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SAYING SO DOESN'T MAKE IT SO

PAPERS IN HONOUR OF B. FOSS LEACH

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The Lithic Assemblage from the Headland Pa at Kauri Point, Birkenhead, Auckland

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INTRODUCTION

In 1971, test excavations on the headland pa at Kauri Point, Birkenhead, were undertaken by Janet Davidson for the Auckland Institute and Museum. The aim was to establish the significance of the site for its owners, the Auckland Harbour Board. For a full report on the excavations, refer to Davidson (ms). In this paper, the lithic collection obtained from the exploratory excavations is described and sources are suggested.

The site, N42/27 (R11/35), is located on the North Shore of Waitemata Harbour at Birkenhead. The pa was constructed on a cliffed promontory which juts out from Kauri Point, forming the eastern boundary of Kendall Bay. It has commanding views up and down the harbour channel. Steep cliffs and slopes provide excellent natural defences, intensified by two artificial ditches cut into the narrow leading ridge running on to the site.

THE GEOLOGICAL SETTING

The Waitemata Harbour is a drowned late Pleistocene valley. The promontory occupied by the pa is a relief ridge which has had its soft substrate eroded to form the present steep cliffs. This underlying rock comprises interbedded graded sandstone and mudstone flysch of the Waitemata Group (Ballance 1976). Wide areas of the North Shore and adjacent Auckland are underlain by Waitemata Group rocks. In terms of human need, the immediate 'catchment' of N42/27 was not lithologically rich, and the soils developed on the sandstone beneath Kauri forest were poor.

THE LITHIC ASSEMBLAGE

The collection derives from four test areas dug in the interior of the pa, designated A to D (Davidson ms). The lithologies occurring are summarised in Tables 1 and 2 and sources are discussed below. To date the rock types in the assemblage have been identified in hand specimen only. The small amount of obsidian recovered was not included in the analysis. It is described by Davidson (ms).

TABLE 1
LITHOLOGIES (OTHER THAN OBSIDIAN) IDENTIFIED FROM KAURI POINT

	Area A	Area B	Area C	Area D
Basalt	6	19	10	
Sandstone	7	19	2	
Scoria	2	6	26	
Greywacke	1	19	3	
Metagreywacke		2		
Mudstone		1		
Meta-argillite		6		
Andesite		3		
Iron deposit		2		
Kokowai		1	1	
Chert		35	6	
Argillite			1	
Kauri gum			1	
Concretion			2	

AREA A

This clearly artificial terrace yielded relatively little stone. Basalt from the Auckland field was found in the form of one piece of symmetrically shaped, water worn cobble showing slight battering on one surface, subsequently used as a hangi stone (Figure 1b), and a smaller hangi stone piece.

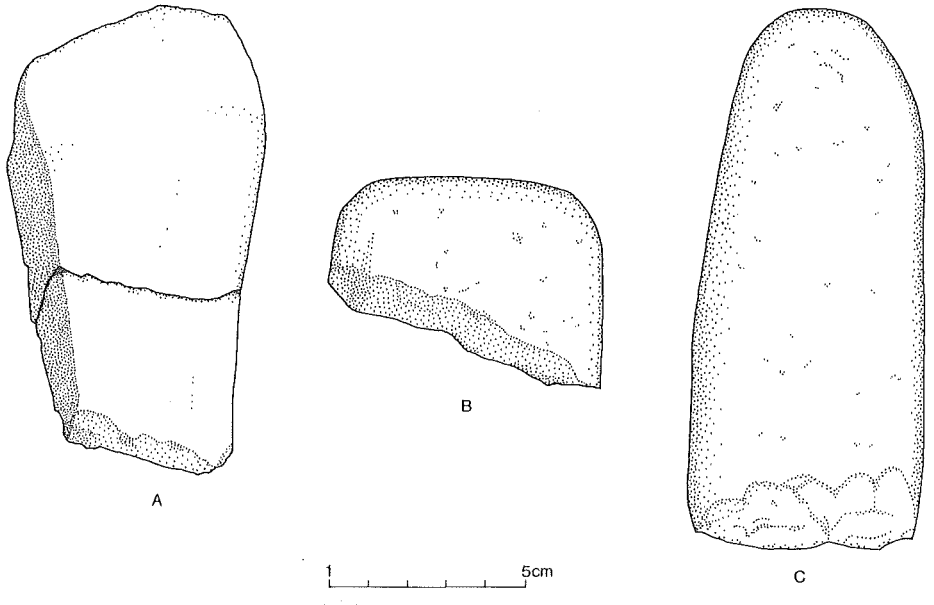

Figure 1: Stone artefacts from Kauri Point. A: sandstone abrader, Area B. B: battered cobble, Area A. C: worked cobble, Area B.

