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## ARCHAEOLOGY IN NEW ZEALAND



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# ABSTRACTS FROM THESES AND DISSERTATIONS ANTHROPOLOGY DEPARTMENT UNIVERSITY OF OTAGO 1997-1998

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Abstracts of 6 MA theses and 11 BA(Hons) dissertations completed in 1997 and 1998 are presented below. Copies of the MA theses are held in both the University of Otago Central Library and the Anthropology Department Library, while the BA(Hons) dissertations are held only in the latter. Requests for copies of MA theses should be directed to the Central Library, and for BA(Hons) dissertations to the Anthropology Department.

Amanda, BROOKS. 1997. *An Ethnoarchaeological Investigation of Mitiaro, Cook Islands*. MA thesis, Anthropology Department, University of Otago. 106 pp, 22 figures, 2 diagrams, 9 maps.

The aim of the archaeologist is to investigate a culture's material remains and from this data attempt to understand numerous social, political, economic and cultural aspects of that society. Often assumptions about social organisation, population size and political structure are deduced from rigorous mapping and analysis of material remains and their spatial patterning. However there is always that element of uncertainty involved when making these assumptions. One particular uncertainty is whether social and political systems are reflected in the material culture of a society to the extent which is required to give the archaeologist a basis for their assumptions, and if so whether that information can be successfully retrieved using archaeological methods. Therefore when given the opportunity to analyse a living society which is in a relatively isolated setting and still has evident bonds with its traditional background, I felt that this could be an important step in, ascertaining the extent to which socio-political structure could be understood from material remains. Utilising the method of ethnoarchaeology I was able to analyse the living society of Mitiaro in the Cook

Islands using the archaeological techniques which would also be used on the archaeological remains on the island. My particular focus was the spatial organisation of this one community which is made up of three tribal groups. The people of Mitiaro maintain a strong link to the traditional values and ideas of their ancestors. The society is based on a hierarchical socio-political system with its grounding in genealogy and the traditional land tenure system. There is also a more modern political system based on that of New Zealand and the way these two systems interact together enhances the power of tradition in this society.

My results proved interesting for both the archaeologist and the ethnoarchaeologist, however the one predominant factor which did come across is the wealth of information available through this approach and the necessity for further investigations of living communities within the Pacific region.

James CHETWIN. 1998. *Aspects of Structural Technology at Noen U-Loke*. BA (Hons) dissertation, Anthropology Department, University of Otago. 89 pp, 20 figures, 3 tables, 2 appendices.

Construction technology in Iron Age Southeast Asia is not well understood. This dissertation examines evidence for such activity by reference to sintered daub remains from Noen U-Loke, Nakhon Ratchasima Province, Thailand.

Wattle and daub technology is explained with reference to literature from Europe and Africa, and evidence for such technology in the published literature on Southeast Asia is assessed. Waffle and daub technology is examined and explained as a construction process requiring specialised knowledge and materials. Construction methods are analysed by the examination of sintered daub fragments bearing impressions of decayed plant materials. It is argued that details of construction method are apparent from quantitative and qualitative variation in daub structures. A classification system is devised for use in the study, to aid in the analysis of construction method. Reconstructions of prehistoric building practices are offered, as are conclusions on the nature of preservation and deposition of daub in the archaeological record.

The preliminary nature of this study highlights the paucity of our understanding of practices of construction in prehistoric Southeast Asia, and attempts to set out basic considerations on a previously neglected line of inquiry in the study of domestic and industrial activity in prehistoric Southeast Asia.

Andrew DODD. 1998. *Chert Stone Tools from the Southeast Solomon Islands*. BA (Hons) dissertation, Anthropology Department, University of Otago. 150

pp, 50 figures, 2 appendices.

This paper deals with the chert artifacts recovered from Su'ena village. The original chert assemblage included 67 tools described as adzes, with a further 20 recovered when sorting through the waste flakes from the site. This study is concerned only with those tools previously classified as adzes. The size and morphology of these tools is the same as those described in the other sites on Ulawa, San Cristobal, and Malaita. The condition of the tools is varied. Some of the adzes show attempts at reshaping after breakage.

