



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/>.

Later we noted a short 40ft drive into the side of a spur just off the road to the west, about two miles south of the Paekakariki summit. Why a drive was put there is hard to imagine; there are no quartz outcrops within the immediate vicinity, and the drive itself passes through a very wet, weathered greywacke. Perhaps one reason for such an unlikely spot is the same for which a drive at Cape Terawhiti was dug in the 1880's. There, the find of an isolated gold nugget or piece of gold-bearing quartz, resulted in a drive in the hopes of a bigger find. Whatever the reason, the drive remains today, half full of water, with a partially collapsed entrance but otherwise reasonably intact.

Pauatahamui:

A further mine is situated on the north shore of the inner Porirua harbour. Here is a shaft full of water and rubbish near a prominent quartz outcrop, and intersected by a short forty to fifty feet drive. Just who was responsible for this mine is not known. It could be attributed to the Telegraph or Mount Welcome companies, or to the West Coast Gold Prospecting Company, also active in this area about the same time.

The final gold find at Pauatahamui was caused by a drake in 1870, and no doubt added incentive to the local prospectors for a day or two. Early that year a Mr Thomas Gilbert wondered why his drake had died, and upon examining its gizzard, found there enclosed one gold nugget!

SOURCES:

Lands and Survey Dept. Plan W.D.1168

National Archives. Letter IA 1/294 69/2114

Wellington Independent (newspaper). 4 April 1862; 15 July 1869;
28 Oct. 1869; 12 Feb. 1870.

Wellington Provincial Gazette, 1869 pp.154, 157, 167.

SHELL DUMP SAMPLING

W. Ambrose

Recently an article appeared in this Newsletter which set out the procedure a group had adopted to deal with the problem of midden analysis. (Smart 1962:160). Work on a series of samples from the Kauri Point site (N53/5) has prompted the following short note which, it is hoped, will outline another possible approach to this vitally important question of midden sampling. At the outset it will be as well to point out that the midden sampling carried out at Kauri Point, though dealing with deposits differing in nature and extent, was no more or less systematic than Smart's work at Waikanae. At Kauri Point, simple species collections and the more important quantitative samples were gathered. It is with the

question of processing these quantitative samples that this note is mainly concerned.

The primary objective of the Waikanae survey was to "devise a method for carrying out midden sampling ... which could be applied by the New Zealand archaeologist who is still predominantly a non-professional and 'spare-time' worker". The second objective was to validate the first by giving it some aim through attempting to investigate "the change in dietary preference, or dietary change due to other factors". (Smart 1962:161). Had this second validating aim been pursued as the primary one, so that sampling techniques were adapted and subservient to it, a different procedure may well have been adopted at all stages of sampling and analysis.

It is difficult to conceive of one random sampling technique which would be applicable to all shell middens when these assume so many different sizes, shapes, positions, functions and mechanical sortings. It is often difficult to be sure what number of smaller coalesced dumps the midden has, or what period of time these represent, and whether it is wholly intact or not. Ideally, any of these problems will only be answered when the midden heaps themselves are looked at as composite units. The range of information which middens might yield about their structure and constitution must be partly limited by the method employed to gather this information. For example, an analysis could be very misleading if only two localised samples were gathered from a composite midden built of several parts over time, if the aim of the analysis was to describe the structure of the midden itself. Looked at another way, it might also be asked if any samples themselves can have much validity as representative bits of the whole, unless they are related in some way to the rest of the structure from which they derive. So far, the analysis of middens as formal entities, capable of structural analysis in their own right, is a problem which has not received attention in New Zealand archaeological work. It could be claimed that methods are lacking for this sort of approach, but there is no doubt that the methods will be formulated when the problem is confronted.

The other, more informative aspect of the midden, which has received attention in the Waikanae survey and elsewhere, revolves about the analysis of variations between samples for correlations of ecological and cultural significance. Since this involves constant evaluation and comparison between samples, the two basic requirements would appear to be firstly, a means for showing this variation within samples, and secondly, a rigorously assembled control sample or series of samples. This has been clearly pointed out by Riddick (1962:5) who shows the absolute necessity for control samples when differences and similarities between samples are given cultural and environmental evaluations. At the level of superficial recording this is of course unnecessary, but at Waikanae it is surprising that the aim of investigating change due to dietary preference or other factors has not been accompanied by any mention of the collection or desirability of control samples.

The many ways in which a shell sample may be described indicates the need for careful selection of both the factors which are to be quantified, and the means for expressing these quantities. At any time, the choice of

factors, and the means for expressing them, will be guided by the aims of the analysis. In other words, the type of data which the analysis yields, must be relevant to the objective of the study. Questions of dietary change would seem to necessitate an analysis of a) midden constitution for b) variation over time. From the Newsletter report it would appear that neither a) nor b) has received methodological treatment consistent with the aim of the study. Leaving aside the question of the validity of the sampling procedure employed (whether the structurally complex and diverse midden deposits can be adequately sampled in the manner described), there still remains the question of whether the samples themselves have been processed in a manner likely to yield the information that the analysis seeks.

In this instance, three sieves of $\frac{1}{2}$ " , $\frac{1}{4}$ " and one eighth inch mesh were used to sort each sample into four size groups, from which shell species were sorted and recorded according to the size groups from which they came. Each of these groups was weighed separately, and the totals for each species were found from adding the weights of all size groups. It appears that this three-fold sieving operation acted simply as an aid to mechanical sorting of the shell into groups according to species. From these groups the percentage representation of each species within the sample was calculated. Percentages by weight seem to have formed the basis for any further calculations directed toward the idea of dietary change.