A basalt pebble from the Albany Conglomerate had been used as a hammerstone. Two spalls struck from Albany Conglomerate pebbles were found, and a fourth piece was hangi material.

One large and one small piece of scoria showed no modification but may have been collected as potential building or hangi material.

Seven pieces of sandstone seemed unmodified but one had reddened as a result of heat contact.

The greywacke is a fractured piece of water worn pebble.

A single chip of obsidian was found in this area.

AREA B

This area yielded the greatest number and variety of stone materials, though the surfaces on which they lay were not as clearly artificial as the terrace of Area A. Postholes, the presence of scoop depressions, a collection of hangi stones, flakes, abraders and worked pieces suggest it was an area where members of the occupying group had gathered to work at artefact manufacture and repair, in association with some form of structure.

Basalts occurred in two forms. The first is a very dark variety of which there were four pieces: a large dark flake with water worn cortex and three small heat shattered pieces, presumably gathered from a nearby shore.

The second is the Albany Conglomerate variety. Most of the 15 pieces were in fragmentary form, being manufacturing debris or the result of heat shattering. But one was a well formed flake of fine basalt and another an elongated heavy cobble, 14 × 5.8 cm, with a reduced end (Figure 1c). The function of the cobble seems ambiguous. Removal of flakes from one end and light pecking on the other may indicate an intention to reduce the cobble to an adze, or it may simply have been used to produce flakes and as a hammerstone.

Scoria of a dense form had been used as hangi stones (two pieces) and four further heat shattered fragments occurred nearby.

Andesite from an Albany Conglomerate cobble had been used for flakes. One was large with modified edges while the two smaller waste flakes still had visible water worn surfaces.

Other Albany Conglomerate components were: a very large flake of meta-argillite with a good subconcoidal fracture and edge damage, and one surface showing clear striations produced by grinding and conspicuous reddening from heat exposure; a well defined but unused flake and four shattered hangi stones, all of meta-argillite; and two fragments of metagreywacke.

Area B yielded 35 chert pieces. All appear to have undergone subjection to heat and many are brittle and fractured. All but two are waste flakes. The five designated Coromandel cherts are fine, chalcedonic and cream with a yellow cortex. The other 30, tentatively called Waiheke Group cherts, consisted of: 2 dull yellow flakes (1 edge-damaged), 20 red pieces belonging to one fragmented pebble, 6 pinkish pieces with a brick red cortex, 1 grey piece with edge damage, and 1 red and blue-grey piece with a water worn cortex.

Greywacke featured prominently. It included 1 large piece with a knapped area, 1 small spall with a ground edge, 12 flakes (of which 1 was well defined with extensive edge damage), 4 heat shattered fragments, and 1 complete water worn pebble. Most pieces bore some water worn cortex.

An abundance of sandstone pieces with abraded surfaces strengthens the concept of Area B being a workshop site. The largest is of a fine sandstone, found in two pieces which fit

together (Figure 1a). This *hoanga* has three ground faces, slightly concave, measuring 12 × 4–6 cm. The concavity suggests use for finishing and sharpening small adzes. Heat contact has reddened the broad grinding surface and may have been the cause of breakage. Other *hoanga* have similarly collapsed from heat exposure. In the extension to square 1 in Area B, 12 fragments found are likely to have formed a single block. Four pieces have abraded surfaces. One is large with a very smooth surface and marked groove, possibly for finishing hooks, lures, or other fine articles of wood or bone. Two further *hoanga* fragments, fine grained and soft with finely abraded surfaces, were recovered along with two unmodified burnt pieces.

The sandstones described above are all of local derivation. But one piece, unlike them in its very pale colour and extremely fine texture, was found in an unburnt condition. It had a surface displaying fine grinding with superimposed coarser striations, suggesting use as an adze abrader.

A piece of iron deposit and an elliptical mudstone pebble were present but appear unmodified. One small nodule of kokowai was found.

All but one of the 19 pieces of obsidian recovered were from Area B (Davidson ms). Of particular interest are three tiny water worn pebbles.

AREA C

The stone materials from Area C were found within layer 3, a thin deposit of shell midden mixed with soil on sloping ground. Nine pieces of basalt of Albany Conglomerate derivation were present, seven being fragments of weathered cobbles shattered by heat, and two spalls with ground edges. The single piece of Auckland Field basalt was a heat shattered hangi stone with a water rolled surface.

All but one of the 26 scoria pieces were hangi stones, the other being a lump from the fill of a deep posthole.