Stone adze studies in the past have been descriptive, culture historic, and technological in their orientation. This project aims to include all of these aspects to provide a holistic analysis of these tools. Both the ethnographic, and archaeological records will be considered. Previous analyses of these tool types will be considered, along with any ethnographic descriptions of these tools from the earliest European visitors to the Solomon Islands. This project primarily aims to describe the function of the adzes and manufacturing techniques employed in their production. Manufacture will be studied by an investigation of the positioning, angling, and types of flake scars, and amount of cortical material remaining. These attributes will reflect the stone reduction sequence. The ultimate aim of this project is to provide data suitable for a wider comparative study of prehistoric Solomon Island stone working technology. It will offer an interpretation of how these adzes were manufactured, and suggestions of what functions they served to perform. This will include the implications of this study, and of the direction of further studies needed in this area.

Karen FRASER.1998. *Fishing for Tuna in Pacific Prehistory*. MA thesis, Anthropology Department, University of Otago. 176 pp, 56 figures, 21 tables, 3 appendices.

The archaeological evidence from faunal analyses in the Pacific suggests an emphasis on inshore fish and fishing strategies. In contrast, the faunal evidence for offshore fish such as tuna is slight. Several sites in East Polynesia with high proportions of tuna are unusual in this regard. Yet ethnographic accounts of fishing in the Pacific region often contain detailed descriptions of offshore fishing expeditions to catch pelagic fish, including tuna. These fish continue to occupy a significant place in the cultural life of many Pacific island communities.

The uneven representation of tuna in archaeological sites is not thought to derive from any known taphonomic process, but fairly represents the relative abundance of tuna in catches throughout the Pacific. Discontinuities in catch frequency do not follow any known variations in natural abundance, and the preferred explanation is cultural choice. Moreover, in sites where tuna were a major component of the catch, there appears to be a small but consistent decline in their relative abundance, once again believed to reflect culture-historical rather than natural processes. The ethnographic and archaeological evidence is reviewed for several areas in the Pacific where tuna were more commonly caught. The evidence from faunal analyses is considered for four archaeological sites, Hane and Te Anapua in the Marquesas Islands, Fa'ahia in the Society Islands and Motupore in Papua New Guinea, where tuna were caught in relatively high abundance. Techniques are described for reconstructing size-frequency information from archaeological bones from these sites. It is argued that the social importance as well as economic aspects of tuna fishing need to be incorporated in explanations for the presence of tuna in archaeological sites.

Dean GROGAN. 1998. *The Analysis of Glassware from New Zealand Historic Sites*. MA thesis, Anthropology Department, University of Otago. 161 pp, 17 figures, 16 tables, 3 appendices.

Currently there are a wide variety of methodologies in use for the analysis of glassware from New Zealand historic sites. Different methodological approaches and ways of presenting results mean that material from different sites cannot be accurately compared at any but the most basic level. The object of this thesis is to develop a standardised, thorough, and repeatable methodology for the quantification of glassware, particularly glass bottles, from New Zealand's historic assemblages in order that more detailed comparisons may be undertaken.

Development of this methodology entailed a review of previous glass analyses and the selection and the testing of many of these procedures on the glassware assemblage from the 1860's goldmining site of German Hill in Central Otago, New Zealand. The outcome of the analysis showed that it was possible to arrive at a range of results when using different quantification methods on the same assemblage, which has serious implications for any detailed comparisons between sites.

The German Hill material was compared using statistical testing methods to assemblages from six other sites from around New Zealand. Despite differences

between methodologies and presentation of data, these comparisons showed the potential for information that may be gained from detailed comparisons of this type, which so far have not been undertaken to any real extent in New Zealand historic archaeology. It is thought that a standardised methodology could act to encourage more comparisons of this type, which would allow the more accurate study of the differences in social and economic conditions between historical sites.

Aaron IRVING. 1998. *Debitage and Distance: A Petrographic Study of Kawela Lithic Assemblage*. BA (Hons) dissertation, Anthropology Department, University of Otago. 63 pp, 14 figures, 1 table, 4 appendices.

The sourcing of archaeological basalt to geological outcrops is of major importance to Pacific archaeology for a number of reasons. Firstly in the Eastern Pacific, basalt is the only real durable and ubiquitous raw resource (apart from shell and bone which are difficult to source accurately) and secondly, the identification of foreign stone to a distant geological source presupposes some form of contact or travel. The only real explanation for the displacement of archaeological basalt is by human agency.

