.

Analysis of these findings generates a landscape framework consisting of two related models. The Cultural Values Model offers a conceptual structure with which to consider the surface and embedded values of landscapes in terms of forms, practices and relationships. The Dimensional Landscape Model provides a structured way of linking expressed values to the landscape, using dimensional concepts of nodes, networks, spaces, webs and layers.

The landscape framework is found to be useful not only for generating a comprehensive picture of key landscape values, but also in offering an integrated approach that has utility both for planners and for other landscape-related disciplines.

Thomas, Tim (2005) Things of Roviana: Material Culture, Personhood and Agency in Nineteenth Century Solomon Islands.

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 Royiana 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.

2004

Drumm, Darrin Jared (2004) Habitats and Macroinvertebrate Fauna of the Reef-Top of Rarotonga, Cook Islands: Implications for Fisheries and Conservation Management. (Shared with Marine Science Dept.)

Throughout the Pacific, many species of echinoderms and molluscs have cultural value and are harvested extensively in subsistence fisheries. Many of these species are sedentary and often associated with distinct reef-top habitats. Despite the significance of reef habitats and their fauna for fisheries and biodiversity etc, little information has been available on the distribution of habitats and their influence on the reef-top fauna in the Cook Islands. This thesis developed a novel approach to assess the status of the shallow-water reef-tops of Rarotonga, Cook Islands, to provide critical information to fisheries and conservation managers. The approach used remote sensing (aerial photography with ground truthing) to map the spatial arrangement and extent of the entire reef-top habitats accurately, and historical wind data and coastline shape to determine the windward and leeward sides of the island. The benthic habitat maps and degree of wind exposure were used to design and undertake a stratified sampling programme to assess the distribution and abundance of the epibenthic macroinvertebrate fauna of the reef-top. I quantified the distribution and abundance of the epibenthic macroinvertebrates and how they varied with habitat, assessed the effectiveness of a traditional ra'ui (marine protected area) for conserving stocks of Trochus niloticus and other invertebrates, and investigated the reproductive biology and

impacts of traditional gonad harvesting on Holothuria leucospilota. There were four major habitat types (rubble/rock, sand/coral matrix, algal rim and sand) identified, the most extensive being rubble/rock (45%) and sand/coral matrix (35%). The degree of exposure to winds was found to correlate with the reef development and habitat distribution. The assemblage composition of each major habitat type differed significantly from every other habitat. The rubble/rock habitat had the greatest substratum heterogeneity and structural complexity, and the highest number of species and individuals. The overall abundance of the fauna was dominated by holothurians (68%) and echinoids (30%), while Trochus niloticus and Tridacna maxima accounted for the remaining 2% of the total invertebrate assemblage. Clear habitat partitioning was also found for adult and juvenile Trochus niloticus and Tridacna maxima. In the traditional fishery for Holothuria leucospilota, the mature gonads of males are harvested by making an incision in the body-wall of the animal, removing the gonads and then returning the animal to the reef to allow regeneration. Monthly collections of H. leucospilota were used to describe the reproductive biology of this species. Gametogenesis and spawning were synchronous between the sexes and spawning occurred annually during summer, when water temperature and photoperiod were at their highest. Although the incision in the body-wall and gonad removal had no impact on the survival of H.leucospilota in experimental cages, their body weight, and general sheltering and feeding behaviours were affected. Gonads took at least 41 days to start regenerating, suggesting a considerable delay in the spawning of fished individuals. In 1998, five Rarotongan communities re-introduced the traditional ra'ui system of resource management, prohibiting all fishing and gathering from their reefs. The performance of the Nikao ra'ui, which had been put in place to allow trochus stocks to increase, was investigated. Comparisons of macroinvertebrate assemblage composition and species density were made between three fishing treatments, i.e. fished areas adjacent to the ra'ui, within the ra'ui after two years of protection, and in the ra'ui after it had been lifted for three weeks to allow a commercial trochus harvest. Analysis of variance on the count data for the twelve most abundant species, and non-metric multi-dimensional scaling indicated that there were no differences in the microhabitat or the invertebrate assemblage composition between the three fishing treatments. However, there were significant differences between the rubble/rock and sand/coral matrix habitat types. The results on the effectiveness of the Nikao ra'ui are equivocal, due to the small sample size, and the variability between samples which was highlighted by the wide confidence intervals.