Three pieces of fine greywacke with water rolled surfaces were unmodified waste flakes, probably from the same cobble.

The cherts were all similar, four being a brick red and cream colour with some cortex, possibly part of the same heat shattered pebble, and two of poor quality, speckled red and white with water rolled surfaces, also heat altered.

The two sandstone pieces were fragmentary, as was a single piece of heat fractured argillite.

The single piece of kokowai was small.

AREA D

Area D, on the highest part of the site, revealed three postholes but little stone material. One piece of kauri gum seemed unused. Two pieces of concretion, which fit together, were pitted in a manner indicating battering or hammering and had one abraded surface.

LITHOLOGY AND SOURCES

The broad lithological categories identified in the assemblage are listed in Table 1. Table 2 lists the suggested sources, and Figure 2 indicates the generalised source areas.

TABLE 2
SUGGESTED SOURCES FOR LITHOLOGIES FROM KAURI POINT

Lithology	Suggested source	number of pieces
AREA A		
Basalt	Auckland Volcanic Field	2
Basalt	Albany Conglomerate	4
Scoria	Auckland Volcanic Field	2
Sandstone	local, Waitemata Group	7
Greywacke	Waiheke Group	1
Obsidian	Gt Barrier/Coromandel/Mayor Is	1
AREA B		
Basalt	Auckland Volcanic Field	4
Basalt	Albany Conglomerate	15
Scoria	Auckland Volcanic Field	6
Andesite	Albany Conglomerate	3
Metagreywacke	Albany Conglomerate	2
Meta-argillite	Albany Conglomerate	6
Chert	Coromandel	5
Chert	Waiheke Group	30
Greywacke	Waiheke Group	19
Sandstone	Waitemata Group	18
Sandstone	South Auckland, ?Wainui Siltstone	1
Mudstone	local, Waitemata Group	1
Iron deposit	local, Waitemata Group	1
Kokowai	local, Waitemata Group	1
Obsidian	Gt Barrier/Coromandel/Mayor Is.	19
AREA C		
Basalt	Albany Conglomerate	9
Basalt	Auckland Volcanic Field	1
Scoria	Auckland Volcanic Field	26
Greywacke	Waiheke Group	3
Chert	Waiheke Group	6
Sandstone	local, Waitemata Group	2
Argillite	Waiheke Group	1
Kokowai	local, Waiheke Group	1
AREA D		
Kauri gum	local	1
Concretion	local, Waitemata Group	2

The obsidian, not yet sourced, contained both green and grey pieces in transmitted light, but more grey (Davidson, pers. comm.). The region which includes Great Barrier, Coromandel, and Mayor Island is assumed to be the likely area of origin.

The basalts are of two types. The most commonly used was a medium grained variety, which arrived at the site in the form of well worn and rounded or elliptically shaped pebbles. The largest was 14 cm long with a 5.8 cm diameter. This material is distinguishable in hand specimen from the other basalts in that the smoothed and weathered surfaces revealed many small interlocking feldspar lathes, similar to those seen in gabbro adzes (Best 1976: 67) and diorites. Although related to those rocks, the material from Kauri Point is considered too dark and fine to be classified with them, and has been termed basalt (Fred Brook, pers. comm.).