The lithic assemblage from the Kawela Mound site in Moloka'i, in the Hawaiian Islands, consists of 3736 pieces of stone with a total weight of 5.6 kg. This assemblage was analysed macroscopically. The Kawela Mound assemblage was sorted into 15 groups based on macroscopic differences. From these groups, possible functions were inferred and the assemblage was then broken down into two functional groups: stone used in tool manufacture (flaking stone) and stone used in construction (construction stone). From these groups changes in site activities and stages of settlement could be inferred.

Items from each macroscopic group were analysed in petrographic thin section, and the results fine-tuned the sorting by macroscopic attributes, but loosely concurred with the macroscopic results. Most of the flaking stone was imported from West Molokai, from the well known quarries 'Amikopala and Mo'omomi and the construction stone was largely local.

Brenda JONES. 1997. *Flake Tools from Suena, Solomon Islands*. BA (Hons) dissertation, Anthropology Department, University of Otago. 116 pp, 22 figures, 8 tables, 3 appendices.

An analysis of a chert assemblage from Su'ena in the Southeast Solomon Islands is presented. Evidence for a temporal change in resource accessibility is

investigated through the analysis of assemblage composition and visible manifestations of technological manufacture. A review of contemporary lithic analyses is provided with a focus on the methodologies implemented in the investigation. Statistical manipulations indicate a decrease in chert over time and these results are discussed with regards to a resource maximisation response by knappers and the broader issue of chert as an important trade commodity in the interaction of the Southeast Solomon Islanders in prehistory.

Morag McCaw. 1998. *The Spatial Analysis of Prehistoric Cemeteries in Thailand*. BA (Hons) dissertation, Anthropology Department, University of Otago. 94 pp, 23 figures, 14 tables, 1 appendix.

The distribution of burials at various prehistoric cemeteries in Thailand suggests evidence for the deliberate placement of each individual grave. The significance of such an occurrence reflects the social systems implemented by that particular society. The sites of Ban Chiang, Ban Lum Khao, Ban Na Di, Khok Phanom Di, Noen U-Loke, Nong Nor, and Non Nok Tha, will be subjected to spatial analyses in order to determine whether the distribution of burials at each site is random or not. Co-ordinates are taken from individual graves to comprise a data set for each given site. The spatial analysis seeks to determine the spatial distribution of these points, and in so doing, the nature of the pattern. Non-random distributions infer the existence of pre-planned activity. The distribution of graves into tight clusters, loosely formed clusters, or separated into rows, reflects the deliberate placement of graves. The grouping of graves is determined by membership groups. Membership groups maintain a distinct burial location where members are exclusively buried. Such groups are often based on a hierarchical system, or on the basis of family groups. Evidence pertaining to such activities indicates the preoccupation with ritualistic behaviour. Such an occurrence is typical of what is expected from communities with growing social complexity.

Kathryn MILLER. 1998. *Curio-hunting and the Regional Archaeologist: The Diaries of David Teviotdale*. BA (Hons) dissertation, Anthropology Department, University of Otago. 68 pp, 26 figures, 2 tables.

Records of early archaeologists and curio-hunters have been under-utilised in preliminary investigations for regional archaeological studies. Curio-hunter and Otago Museum employee, David Teviotdale went on an artefact collecting trip to the Nelson-Marlborough region with fellow collector A.G. Hornsey in the summer of 1934-1935. The section of Teviotdale's field diary, from December

22 1934 to January 5 1935, when the pair were in Golden Bay, northwest Nelson, is closely examined to ascertain its potential use to the modern regional archaeologist. Three key issues are examined: Use of the diary to locate sites and identify site disturbance processes, to locate collections of artefacts and assess collector's motivations and to analyse Teviotdale and Hornsey's artefact finds, especially with regard to collector motivation and provenance information. Documents such as this have a great deal of untapped potential for investigating all these areas and deserve to have an integral part in preliminary archaeological studies.

Melanie PIERSON. 1998. *Ancient DNA and the People of Khok Phanom Di*. MA thesis, Anthropology Department, University of Otago. 128 pp, 18 figures, 7 tables, 6 appendices.

