



NEW ZEALAND
ARCHAEOLOGICAL
ASSOCIATION

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION NEWSLETTER



This document is made available by The New Zealand Archaeological Association under the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

To view a copy of this license, visit
<http://creativecommons.org/licenses/by-nc-sa/4.0/>.

ABSTRACTS FROM THESES AND RESEARCH ESSAYS,
DEPARTMENT OF ANTHROPOLOGY, UNIVERSITY OF AUCKLAND, 1978

Dorothy Brown
Anthropology Department
University of Auckland

Abstracts from two theses and four research essays completed at the Department of Anthropology during the academic year 1978 are given below. These essays are held in the Department of Anthropology, University of Auckland where they may be consulted. Xerox copies may be made available at cost on an individual basis, subject to the usual restriction applying to theses, on the understanding that their use is for private research and not publication.

Thesis abstracts

Ian Lawlor, Palaeoenvironmental Analysis: Kohika Swamp Pa. Anthropology Department, Auckland University. Two page abstract, xiv, 120 pp., 21 plates, 26 figures, 11 tables, 4 maps, 9 appendices.

A series of four excavations have been undertaken at the Kohika Swamp Pa (N68/104), which is located in the western Rangitaiki Plains of the Bay of Plenty.

An appraisal of the site's prehistoric environment has been made through an examination of biophysical and social elements of the macro-environment of the Rangitaiki Plains area. Results, when considered in conjunction with archaeological evidence and contemporary swamp data, enable identification of four probable microenvironments, each of which possessed resources available for exploitation by the Kohika Maori; the inland swamp and lagoon system; the coastal marine estuary-river system; the coastal beach and low-lying dune scrub; and, the western steep-land hills.

The impact of natural forces and of the Maori upon the site environment, and the degree to which this impact influenced the lives of the Kohika inhabitants, has been assessed through sediment and plant analysis. Sediments have been characterised through an analysis of grain size distributions. The analysis of sediments located within the swamp has provided a base from which sediment associated with cultural material of the site has been examined. Macro-plant remains and seed material, identified within related stratigraphic sequences of peat, have been examined and related to palynological and wooden artefact studies of the Kohika material.

A synthesis of data suggests that the swamp, before the Kaharoa Eruption (890 ± 80 BP), was characterized by old dunes, resultant from coastal progradation, and by changing river systems and associated lagoons. The absence of any significant alluvial deposit below the Kaharoa Ash indicates not only a low degree of flooding, but also the relatively stable nature of vegetation cover within the swamp before the eruption. Seed analysis and associated pollen studies show that a low swamp forest was established around the site, with sedges, herbs and aquatics of a more water tolerant nature being present. Results indicate that the Maori may have been present in the catchment prior to the Kaharoa Eruption. The swamp environment after the Kaharoa Eruption was effected by the deposition of air-fall ash and alluvium. Diatoms within silts indicate shallow water lagoons in the swamp at this time. The pollen record indicates a drastic reduction in forest plants and increases in grasses and Pteridium. The Kohika site was occupied some time after the Kaharoa Eruption.

An examination of swamp stratigraphy and related sediments has shown that alluvium, derived from the Kaharoa Ash, washed into the Kohika Swamp. Two periods of significantly greater alluvial deposition may be identified. The Kohika inhabitants constructed an early occupation floor around the site margins during a period when less alluvium was being deposited, whereas later floors were constructed during times of greater alluvium inwash. Following alluvial deposition the number of aquatic emergent plants was reduced, and channels and streams became silted. Access to, and movement around the site would consequently be restricted and resources would have been destroyed. One may hypothesize that the site was abandoned at this time.

The environment of the Kohika site changed throughout and after the period of occupation. The environment familiar to the historic Maori and the early Europeans of the Bay of Plenty was unlike that known to the earliest Kohika inhabitants.

Reg Nichol, Fish and shellfish in New Zealand Prehistory: some ecological and economic approaches to midden analysis. Anthropology Department, Auckland University. One page abstract, 223 pp., 4 plates, 28 figures, 12 tables, 1 map, 8 appendices.

Some deductions about human ecology from midden material are considered. Estimates of seasonality from the relative frequencies of fish species are possible, but it is most unlikely that human selective practices can be described, and in general the simpler the approach the more likely it is that it will succeed. Energetics is a simple approach to ecology. Of the dietary requirements of coastal populations energy is more likely to be limiting than is protein. Energy is therefore suitable

for incorporation in economic analyses. Energetic efficiency is briefly considered, and an approach to the calculation of useful work is suggested.

Examples of the application of the concept of carrying capacity are discussed, particularly analyses relating to prehistoric New Zealand. Strategies for deriving useful information about human groups from the relationship among duration of occupation, population, dietary status and total food intake at a site, are discussed. Methods of calculating the duration of occupation of midden sites and of calculating the energy value indicated by midden material are discussed.

Procedures for quantifying faunal remains are discussed. Problems with maximising strategies are described, and an alternative approach is suggested. A method of identifying the import or export of parts of animals is described. It is concluded that midden material can be utilised in effective economic analyses but that the level of inference involved in most ecological approaches cannot be safely taken past what can be called simple natural history, and that all analyses - ecological or economic - depend on data that are currently unsatisfactory.

Research essay abstracts

Joanna Boileau, Wood from Kohika: a study of timber exploitation and woodworking technology. Anthropology Department, Auckland University. One page abstract, 99 pp., xvi, 17 plates, 12 figures, 11 tables, 1 appendix.