This study highlights the importance of habitat to the macroinvertebrate fauna of the reef-top and the need for accurate habitat maps to increase the cost-effectiveness of future resource surveys, to provide information to management, and for the design of Marine Protected Areas. The mapping and survey methods must be reliable and repeatable in terms of the limitations of time, and the availability of expertise, funding and resources. The results provide important information for fisheries and

conservation managers of Rarotonga and other Pacific Islands to better design rigorous sampling programmes for monitoring the status of reeftop resources, and for evaluating and planning Marine Protected Areas.

2003

Samson, J.O. (2003) Cultures of Collecting: Maori Curio Collecting in Murihiku, 1865-1975.

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.

2002

<u>Chang. Nigel</u> (2002) Personal Ornaments in Thai Prehistory: Nong Nor, Ban Lum Khao and Noen U-Loke.

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, combined 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 autocthonous 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.

Talbot, Sarah (2002) From the Iron Age to Angkor in Northeast Thailand.

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.

2000

Palmer, Rachel (2000) The Landscape Archaeology of the Lower Clutha district.

Over the last decade the landscape approach to archaeology has become increasingly popular; however field archaeologists continue to be criticised for not recognising its potential, despite significant contributions by British archaeologists and American historical archaeologists as they define an ever broadening discipline. This thesis uses the landscape approach to illustrate the multi-period past landscape of the Lower Clutha District, South Otago, New Zealand. Based on a sample of 555 sites recorded in the district it describes the landscape from prehistory to 1950 in broad themes centred on: prehistory; contact period; agriculture; primary and secondary industries; townscapes; landscapes of remembrance; and transport and communication networks. The organisation of the landscape is explored to reveal the dynamics of the human environment relationship. These include the natural and cultural reasons behind settlement and the changing concentrations of population over time. It looks at the utilisation of resources from extraction and processing to transportation and worker's housing. The landscape was manipulated to define social relations and yet the environment has always shown its potential for influencing human land uses. The most outstanding example was the flood of 1878, which destroyed existing transport networks and significantly altered future land uses.

From the small cottages of the coal miners to the gravestones of the dead, the Lower Clutha District provides multiple layers of evidence of the active relationship between people and the natural environment.

O'Reilly, Dougald (1999) An Examination of the Moated Site Non Muang Kao in Northeast Thailand.

This thesis examines the development of social complexity in Northeast Thailand with reference to two sites, Ban Lum Khao and Non Muang Kao. These sites, occupied during the Bronze and Iron Ages respectively, were excavated in the hope that they would provide some insight into the hitherto uninvestigated area of prehistoric social development in the Mun River basin.

Using the mortuary remains from Ban Lum Khao it has been possible to draw inferences regarding the socio-political environment during the Bronze Age. The evidence from Non Muang Kao, while not as plentiful, indicates that dramatic social changes took place in the region from c. 1000-500 BC.

A significant portion of the thesis is dedicated to anthropological and archaeological theory, pertaining to social organisation. An overview of the present state of archaeological research in the Mun River valley is followed by a description of the excavations at Ban Lum Khao and Non Muang Kao. Succeeding chapters are dedicated to the analysis of the archaeological remains, including the presentation of a ceramic categorisation. The data from Ban Lum Khao are subjected to statistical analysis in an attempt to identify possible differences in mortuary practice which may be indicative of the social structure. The evidence from Ban Lum Khao seems to indicate that no entrenched hierarchical system existed during the time the cemetery was in use. The material from Non Muang Kao and other contemporaneous Iron Age sites, however, suggests that such systems developed in subsequent periods. The thesis concludes with an overview of traditional models of social organisation as they pertain to the evidence from Northeast Thailand with a recommendation that the heterarchical model be embraced. It is felt that this paradigm best explains the available data.