Our work on the shell midden samples from the Kauri Point site has convinced us that simple species percentages by weight alone gives insufficient reliability to any conclusions about dietary preference. Also, the change involving two factors, selection by man within the range of shellfish available, suggests that a more subtle measure for discriminating shell sample differences is called for. For instance, if the ratios by weight alone between gastropods and bivalves were shown to shift over time toward an increasing percentage of bivalves, it might be assumed that this was a result of cultural preference or environmental change favouring bivalves, or perhaps a combination of both these factors. Consider however, that an individual count of all shells had shown that the gastropod-bivalve ratios were fairly stable over time, but that there had been a relative diminution in average weight of gastropods. The conclusion in this case might be that either: the relative preference for gastropods was constant (or even increasing, since their decreasing relative food value has not been matched by a lessening of effort in gathering them), or again; that there had been some environmental cause for this gastropod-bivalve differential. If, as well as weight of species groups and count of individuals, there was added a third measure, giving the size of each individual shell there could be a further possibility of finer discrimination between samples and thus more reliability in determining whether cultural or environmental factors are responsible for the observed differences.

From individual shell measurement a picture of the shell population structure could be drawn for giving finer comparison between samples generally including present-day control samples. In our example it might be possible to show whether the diminution in gastropod size was a total population tendency which would suggest that this was a reflection of deteriorating growing conditions, or whether the size reduction was only apparent, it in fact being selective, with an abbreviated population at the

older age levels, which would suggest that the shells had been gathered before they could reach maturity. If this same measuring procedure were applied to the rest of the shell sample, then more reliable conclusions might be expected than from simple species weights alone. The observation of changes in total population range would seem necessary for deciding whether the differences between samples are indicative of cultural or environmental causes.

Finer control at the level of sample analysis demands equal precision in selecting and gathering these samples. Since most New Zealand middens are, by their very nature, the concentrated remains of selected materials gathered from various corners of the local environment, they are likely to reflect this in their genesis and growth. Midden deposits are likely to be extremely complex in both a structural and a compositional sense. Perhaps they cannot be seen as homogeneous mounds, for the various smaller deposits which constitute them, are themselves small selected faunal assemblages. These may be dumped on the growing mound in a number of ways, at various times, at various seasons, after various activities, by various social units of varying size. It may be expected that the midden at any one time will be the repository of only a segment of the total possible faunal range, and that this segment itself may be represented by different species proportions from time to time. Satisfactory methods for dealing with middens as structures are sadly lacking, yet without such structural description, a whole slab of fascinating cultural information lies undefined, and the potential value of finer sample analyses is reduced.

Though minute structural complexity can be acknowledged, this should not deter consideration of a midden in toto as a dump of surviving refuse, representing a fair sample of the local environment at a particular point in time, provided always, that it is possible to show that the mound is the result of one deposition cycle. It will still remain necessary therefore, to consider the midden as a structure, but in the broader sense as a multiple, or single-cycle deposit. Samples will testify to broad midden structure if they have been selected, either from areas of a midden already clearly differentiated into depositional compartments in a natural stratigraphic sense, or, where clear visual evidence is lacking, in sufficient number and distribution to embrace the complete dump. In both cases it would seem necessary to sample in depth, as well as extent, either by systematic excavation or judicious core sampling. It will of course be necessary for sample analysis to verify the midden structure, whether broad depositional breaks are visible or not, so that in any case, structural delineation and sample analysis seem mutually inseparable, except as procedural concepts.

The foregoing considerations may seriously deter all but the most enthusiastic "spare time workers" from embarking on midden analysis for whatever purpose, yet unless this analysis is carried out with the utmost rigour any results are likely to remain open to question. If this paper appears to emphasise the complexities of midden analysis, it may at least serve to correct any impression that this is a simple procedure.

The Waikanae survey has pointed to some valuable methods for the organisation of recording, plotting and description of middens, in a topo-

graphic sense. This work is a necessary adjunct to any closer midden analysis, and is in itself an independent field activity falling naturally into the field recording scheme. Whether the aim to "devise a method for carrying out midden sampling" (Smart 1962:160) has been successful or not, will of course depend on whether the method outlined here can be adopted and used to some purpose.

REFERENCE:

- Smart, C.D. Midden recording and sampling in the Waikanae region.
N.Z.A.A. Newsletter 5:160-169 (Sept '62)
Riddick [Reference not supplied. Ed.]

COMMENTS ON
"EXCAVATIONS AT SOUTH BAY, KAIKOURA"
S49/43

R.J. Scarlett

I had a happy fortnight at South Bay excavating with Tony Fomison, and thought, from field discussions, that we had reached a general agreement in our interpretation of the site. I was away when Tony prepared his paper (Newsletter 6:100-102 June 1963), and it was a considerable surprise to find that his interpretation is now so widely different from my own.

Tony Fomison was officially in charge of the dig, and is of course, entitled to his views, but his interpretation, particularly of the "moa-hunter" phase, is based on such slender evidence, at the present state of our excavations, that I must set forth my own views on the site.

The Oven on the Old Raised Beach:

This is the only evidence we have for any association with the moa-hunter period at South Bay. For all evidence to the contrary, in the limited area excavated (the square on either side of that containing the oven, only contained remains of the old limestone rubble beach at the oven level) it could well have been used by a coasting party camping for the night. There is certainly nothing to suggest a settlement phase of occupation. The bone in the oven is almost certainly *Euryapteryx gravis*.

The Deeper Deposit at Point Two:

The artifacts (and there were many) from this part of the site are all "Classic" Maori in type, although the depth of the deposit, over 2ft 6ins, probably indicates some considerable period of occupation. There is nothing that can be considered "moa-hunter". Even the few broken pieces of one-piece fish hooks, which were scattered at various levels, are of "Classic" type.