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SALVAGE AT THE GLEN - A LATE ARCHAIC SITE IN TASMAN BAY

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The excavation

This salvage excavation was carried out on behalf of the Nelson Provincial Museum where all material is now stored. The site (S14/20) is situated at the northern extremity of the Nelson Boulder Bank and probably covered an area of approximately 1000 square metres of which about one third has been destroyed by road works during the past century. Two properties now share the remaining area more than half of which has been obliterated by building operations. Thus only a small proportion of the original site remains relatively undisturbed. Earlier investigation by Jim Eyles had established this as a probable Archaic site and so, when total destruction seemed imminent, Mike Hurst and I mustered all available help to retrieve what was left. The area to be dug had been much disturbed. Firstly by the laying of a water pipe line to a nearby cowshed, then by the erection of a small roadside stall (subsequently burnt down), by the burying of rubbish which included glass and iron, by fossicking, and finally by bulldozing of the surface soil. Thus we expected that little remained and that Easter 1973 would give sufficient time to finish the job. But it soon became apparent that a large amount of valuable artefactual material existed which needed careful attention.

We pegged out the area into 10ft x 10ft squares which were then divided into 9 equal squares each being effectively 1 metre x 1 metre. Measurements were taken within each metre square. However the fact that the site is situated on large boulders made progress slow. The owner, Mr B. Gleeson, was good enough to suspend building operations until September. By this time (digging on most weekends) the group, which included Jacqui Blackman, Rosemary Rowley, Stephen Hiener and various members of the Walls family, had completed about half of the threatened area. Delays in the owner's plans enabled another month's work to be done in January - February 1974.

The site

What was probably a seasonal fishing camp 500 years ago was sited behind the crest of the 80 metre wide bank of granodiorite boulders. Sheltered no doubt by a thicket of akeake and ngaio the camp extended down the bank on the inland side for 30 or 40 metres. Here the slope changes to gentle uphill clay - then possibly clothed in kohekohe forest - thence to beech on the hills behind with mixed podocarps in the gullies.