In this study human skeletal remains from the prehistoric Thai site of Khok Phanom Di (KPD) were examined. The project aimed to determine whether deoxyribonucleic acid (DNA) had survived in the 3500-4000-year-old human remains, and to act as a pilot study for future archaeological applications of ancient DNA research. Aspects of the KPD community which could benefit from an ancient DNA analysis were identified, and bone samples from a total of seventeen human subjects, thirteen of whom were from KPD, underwent ancient DNA analysis. While it appeared that ancient DNA was recovered from the KPD material, as polymerase chain reaction (PCR) products were obtained from seven of the KPD individuals, and DNA sequence information from four KPD samples, the authenticity of the KPD ancient DNA remains equivocal. It is concluded that the importance of the potential information obtainable from ancient DNA research outweighs the difficulties involved, and means of improving the methodology, and authenticating any results are suggested for future applications of ancient DNA analysis to the KPD collection.

Sally SMITH. 1997. *Rather Badly Built: Gender and Nutrition in Protohistoric Polynesia*. BA (Hons) dissertation, Anthropology Department, University of Otago. 64 pp, 2 tables.

Many cultures in late prehistoric and protohistoric Polynesia placed dietary restrictions on women. These restrictions ranged from women being forbidden one or two items within the society's subsistence system, through to societies which forbade women consumption of virtually every high quality protein food available. This information comes mainly from early European observations and later ethnographers and presents a picture of many women in late prehistoric and

protohistoric Polynesia as consuming significantly less protein than their male counterparts.

Osteology is also a useful source from which to glean information about the overall health of a prehistoric population. However, when the osteology of Polynesian material is reviewed, a picture of good female health, reflected by many factors but especially by stature, is presented. The two data sets concerning women's nutritional status in late prehistoric and protohistoric Polynesia present us with two opposing pictures - an intriguing paradox.

I ask whether status systems in these societies could have unduly affected the conclusions presented about women, and I present two different explanations for the variation within Polynesia of the level of the dietary restrictions. One, following Mary Douglas, focuses on the contestation of gender relations within a society and the other, following Shore, is a more emic argument, utilising new theoretical research into the tapu concept. Two resolutions are attempted, one dealing with the visibility of protein-deprivation in skeletal material, and one suggesting an alternate source of protein that Polynesian women may have had access to.

This dissertation suggests a change in the way osteologists handle their reporting of nutritional adequacy. I then link these findings with those found elsewhere in the world, and with Douglas theory. Finally, I present my conclusions.

Graeme SOMERVILLE-RYAN. 1998. *The Taphonomy of a Marshall Islands' Shell Midden*. MA thesis, Anthropology Department, University of Otago. 153 pp, 36 figures.

Shellfish dominates the faunal material recovered from Pacific archaeological middens, yet little work has been conducted regarding the reasons for shell being present on a site. This has led to problems in separating natural and culturally-deposited shell from archaeological assemblages, especially from areas where coral gravel has traditionally been used to pave habitation areas.

Unless the depositional history of a site is known, some archaeological inferences can be erroneous. The goal of this thesis is to study the taphonomy of archaeological shell as well as shell from modern beach and village environments to identify the characteristics of natural and cultural material.

This research has shown that it is possible to use the taphonomic features of burning, water-rounding, the rebreakage of water-rounded shell, butchering, fragmentation, and the presence of whole shells to identify natural shell in a cultural assemblage. It is significant that some species, such as Turbinellidae and Cerithiidae, are almost always the product of cultural deposition and are ideal taxa for radiocarbon dating. Inferences regarding subsistence practices from these species provide a more accurate representation of prehistoric cultural activity. Future research should recognise that the quality of data differs between shellfish species and archaeologists should be mindful of this when undertaking subsistence studies and selecting shells for radiocarbon dating.

Michelle SULLIVAN. 1997. *Ceramic Makers' Marks from the Otago Settlers Museum*. BA (Hons) Anthropology Department, University of Otago. 50 pp, 5 figures, 7 tables, 2 appendices.

Ceramic vessels frequently have back marks — painted, printed or impressed marks on the reverse of the vessel. This research focuses on the makers' marks from the Colonial Cottage display at the Otago Settlers Museum. In comparison to archaeological sites, museum collections have larger, relatively complete assemblages, with the addition of written accession records. These collections are potentially ideal for reference material and data, providing means for comparison with archaeological sites as well as other museums. This research documents the range of ceramic manufacturers represented in the Colonial Cottage display, as well as those reported from historic sites from around New Zealand. A comparison is made of maker's marks recorded in the Colonial Cottage with those from various historic sites around New Zealand.

Vanessa TANNER. 1997. *Faunal Analysis at Martin's House, Hokianga*. BA (Hons) dissertation, Anthropology Department, University of Otago. 56 pp, 12 figures, 9 tables, 1 appendix.