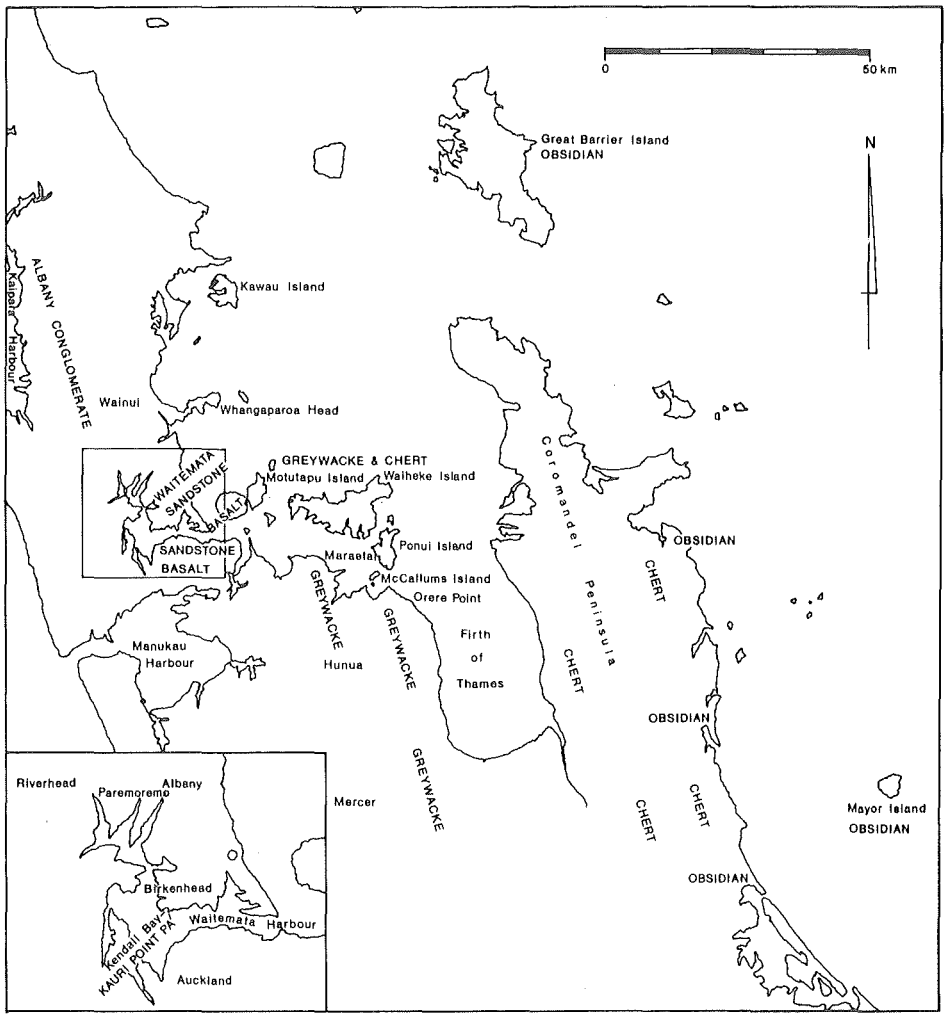

Figure 2: Probable sources for the Kauri Point lithic assemblage.

Their origin has been tentatively ascribed to the Albany Conglomerate where identical hand specimen material has been collected (Dante Bonica, pers. comm.) and diorite and other lithologies described (Bunting 1970). Although Albany Conglomerate has a scattered distribution stretching from the head of the Waitemata Harbour to the Kaipara Harbour (Ballance and Schofield 1983: 73), the most likely gathering places for Waitemata Harbour dwellers would be where streams and erosion have exposed the pebbles and stripped them of the matrix. Examples are the Riverhead, Paremoremo, Albany areas. The shores of the Upper Waitemata, less silted than they are today, would have been the closest spot for the Kauri Point people.

The second basalt variety, very dark in hand specimen, is seen occurring in chunks around the base of the cliffs at Kauri Point and on other shore areas north and south of the point. They are likely to be the result of natural deposition along the shoreline of the Waitemata Harbour, being derivatives of the Auckland Field Basalts (Schofield 1967). The pieces

found archaeologically had water worn surfaces suggesting acquisition from the harbour shore.

Scoria, a vesicular basalt, is also associated with the Auckland Basalts, and that found on the site is likely to derive from them; again from the local shoreline.

The andesite pieces were part of a large pebble with smoother, water worn surfaces. Andesite is a component of the Albany Conglomerate pebble suite (Bunting 1970) as are the meta-argillites and metagreywackes.

The Waiheke Group rocks of Auckland are composed of greywackes and argillites of Jurassic age and contain numerous chert lenses. These rocks are the likely sources of the greywackes, an argillite piece, and some of the reddish, poor quality cherts in the assemblage. The Waiheke Group has a wide distribution, occurring on Kawau, Motutapu, Waiheke, Ponui and McCallum's Island, the coastal region between Maraetai and Orere Point and back into the Hunua Ranges (Schofield 1967).

Although theoretically the greywackes in the site might derive from anywhere in that area, there is to date only one recorded locality of obvious greywacke exploitation. This is at shore level on Motutapu Island, where an often highly siliceous, greenish grey, good flaking quality material has been worked (Davidson 1981). Hand specimen comparison of the greywackes from Kauri Point and samples from Motutapu show similarities. The Albany Conglomerates contain metagreywackes (Bunting 1970) and may be an alternative source.

The Waiheke Group cherts are likely to have been exploited in conjunction with the greywackes. There is a known occurrence at Administration Bay, Motutapu Island, for example (Moore 1977: 82). But a complication in pinpointing the source of Kauri Point's poor quality pieces is that the Onerahi Chaos Breccia, which interbeds with the Albany Conglomerate (Ballance and Schofield 1983: 64; Schofield 1967) may also contain reddish chert (Moore 1977: 59). Clearly, much analysis of collections from the field for comparative purposes is required.

The Beeson's Islands Volcanics and Whitianga Group rocks of the Coromandel Peninsula are the suggested source area of the higher quality chalcedonic chert pieces.