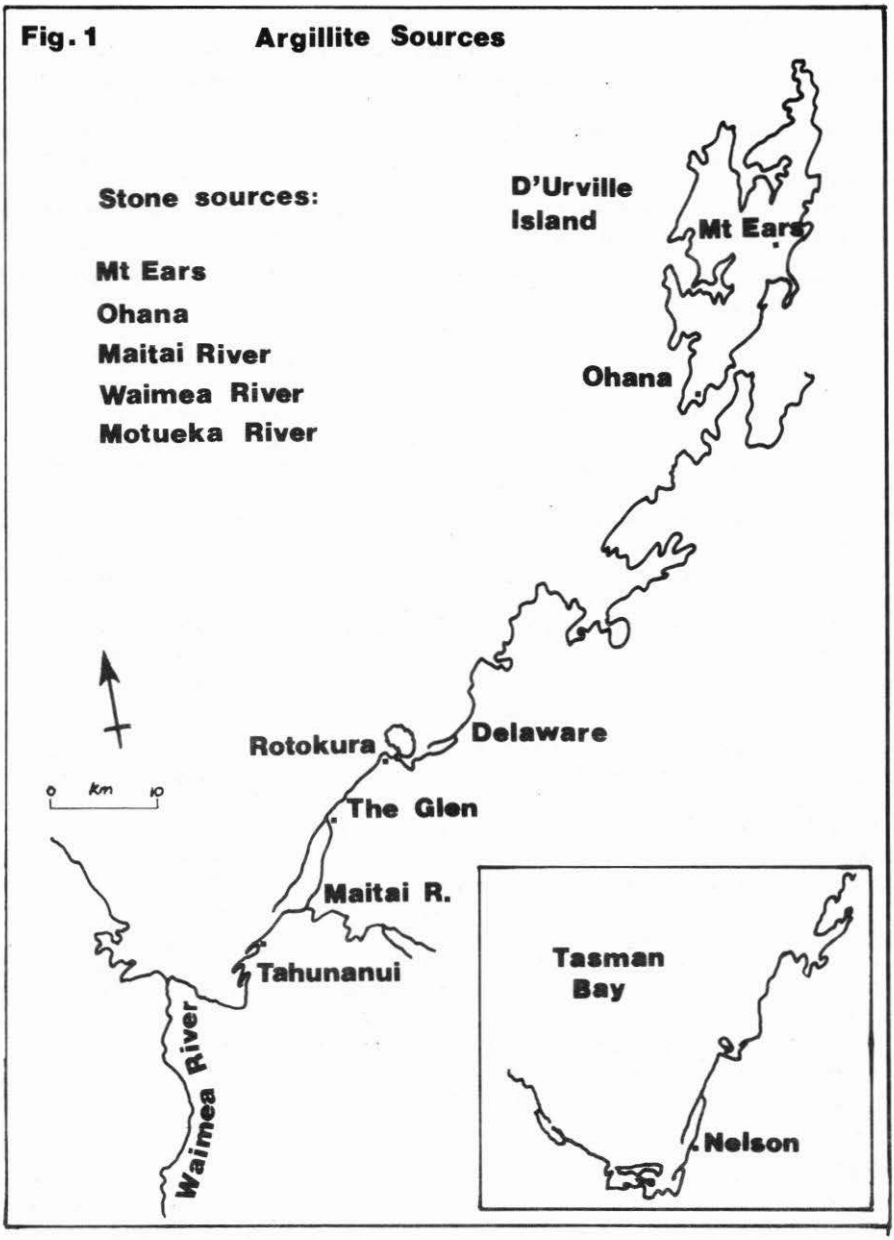


Figure 1. Location map and argillite sources.

At the base of the boulder bank, in the dip, a peaty layer covers the stones. This has built up subsequent to initial occupation and its acidic nature has dissolved virtually all bone and shell. Here we found large numbers of fresh water mussel periostracum (the dark brown outer skin of the shell). A large swamp, which is now drained farm land, would have backed up to this point. Generally speaking the site should have been dry and warm, food resources ample although shellfish limited, flax plentiful and with a good water supply.

No evidence of any structure was found and no attempt appeared to have been made to clear the boulders to make living conditions more pleasant. The sleeping huts may have been just off the boulders and slightly up the slope but the main living and working areas were certainly situated over and among very large water rolled cobbles. A cooking area, containing no artefacts but very black greasy soil and stones, was separated from the occupation area but the main midden on the other hand was quite central. The principal activity would seem to have been the manufacture of fishing gear. The most prevalent artefact found was the argillite drill point which would have been used mainly for drilling moa bone to make fish hooks. Tabs, finished and unfinished one-piece hooks were present especially in the sandy areas which were least acidic. Also unbarbed two-piece hooks and barracouta lure points. There were several minnow shanks of serpentine including two of triangular cross-section. Rocks of many types had been sought and used for a variety of purposes. Nephrite was present but in very small quantities. Green obsidian exceeded grey in the ratio two to one.

Life was not completely utilitarian or transient as the presence of several serpentine ornaments shows. This is in contrast to the two neighbouring sites Rotokura and Tahunanui (S14/1 and S20/2) of the same period where few ornaments were found. As with all Tasman Bay sites metasomatised argillite flakes were scattered throughout, a metre square yielding 50 or more on average. In some places they were obviously the result of intensive tool making as they were small and prolific. Adze fragments were very common artefacts and most types were represented. By far the most frequent were rectangular and triangular ('hogback') sections. Only one 2B was recovered. Virtually no complete adzes were found most pieces being discards. In fact any artefact found whole may have slipped down among the stones and been forgotten. The sources of argillite appear to have been local rivers and Mr. Ears and Ohana on D'Urville Island (Fig.I). The distinctive pale grey Ohana stone formed less than 5% of the total.

Settlement

Layering was not apparent in the stony conditions but the depth of occupation, which varied from 18 cm to 50 cm, indicates a lengthy period of settlement. If the numbers of artefacts are plotted against the

