



NEW ZEALAND  
ARCHAEOLOGICAL  
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**NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION NEWSLETTER**



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In terms of the archaeology of the site:

- (a) layer 1 is the "natural", the base of man's occupation of the site;
- (b) layer 2 is the composite sandy and gritty formation, which seals in the structures of period 1 and on which the structure of period 2 are built;
- (c) layer 4 represents the activity of period 3; since in its eastward extension it overlies the outer bank of the pa;
- (d) the status of layer 3 is uncertain, because of its discontinuity: it could belong, with layer 2, to the interval between periods 1 and 2, or alternatively to that between periods 2 and 3.

As archaeologists we wanted to know:

- (a) the nature of layer 2 and its formation.
- (b) the relationship of the various elements described by Mr. Schofield as layer 2 to each other and to the underlying strata.

The views expressed by our contributors below are not always in agreement, but in agreement or not, nothing they say conflicts with the major conclusions about the history of the site reached on archaeological grounds. What their contributions have done is to illuminate some of the processes of strata building at work between and after the major periods of structural activity with whose investigation the archaeologist has in the main been concerned.

#### A. Geological Notes, Kauri Point Excavations, Katikati

by J.C. Schofield

I have been asked by Mr. Golson to give (a) a brief description of the geological setting at the Kauri Point pa site and (b) to describe and interpret selected parts of the excavations.

#### Geological Setting

The excavations are situated on two of three small hills which in form appear to be old cemented dunes, further evidence being cemented, pumiceous dune sands exposed along the nearby cliffs. These dunes are mantled by ash showers older than the Taupo Showers. There may be two series of ash showers present. The youngest consist of creamy-coloured, weathered pumice silts, sandy at base. These are thought to be the

Waihi Showers. The oldest consist of red-brown clays which could be very weathered pumice ash or very weathered cemented dune sand-insufficient of the material is exposed to be certain.

The "natural", base, or subsoil within the excavations consists mainly of the Waihi Showers, with the underlying red-brown clays being rarely reached. Underlying, unweathered, cemented dune sands nowhere forms part of the "natural".

#### Description and Interpretation of a Selected Section: L26

In describing a section there are two important aspects to be considered, namely adequate descriptions of firstly each layer, and secondly, contacts between layers. Descriptions of the latter appear to be often neglected. A knowledge of all the different types of sedimentary structures likely to be encountered is also necessary otherwise many features may be missed or inadequately described. Thus at least a working knowledge of archaeological, soil, biologically derived and sedimentary structures is required.

Although I spent some time at the excavations it was not with the purpose of elucidating the local events. Rather, as archaeological site interpretation was a new problem to me, my approach was to treat the sections with some circumspection and try to work out a basis of attack. The result has been a tentative description of most of the sedimentary structures likely to be encountered in man-associated sediments<sup>(1)</sup> - man-associated sediments being defined as those formed directly or indirectly as a result of man's occupation. Having reached this far a further visit to the site was made when the following descriptions are some of the details observed.

Many of the thicknesses given are approximate only. Except for soils, thicknesses are rarely important in the interpretation of archaeological stratigraphy and have in any case been precisely measured by the archaeologists.

#### Ground surface

Layer 4:- Black soil, shelly, 6in. thick — consists of three parts.

Part 4.3, top of layer 4. Black soil, sandy, free of shell, no  
mottling     ...     ...     ...     ...     ...     2½ ins.

#### Sharp contact

Part 4.2, Shell concentrated in black soily matrix ...     ...     1in.

Contact sometimes gradational, sometimes sharp

Part 4.1, Shelly, black soil, shell less concentrated than in 4.2 but still being at least 50% of the content. As in 4.2 shells are mainly fragmentary with flat surfaces parallel to ground-surface. Some mottling present due to worm activity ... .. 2½in.