In hand specimen, the fine textured sandstones correspond with the Waitemata Group sandstones which underly Kauri Point and are widespread on the northern and southern sides of Waitemata Harbour. The one pale very fine grain sized piece seemed not to belong. A south Auckland source, the Mercer Sandstone, has been suggested (Smith, pers. comm.) or perhaps the Wainui Siltstone, north of Dairy Flat, not far from Albany Conglomerate.

The mudstone piece belongs to the local Waitemata Group rocks, as does the iron deposit, burning of which is likely to have produced the kokowai.

DISCUSSION

The stone assemblage from Kauri Point, Birkenhead, is small and lacks a wide lithological variety, but it has illuminated several important aspects of life on this North Shore Pa. Because archaeological excavations on the North Shore have been scant and no previous work has been done on stone material from them, the Kauri Point rocks provide a nucleus of information which can be built on.

Despite the commanding position of the pa and the effort expended on throwing up the defensive ditches, the occupation span appears to have been short. The apparent absence of storage pits suggests that gardening on a large scale was not practised in the vicinity,

probably because of the unyielding texture and low fertility of the soils developed on the Waitemata Group sandstones.

Neither did these sandstones provide much potential for geological resources. The sandstone of a fine grain size from around the site was employed in grinding, and iron deposit had been used in a minor way to provide kokowai. But a major difficulty was the lack of suitable hangi stones. It was necessary to import or gather these from some distance as, for some reason, basalt from the Albany Conglomerates was favoured above basalt from the Auckland Field. The older, water worn Conglomerate pebbles probably had superior heat-retaining qualities. Their closest occurrence is the upper harbour reaches around Riverhead. Access to supplies of heavier Auckland Field basalts may have been denied through political alienation from neighbouring groups.

All cutting materials had to be imported. The Albany Conglomerates were again the source of some of these. The basalt was used in the form of spalls (and possibly to manufacture adzes), the flakes of meta-argillite and andesite were used to cut with.

The Waiheke Group greywacke forms a significant proportion of the assemblage. Although no unequivocal adze fragments were found, it seems reasonable to suppose that some waste flakes on the site may be from adze reworking. A number of the greywacke flakes show edge damage, greywacke being a good general purpose cutting and scraping material. The high proportion of pieces with water worn surfaces indicates a shore line or river collection point, most likely the Motutapu Island shore. The Kauri Point people had access to this greywacke either by direct collection or through an exchange network. The poorer quality cherts were presumably obtained in the same way.

In pre-European Auckland, a requisite part of the complete cutting kit was obsidian and high quality chert. The Kauri Point occupants possessed it, albeit in small quantities. This suggests that it was hard to procure and only the smallest pieces were discarded. By reason of the distances involved, the cherts and obsidians were probably obtained through gift exchange with Coromandel groups. But the presence of three tiny water worn obsidian pebbles is fascinating. Their reason for being at Kauri Point and means of acquisition are matters for conjecture.

The overriding impression given by the Kauri Point lithic assemblage is that the site's occupants were living there under a state of political discord. This prevented their tool kits from being well stocked. Access to a flow of Coromandel obsidian and chert was restricted, with a resulting concentration on use of Albany Conglomerate and Waiheke Group rocks.

Occupation of the pa appears to have been brief and enforced by tension. Use of the area, given the poor potentional for horticulture, was probably normally seasonal.

Many of the rocks have been in contact with fire. Most of the chert is shattered and probably altered by heat contact. Either a fire went through the site, or during occupation the need for hangi stones was so desperate that anything, even sandstone and chert, was made use of.

Judging by the limited geological variety of the stone material, the occupation is likely to be late, and may have occurred during conflict between the Kawerau people and the Ngati Whatua, both of whom traditionally had pa in the area (Davidson ms).

CONCLUSION

The first cursory inspection of the rock collection from Kauri Point gave an impression of a scrappy, unexciting lot. But it has subsequently proved to contain a surprising amount of information. The major contribution has been to direct attention to the potential importance of the Albany Conglomerates as a source of lithic supply. Much work is required in sampling and recording the Conglomerates. Petrographic analyses and descriptions with an archaeological frame of reference are needed next.

The basalts and other lithologies are likely to be present in a large number of Auckland sites, and it will be of interest in future to determine how long they have been exploited and the extent of their distribution.

Beyond this, the work highlights the need for petrographic research on a number of other rock types to refine the accuracy of sources for the Auckland region.

Finally, a salutory lesson from the Kauri Point assemblage is that even hangi stones have a tale to tell.

ACKNOWLEDGEMENTS

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