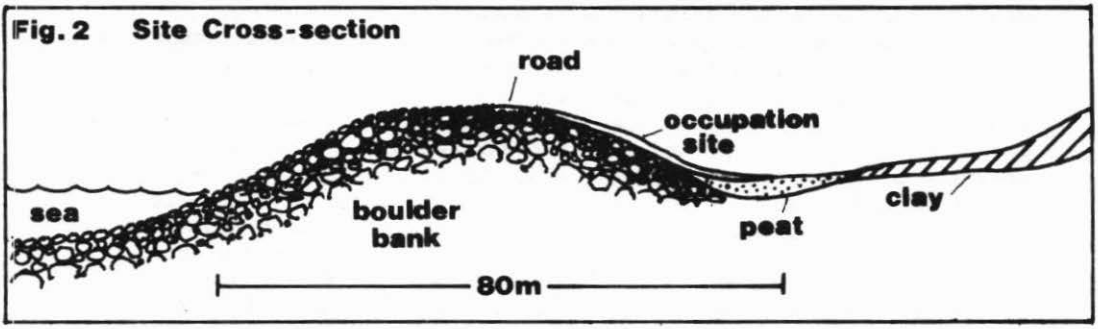


Fig. 2 Site Cross-section
road
occupation site
sea
boulder bank
peat
clay
80m

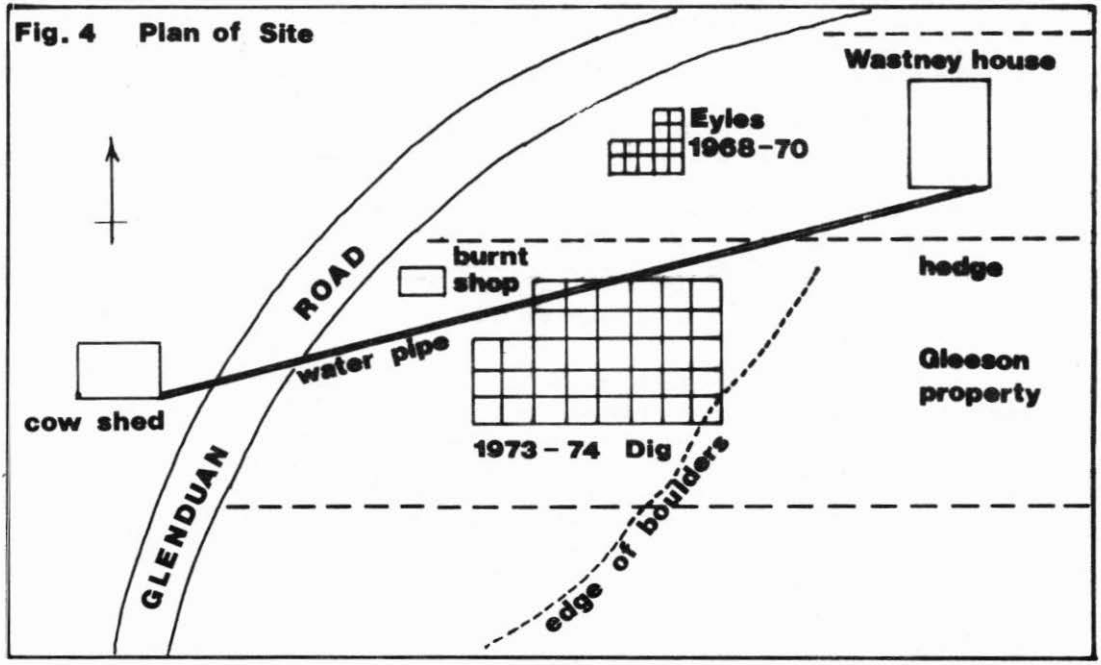


Fig. 4 Plan of Site
Wastney house
Eyles 1968-70
burnt shop
ROAD
hedge
water pipe
Gleeson property
cow shed
1973 - 74 Dig
GLENDUAN
edge of boulders

depth above the bottom (Fig.3) it is clear that the greatest concentration is almost always on the bottom. One obvious reason for this is that objects slipped down between the stones and were lost. This peak is followed by a steep drop and then a more gradual rise usually to a lesser peak followed by a falling off towards the surface. The vertical distance between these peaks seems to be related to the position of the square. Hence J6 shows 15 cm between peaks while I4 has 10 cm and G3 has 7.5 cm. This is apparently due to the build up of soil over the total settlement period. J6 is in the hollow with an overall occupation depth of 45 cm while G3 is on the slope with occupation of only 20 cm. So it may be surmised that although no layers were observed two or three main periods of occupation occurred, that the initial period was the longest and that the site became less and less desirable until finally abandoned.

No carbon date has been sought although samples of charcoal and shell were collected. However there are a number of pointers which tend to place the occupation in the 14th or 15th century.

1. The moa bone is mostly sub-fossil.
2. The adzes, while Archaic and lacking North Island influence, are not massive.
3. The minnow shanks merge from triangular to flat elliptic and the barracouta point appears.
4. Argillite sources do not seem to include the major Nelson mainland quarries, such as the Rushpool, which may have been discovered relatively late.
5. The artefact assemblage relates closely to that of Tahunanui (which like The Glen appeared to lack layers) and to a part of the Rotokura site between the Archaic and Classic layers. Tahunanui was carbon dated at 1361 $\pm$ 70 (Millar, 1971). For Rotokura a date of 1325 $\pm$ 71 was obtained from the middle of three Archaic layers (Millar, 1967).

It is possible that these three sites were occupied on a seasonal basis by the same groups of people over a period of 100 years or so. But that settlement eventually became permanent in the vicinity of Rotokura, around Delaware Bay, while Tahunanui and The Glen were abandoned. When people did return to The Glen they did not reoccupy this old site but established their pa on the spur behind. This pa was in existence at the time of D'Urville's visit in 1827 and referred to by him as 'Skoi Tehai'. It was finally deserted after the raid of Te Rauparaha about 1830.