Interpretation:- Soil horizon A, originally shelly throughout, the shell from 4.3 being concentrated in 4.2 by worm activity. (Mixing of 4.3 and 4.2 would give a shell concentration similar to that in 4.1). With time 4.3 may increase in thickness but in forming 4.2 the worms could have formed a barrier to further concentrated activity at lower levels. The high percentage of shell present shows that the thickness of this A horizon is not necessarily a function of time for much of the organic material present could be man-derived rather than being naturally derived from vegetation following man's exodus. The origin of this thin persistent, very shelly layer is problematical. In internal structure it appears to be a midden. If so its external form shows that it has been disturbed and flattened. Additional evidence for the latter postulate lies in the fragmentary condition of the shell material. Shells within obvious middens remain whole almost without exception. The methods of European farming are obviously relevant here.

Contact 4/3:- not described.

Layer 3:- not described.

Contact 4/2:- (i.e. contact between layers 4 and 2, layer 3 having petered out). Disturbed by worm activity down to a depth of three inches into layer 2.

Layer 2:-

Part 2.3:- Structureless, light-grey-brown, sandy, friable silt with a little amount of charcoal and fragmentary shell scattered throughout. The shell fragments show no preferred orientation. When moistened and rubbed some of the matrix shows up as a dark brown-black ?organic clay ... .. 9-10ins.

Sharp contact partly disturbed by worm burrows  
(½in. wide and extending 1½ins. up into 2.3)

Part 2.2:- Thin, discrete, horizontal lens, several feet long, of fire ash and carbon. No hangi stones or hangi structure present  
... .. 1-2ins.

Sharp contact partly disturbed by worm burrows  
(½in. wide and extending 1½ins. down into 2.1)

Part 2.1:- Same as 2.3 except it is less sandy and shell fragments are not so persistent ... .. about 12ins.

Contact 2.3/2.1:- Diffuse and shown only by increase in sand within 2.3

Interpretation:- There appears to be an absence of soil structures. Top-soil earthworm species (shown by diameter of burrows) may have been active throughout the deposition of layer 2 — their activity being shown only in advantageous positions i.e. at the contacts of 2.3/2.2 and 2.2/2.1 where the carbon from 2.2 has coloured the burrow linings. These probabilities together with its lateral persistence, presence of charcoal and shell, the fine brown-black clay, and an absence of structure normally associated with spoil heaps etc., show that layer 2 is some type of habitation layer. Could it have been an old garden site where selected organic trash was dug in, including inadvertently a little shell? The sand may have been obtained from house sweepings or deliberately added to improve the soil (cf. use of gravel for kumara gardens; in the absence of nearby gravel, sand may have been used instead). Points in favour are:

- (a) Although light grey in colour when dry, the clay matrix is dark brown-black in colour and appears to have an organic origin.
- (b) The area in which layer (2) is found is a large flat area within a hollow between the two hills.
- (c) The scattered shells have no definite orientation as would be expected if the layer was built up slowly without subsequent disturbances by digging.

However, the undisturbed nature of the fire-ash, 2.2, and its coincidence with a change to more sandy material, 2.3 needs explaining. Perhaps the lighting of fires on the garden patch was common practice, the ash being subsequently dug in and thus mixed in to form part of 2.1. Perhaps at the time 2.2 was formed it was decided that the garden soil required replenishing and several inches or all of 2.3 was spread over 2.1 and 2.2.

Providing layer 2 does in fact represent a garden site, 2.2 must have been buried deeply enough to escape subsequent digging. But this requires that the lower part of 2.3 must also have escaped being dug over but I have no record of any structural differences between the lower and upper parts of 2.3. Perhaps there are subtle differences that have not been recorded. Why also does not the lower part of 2.3 show some sign of "pocket and fill" bedding associated with undisturbed deposits of spoil? Could it be that the material selected for a garden site remained consistent in lithology and that it was spread as sheets rather than dumped which gives rise to the "pocket and fill" bedding.

Contact 1/2 not described

Layer 1:- not described.

"Natural"