This essay describes the analysis of an assemblage of wooden artefacts excavated from the site of Kohika (N68/104) in the Bay of Plenty. The assemblage is described in detail and the items classified into broad artefact classes on the basis of their form and presumed function. The assemblage is comprised of a variety of implements relating to domestic activities, agriculture and fishing, the remains of dwellings and storage structures, and also woodworking debris. There are a few examples of decorative carving present; the stylistic affinities of these are noted.

In order to explore some of the ecological aspects of the data, the species used in the manufacture of a sample of artefacts from the assemblage are identified. This provides insights into the selection of timber for specific purposes, which correspond well to those gained from ethnographic literature on timber exploitation. The range of species identified also throws some light on the vegetation of the region during the period of occupation of the site. Study of the techniques used in the manufacture of individual artefacts in the assemblage provides

material evidence for the sophistication of Maori woodworking technology. Analysis of the sample of wood chips in the assemblage suggests that the woodworking activities carried out on the site included the fine finishing of planks and rectangular timbers.

Wendy J. Harsant, Unmodified shell tools: their use in prehistoric New Zealand. Anthropology Department, Auckland University. Two page abstract, ix, 181 pp., 20 plates, 9 figures, 10 tables, 6 appendices.

Molluscan shell was an abundant and readily available artefactual resource in prehistoric New Zealand and the rest of the Pacific. It was manufactured into a variety of artefacts such as fish-hooks and ornaments. There is sufficient ethnographic evidence which indicates that shells, in their unmodified state, were also used for a wide range of tasks. Yet, unmodified shell artefacts have rarely been identified from New Zealand archaeological sites. One of the reasons for this is that little is known about prehistoric shell utilisation and wear damage on shells.

This research essay, therefore, sets out to explore the possibility of defining the function of unmodified shell artefacts from their wear damage patterns. Towards this end, ethnographic and experimental research into the utilisation of unmodified shell tools was conducted.

Chapter One reviews the New Zealand ethnographic literature pertaining to the use of unmodified shells as tools. A brief discussion of the general approaches to microwear analysis is also presented. A series of replicative experiments involving the use of shells for ethnographically known tasks was carried out and the resultant wear damage analysed. Chapter Two presents the method and results of this research. Unmodified shell artefacts found in some New Zealand archaeological sites were then examined and using the experimental data as a basis for interpretation, the function of these shells was suggested. These results are discussed in Chapter Three.

Chapter Four contains the conclusions. It is suggested that archaeologists studying the prehistoric technology of New Zealand and other areas in the Pacific expand their research to include unmodified shell artefacts.

Margaret R. Sims, Brains and brawn: a study of the relationship between physical growth and intelligence in an Auckland secondary school. Anthropology Department, Auckland University. Two page abstract, 95 pp., 9 figures, 36 tables, 2 appendices.

The relationship between physical growth and intelligence is studied in a sample of Auckland High School pupils. Individuals in the study

underwent a medical examination and had hearing and vision tests. Final grades for 1974 and 1975 were collected along with ratings of behaviour in the classroom. Social data such as socioeconomic status, family size, country of origin and ethnicity were also collected. The measures of physical growth, height, weight, head circumference and a rating of pubertal development, were collected as part of the medical examination. These data were made available for analysis by courtesy of Professor David Lines and Doctors Theodore and Nancy Graves.

Two measures of achievement, the grades for English and Maths 1974 were taken to represent two subsets of intelligence, numerical/spatial abilities and verbal abilities. The Average Academic Performance Index for 1974 was taken to represent global or general intelligence.

The relationship between the physical measures and general intelligence is examined using regression techniques to obtain part correlations. Following this a causal model was designed containing interactions between the independent variables. Using this the relationship between each of the physical measures and the three chosen measures of achievement was re-examined.

It was found that each of the physical measures effected general intelligence and numerical/spatial abilities in a way that was expected from a perusal of the literature. The effect of the physical measures on verbal ability was in all cases quite different from the above. This leads to the conclusion that, in so far as they are effected by physical growth, general intelligence and numerical/spatial abilities are closely related, whereas verbal abilities are quite different. Two reasons are suggested to account for this.

The effects of ethnicity and socioeconomic status on achievement were found to vary along the scale of the variable. For example, being European was found to have a greater positive effect on achievement than being Polynesian. A higher socioeconomic grading was also found to have a greater positive effect on general intelligence and verbal abilities than a lower grading. However, socioeconomic class was found to be negatively related to numerical/spatial abilities. In other words, an increase in socioeconomic rating tends to be associated with a decrease in achievement. Reasons are put forward that may, in part, explain this phenomenon.

Anthony Walton, Maori Soils. Anthropology Department, Auckland University. One page abstract, 41 pp., 1 plate, 15 figures, 1 table.

Maori soils have a man-made surface layer that has been produced by the deliberate addition to the spoil of sand or gravelly sand. This essay is concerned with how these soils were formed, where, when and why.

Maori soils at Aotea Harbour on the Waikato west coast were formed, not by the addition of gravelly sand as elsewhere in the Waikato, but by the addition of fine sand. Pits were excavated into old, tephra-covered sand ridges and dunes to secure this sand. The soils in this area probably developed late in the prehistoric sequence. Borrow pits and Maori soils are found in South Taranaki in geomorphological situations that closely parallel those at Aotea.

Factors that led to the use of this method of gardening remain poorly understood.