Artefacts

Following are lists of artefacts recovered from the whole site. These include those found during the early exploratory digs on the

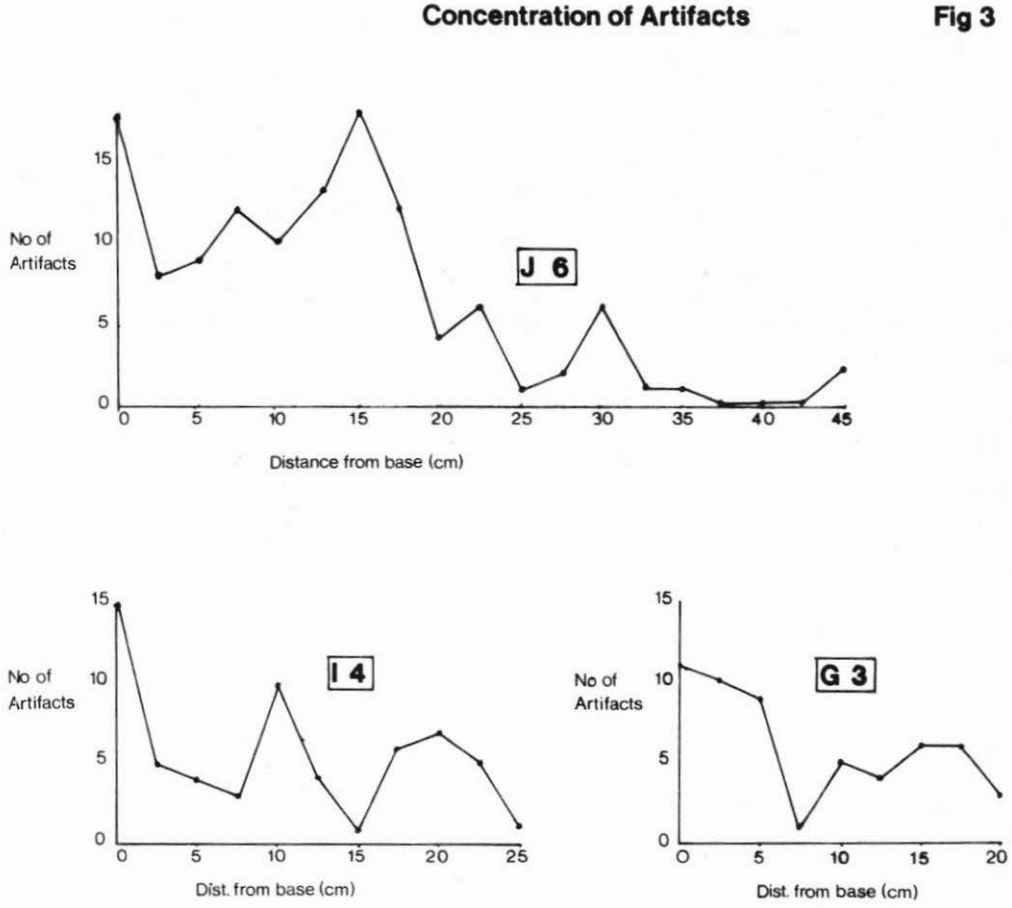


Figure 3. Concentration of artefacts in the site by depth.

Wastney property, the final salvage on the Gleeson section and pieces picked up on the surface after various bulldozings.