An analysis of faunal material from the historic site of Martin's House, Omāpere, was conducted in order to ascertain the relative abundance and types of animals being utilised during the mid to late nineteenth century occupation of this site. The research involved a quantification of faunal remains from three excavated areas along with an analysis of taphonomic variables. An in depth study of butchering was conducted for one of the three assemblages, in order to determine the types of meat being consumed. An additional focus for the study was the presence or absence of evidence which suggested that pork was being

used as an export commodity by inhabitants during the mid nineteenth century. Although no evidence supported this contention the analysis proved valuable in that it provides information on the importance of three major mammalian fauna as food resources, and highlights a combination of processes that may have led to the formation of this site. The results also allow the interpretation of a possible change in subsistence towards the end of the nineteenth century.

Katharine WATSON. 1998. *Amorphous Lumps: The Metal Assemblage from Facile Harbour, Dusky Sound*. BA (Hons) dissertation, Anthropology Department, University of Otago. 91 pp, 20 figures, 4 tables.

Metal artefacts are invariably ignored during the analysis of historical assemblages in both New Zealand and abroad. It was not possible to simply forget about the metal objects recovered from Facile Harbour, Dusky Sound: they were the only class of remains recovered in significant quantities. A detailed analysis of these remains was undertaken, examining as many variables as possible for each category of artefact and drawing on historical information to aid interpretation. This successfully demonstrated the quantities of information that can be obtained from a metal assemblage. When subjected to a spatial analysis, these metal artefacts revealed the differential use of distinct areas of the site and thereby provided new information about the eighteenth century occupation of Facile Harbour.

Helen WIDDICOMBE. 1997. *The Cutting Edge: A Technological Study of Adzes from Ebon, Maloelap and Ujae Atolls, Marshall Islands*. MA thesis, Anthropology Department, University of Otago. 167 pp, 31 figures, 7 tables, 8 appendices.

The purpose of this thesis is to form a typology for a collection of Marshallese adzes and compare the differences between the collections from Ebon and Maloelap atolls.

The raw materials used fall into five groups: Adzes made out of the interior of the giant clam, *Tridacna gigas*, abbreviated TRI-INT, adzes made from the exterior of the elongate giant clam, *Tridacna maxima* (TRI-EXT), adzes made from the lip of the helmet shells (cassidae), adzes made from the body whorl of cassidae, conches (*Lambis* species) and cone shells (*Conus* species) and adzes made from the auger or turret shells (*Terebra maculata* or *Mitra mitt-a*). A series of metric and discrete attributes were recorded for each adze, and these were used to form the typology. Cross section, orientation of the bevel, and

shape of the bevel are the most useful features for defining types. Types can include more than one kind of raw material but the majority of types are made from one main raw material group.

There is no significant difference between the proportion of each adze type recovered from Ebon and Maloelap atolls, except that TRI-INT types are more common on Ebon. The only two *Terebra* adzes are also from Ebon and adzes made from the lip of the homed helmet shell, *Cassia cornuta*, are more common on Maloelap. There were too few adzes from Ujae to include this atoll in the regional comparison.

As the largest *Tridacna* species is not known from Maloelap it is not surprising that adzes made from *Tridacna gigas* are rare there. According to the species range of the bulls mouth helmet (*Cypraecassis rufa*) this species should not be found in the Marshall Islands, but it is so widespread that it must have been more common in the past than the modern geographic range indicates.

In conclusion, my typology presented in this thesis adequately classifies Marshallese adzes and there are no significant differences between the assemblages from Ebon and Maloelap Atolls. My classification of Marshallese shell adzes should have utility for other assemblages throughout the Pacific where shell adzes are found.

Chris WILLIAMS. 1998. *Marine Shell Exploitation in Prehistoric Su'ena: An Analysis of a Shell-bearing Midden Site*. BA (Hons) dissertation, Anthropology Department, University of Otago. 51 pp, 10 figures, 10 tables.

An analysis of a marine shell assemblage from Su'ena in the Southeast Solomon Islands is presented. Evidence for temporal change is investigated through the analysis of taxonomic abundance. Statistical measures indicate a decrease in shell taxa and abundance over time. Explanations for these results are considered in the light of cultural, ecological and taphonomic factors.

**Note:** Abstracts from theses and dissertations, 1999-2000, will be published in the September issue of *Archaeology in New Zealand*.