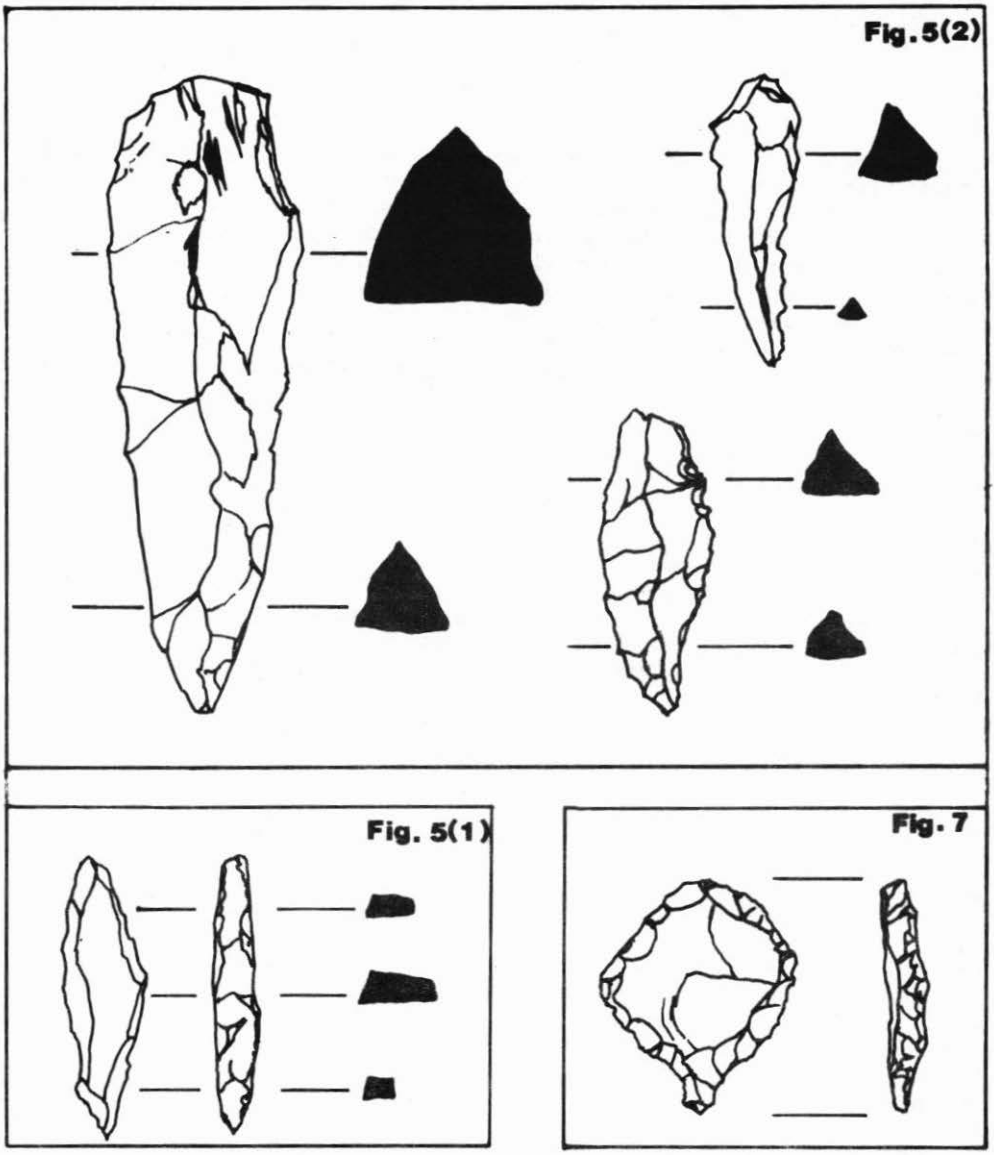
1. Drill points. These I have classified into four types. All are of metasomatised argillite except two of chert. The most frequent point diameter is approximately 3 mm which matches the most common hole size in the drilled bone. The most common form has a concave and convex curvature below the butt. This is shown in Figure 5 where the four types are illustrated. Over 30% exhibit this shape and almost equal numbers of triangular and quadrangular points, both thick and thin, are of this form. Double ended points show the concave and convex curves at one or both ends. This seems to me to indicate a preference for this shape although it can be argued that the form is a natural consequence of flaking argillite. Whatever the reason it is apparent that large numbers of drill points were produced with almost identical curvature below the butt.

	Longest	Median	Shortest	Number
Double ended (Fig.5(1))	132	40	27	32
Triangular cross-section (Fig.5(2))	120	50	27	111
Quadrangular cross-section (Fig.5(3))	111	40	27	162
Winged (hand held?) (Fig.5(3))	90	48	35	11
Pieces - points, butts, etc.				83
Drill point cum adze or adze with a pointed butt				1
Total				400

(Measurements in mm)

2. Adzes. Adzes and adze fragments are all metasomatised argillite with the exceptions of one of nephrite and one andesite. Of approximately 340 pieces only 8 are more or less complete. The bulk are either broken portions, crude roughouts or reworked adzes. Nearly all are small being potentially no longer than about 200 mm. Following is a table of 125 classifiable adze portions.

Duff class	Cross-section	Number
1A	Squarish	18
2A	Thin rectangular	50 (7 are made from flakes and are very thin)
1B	Rectangular	1 (spade shouldered)
2B	Semi-circular	1 (completely hammerdressed and ground)
2C	Trapezoidal	11 (1 nephrite)
3B	Triangular	5
?	Lenticular	2
4A	Reversed triangular	37 (1 andesite)



Figures 5 & 7. Argillite drillpoints and obsidian tool.

3. Chisels. One square cross-sectioned with the appearance of a large drill point but with a ground blade.
One polished adze blade fragment of hogback style retouched as a chisel.
One triangular blade portion as of a small hogback adze.
One circular section fragment of nephrite.

4. Ornaments. These are all of serpentine which is plentiful in local rivers with sources in the Nelson Mineral Belt.
A pair of small pebble amulets each with a suspension hole. They are not identical but their shapes are similar. One has little working and is almost a natural flat pebble while the other has been ground apparently to make a pair. The form could be described as "free". They may have been worn as ear pendants. Dimensions are 28 mm long and 3 mm thick.
A thin disc completely ground but unfinished. Notching and suspension holes to be completed. Found cached under a schist grindstone presumably being used to make it. (It is very similar to one found at Rimu Bay, Pelorus Sound by a relative of Mrs P. Wastney who now possesses it and who is remarkably one of the present occupiers of the Glen Site.) This form of pectoral amulet seems to be confined to areas reasonably close to the Nelson Mineral Belt. To my knowledge this is the first one to be found in a cultural or archaeological context.
A 90 mm long, 27 mm thick, partly ground roundish piece of serpentine with curvature suggesting the beginning of an imitation sperm whale tooth or some similar Moa-Hunter style amulet.
A large, 110 mm long, 20 mm thick flattish slab, fully ground on both sides. Final shape uncertain.

These ornaments are fully described and illustrated in a recent article (Walls, 1976). In addition there are several small broken pieces of ornaments, one with a drilled hole.

5. Fishing Gear. 1. Minnow lure shanks.
Two of triangular cross-section in serpentine - both perfect. 72 mm and 66 mm long respectively. Eyes drilled from side to side.
One of flat elliptic cross-section in serpentine - broken out at the eye. 45 mm long.
One of triangular cross-section in limestone - unfinished. 50 mm long.
One of semi-circular cross-section in fine white serpentine - broken with eye missing. 45 mm long.
One sawn rectangular piece of serpentine ready for shaping. 85 mm long.
2. Minnow lure points.
One perfect point 30 mm long (Fig. 6a). Not associated with a shank.
One broken point about 60 mm long.
3. Barracouta lure points.
One 40 mm long.
4. Bait hooks.
Figure 6b illustrates the most complete one piece hook to be found.

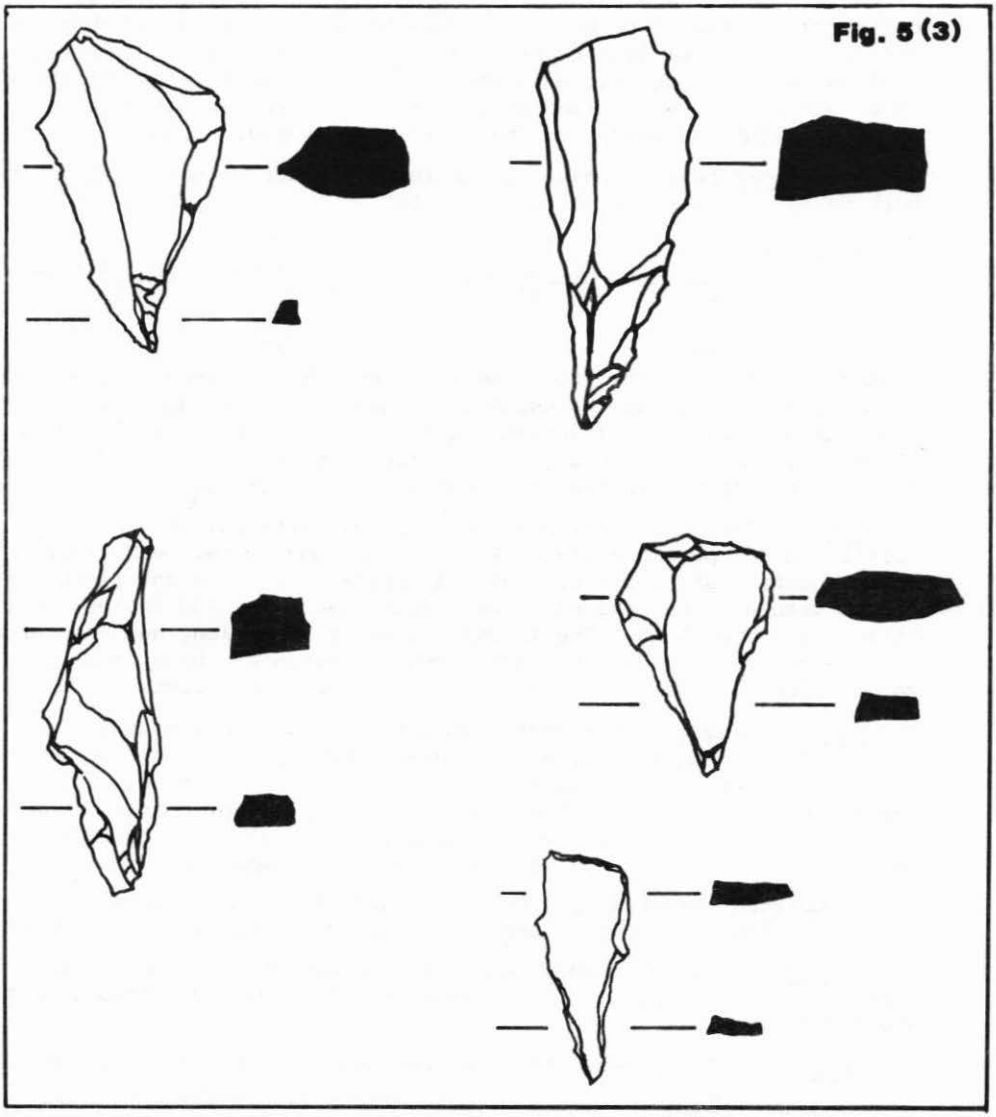


Figure 5. Argillite drillpoints.

Small pieces are missing from both ends. It is 32 mm long. In addition 15 pieces of hooks were found, the longest being 65 mm. Many of these no doubt are parts of one piece hooks. Four points are definitely of two piece hooks. Figure 6c and d show two of these which are 22 mm and 40 mm long respectively. One small portion of a two piece hook has a bait notch close to the lashing hole (Fig.6e). The shank knobs are generally of traditional design with the exception of one shown in Figure 6f where the "nose" is exaggerated.

6. Bird spear point. Only one was found, broken at both ends, a single barb on either side, 22 mm long (Fig.6g).

7. Obsidian.

Colour	No of flakes	Total Weight	Largest flake
Green	113	122 g	8.3 g
Grey	56	74 g	10 g
Red	1	0.9 g	

Flakes ranged in length from 7 mm to 60 mm. Three green pieces showed pressure flaking along the edges and could be classed as tools. The leaf-shaped implement illustrated (Fig.7) is of green translucency, is 35 mm by 30 mm, weighs 6.2 g and is carefully pressure flaked into shape. It could possibly have been designed as a tool for flax work.

8. Chert. The only fashioned tools of this material are two drill points and one pressure flaked knife 75 mm long. Chert was clearly a most important stone for cutting and scraping of fibre and flesh, as many flakes with used cutting edges were found among the 130 flakes. The total weight was 1 kg. The largest flake is 75 mm long and the largest core weighs 85 g. Colours range through brown, grey, blue, rose and white. The most likely source the east Marlborough coast.

9. Quartz. Small flakes were common throughout and 5 nodules were found. Both clear and milky white quartz were present, the source no doubt being the granite coast of north-west Nelson. Its use is not certain but it could have been used, for example, for cutting flax (although chert would be best for this). There is the suggestion (Williams, 1971) of its use as a fishing lure for warehou.

10. Andesite. Several spawled flakes and one roughout adze. The source is probably Pepin Island 2 or 3 km north-east along the coast.

11. Pumice. A large amount was collected but only two pieces show evidence of use in polishing. They were blunt pointed, top-shaped and about 7 cm long.

12. Kokowai. There were only four nodules of haematite - source unknown.

13. Onekaka schist. The use of this distinctive black schist is problematic. Three pieces were found all showing some signs of working - grooving, grinding or hammering. Minnow lure shanks are a possibility although none have been found of this material.

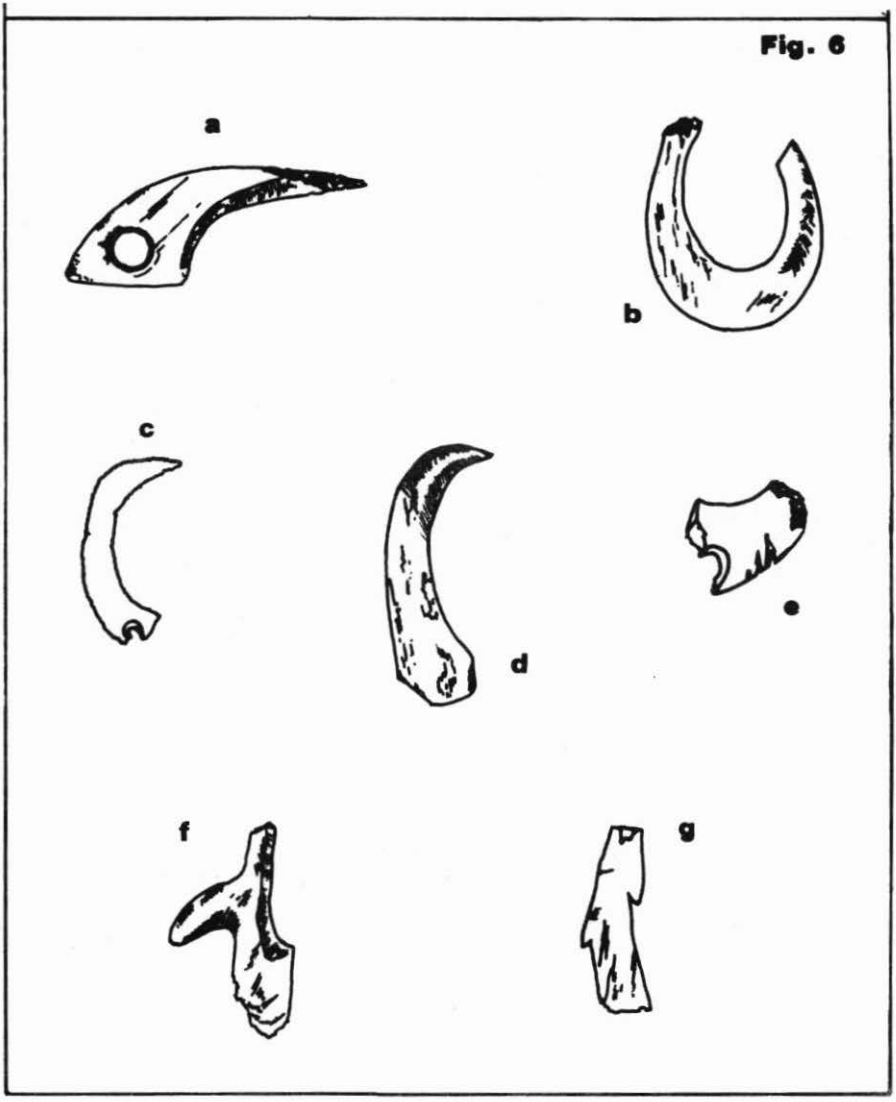


Figure 6. Fishhook and bird spear pieces.

14. Abraders. 1. Sub-circular cross-section. Total 25. Largest 75 mm long, 25 mm diameter, smallest 30 x 10 mm. Median 54 x 17 mm. A variety of sandstones were used but the majority were very soft and micaceous. Some were shaped by cutting with a harder stone as longitudinal grooves are often visible.
2. Triangular cross-section. One of very coarse sandstone 90 mm long and 'hogback' in style.
3. Flat. Total 15. They are in a variety of shapes - often much weathered being of the soft micaceous sandstone. The largest is 115 x 65 x 18 mm and is flat oval in cross-section. Another fine, much used file with thin edges, 56 x 45 x 8 mm is also flat oval. These were often just suitable pebbles but as some larger rocks show circular scarf marks it is apparent that many were struck or sawn off.
4. Grindstones of no particular shape. Total 6. The largest of a fine sandstone is 250 x 105 x 50 mm, roughly quadrangular with broad flattened surfaces. One small piece of granite with ground surfaces is included here.

15. Hammerstones. The most notable find was a cache of 34 unused granodiorite knapping stones. Although suitable stones abound in the area these had been carefully selected for shape and size and possibly for transport to another site not so well endowed. Or even for trade. They are mostly ovoid to spherical, details being:

	Smallest	Median	Largest
Greatest diameter	4 cm	6 cm	8.5 cm
Weight	57 g	142 g	284 g

There was a relative scarcity of definitely used hammerstones which could be held by the fingers for fine working. Three found are of soft sandstone, flat ovoid, suitable for finishing work. Rodingite forms an important ingredient of the Tasman Bay toolmaker's kit. One large, roughly spherical stone with faceted crystalline surfaces as if used as a heavy hammer was found. Its weight is 3.6 kg, diameter 12 cm. Also found were fine small spherical hammerdressing stones of rodingite - the smallest 3 cm diameter weighing 57 g (median 4.5 cm and 200 g) and 3 large angular pieces.

16. Pounders. These are recognisable as flattish, lozenge-shaped water-rolled stones from local rivers. They are usually hard sandstones (greywacke) and have use marks on the edges. Five were found ranging in length from 22 to 15 cm, all were 4 cm thick. The median weight 312 g.

Acknowledgements

My thanks to all who spent many hours both on the site and later washing countless flakes. To Mike Hurst for the illustrations and endless enthusiasm. And especially to Jim Eyles for inspiration and invaluable advice.

Unfortunately I have been unable to get either the bird bone or fish bone identified.

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