ARCHAEOLOGICAL EXCAVATIONS DANGER POINT, GANSBAAI

Prepared for

IRVIN & JOHNSON ABALONE CULTURE DIVISION

By

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Executive summary

Archaeological excavations at the Irvin & Johnson Abalone Farm at Danger Point, Gansbaai were carried out over a period of 10 days, between 15 and 24 November 1999.

The site, known as Danger Point 1 (DP 1), was first recorded in October 1996 during a baseline study of the farm. The study was undertaken in anticipation of future planned development of the farm.

DP 1 comprises an extensive but marginal scatter of fragmented shellfish remains and stone flakes among a series of low lying vegetated dunes in the western portion of the farm.

The report recommended that archaeological sampling take place prior to planned development in the western portion of the farm.

Monitoring of earthworks, in case human burials (both indigenous and those relating to the wreck of the Birkenhead) would be disturbed, was also recommended.

The primary aim of the excavation was to rescue a representative sample of archaeological material from DP 1, in order to minimise the negative impact of development on the site.

DP 1 is characterised by relatively large numbers of large side-struck flakes, flaked cobbles, cores, grindstones, hammerstones and manuports. Only a few formal tools were recovered from the excavation. The majority of tools are in fine-grained quartzites. A small amount of artefacts are in quartz, while very few tools are in silcrete.

The shellfish remains throughout the excavation are dominated by Haliotis (perlemoen), with smaller amounts of limpet and Turbo occurring.

Only three ostrich eggshell beads were recovered from the excavation, while no ostrich eggshell pieces were found. One white mussel scraper, two shell scoops/spoons, two pieces of ground barnacle and four pieces of ochre were found. No pottery was recovered from the excavation.

Three layers have been identified at DP 1.

Layer 1 is a very soft, sandy, light-grey coloured deposit, mixed with relatively small amounts of crushed perlemoen and limpet. Some larger fragments of perlemoen and limpet occur in the basal deposits.

Layer 2 comprises a thick, compact layer of fragmented and whole perlemoen shell, with relatively large amounts of limpet and some large Turbo occurring at the base.

Layer 3 is a coarse sandy, yellow/brown-coloured deposit. Large amounts of limpet and Turbo occur in this loose, gritty, beach sand deposit.

The DP 1 assemblage is similar to an assemblage excavated from a perlemoen-rich midden by G. Avery at Pearly Beach. The Pearly Beach assemblage is relatively small, however. But like DP 1, no pottery was recovered. The Pearly Beach midden has been radiocarbon dated to1450 ± 50 BP. A similar date is assumed for DP 1.

Layers 1-3 at DP 1 correspond to three activity periods at the site. Layer 1 represents short, perhaps sporadic, visits to the coast, where perlemoen formed the bulk of the group's diet, supplemented by smaller amounts of limpet. Layer 2 represents a period where perlemoen was intensively exploited over a longer period of time, supplemented by limpet, Turbo and Oxystele. Layer 3 also appears to represent shorter, sporadic visits, were perlemoen and large Turbo formed the bulk of the diet.

It is argued that Layer 2 at DP 1 represents primarily a shellfish processing site, where large numbers of perlemoen were collected at low spring tides when Haliotis (perlemoen) could be reached. Specialised preparation included removal of animal meat, pounding, grinding and finally drying. It is possible that relatively large groups of people were involved in processing the shellfish resource.

No ash, charcoal, fire-split cobbles, or burnt shell was noted during the excavation, suggesting that no cooking of the perlemoen meat took place. Instead, it is argued that perlemoen meat was prepared for drying, and then transported to inland or near-coastal living sites, where it was stored and consumed. Avery suggested as much in his work at Pearly Beach. Drying allowed for much larger but lighter volumes of protein-rich meat to be transported and safely stored, and free of pathogenic bacteria.

Snaring, scavenging and collecting of small terrestrial and mammal fauna such as tortoise, seal, bird and small game would have taken place during the period spent at the coast. Preparation of this food may have taken place elsewhere on the site.

Rescue excavations at DP 1 add to a relatively large body of archaeological knowledge that has being generated from the Gansbaai region. A range of coastal sites, including ancient fishtraps, have been recorded in the Pearly Beach region while sites have also been located at Gansbaai, Die Kelders and Sandy Point. The region, with its rocky shoreline, would have acted as foci that attracted Later as well as Middle Stone Age people, as they offered greater opportunities for the exploitation of marine foods, particularly shellfish.

1. INTRODUCTION

1.1 Background

In October 1996, the Agency for Cultural Resource Management (ACRM) was requested by Irvin and Johnson (I&J) Limited to undertake an archaeological study of their farm at Danger Point, Gansbaai (Kaplan 1996). The baseline study was undertaken in anticipation of planned future development in the western portion of the farm. A number of sites were located during the 1996 study. In addition, the remains of two human skeletons from the wreck of the Birkenhead (1852) were also exposed during trenching activities (Kaplan 1996).

The report recommended that archaeological sampling of shell midden material take in the western portion of the farm prior to further development taking place (Kaplan 1996).

Monitoring of earthworks and trenching in case human burials, (both indigenous and those relating to the wreck of the Birkenhead) would be recovered, was also recommended.

In November 1999, I&J Abalone Culture Division at Danger Point requested that ACRM visit the farm in order to assess the impact of proposed new developments on the archaeological sites located during the 1996 study. Planned development included construction of additional settling tanks, a packing shed, research and development facility, excavation of trenches for pipelines, and construction of a road. Significant earthworks was envisaged.

It was noted that planned construction/upgrading of a sand road would have a severe negative impact on archaeological sites in the western portion of the farm. The consultant recommended that an archaeological sampling programme is undertaken at the site, subsequently called Danger Point 1 (DP 1).

In addition, monitoring of trenching and earthworks for a new pipeline route was also recommended, in case more burials relating to the wreck of the Birkenhead (1852), as well as indigenous burials, would be uncovered.

In November 1999, I&J requested that ACRM undertake rescue excavations at Danger Point, as well as monitoring of trenching and earthworks.

ACRM applied for a National Monuments Council Permit (Permit No. 80/99/11/005/51) to undertake a rescue excavation at DP 1, in November 1999.

The primary aim of the excavation was to rescue a representative sample of archaeological material from DP 1, in order to minimise the negative impact of development on the site.

2. THE STUDY AREA

The study area and location of DP 1 is illustrated in Figure 1.

DP 1 (S 34°37.617 E 19°17.767) comprises a marginal, but extensive scatter of fragmented shellfish remains and stone flakes, on a series of low lying vegetated frontal sand dunes in the western portion of the abalone farm (Figure 2).

3. THE EXCAVATION

A relatively large surface area was cleared of ground cover and shrubs, and gridded in metre squares (Figure 2). Patches of relatively well compacted undisturbed shell was visible once the surface area of the dune was cleared.

DP 1 was excavated over a period of 10 days, between 15 and 24 November 1999.

All the excavated material was sieved through a 1.5 mm mesh sieve, sorted, and bagged on site. Bulk samples, comprising the full (sieved) contents of a single bucket from each excavated unit in square D 4 were retained for future research purposes.

A full photographic and fieldnote record of the excavation has been kept, as well as drawing of prominent excavated sections.

The excavated assemblage from DP 1 has been curated according to the requirements of the Department of Archaeology (Human Sciences) at the South African Museum in Cape Town. The assemblage will be permanently stored at the South African Museum, and is available for research purposes.

3.1 The stratigraphy

Nine x 1 m squares were excavated in CBD 14 (Figure 3). Eleven stratigraphic units were excavated (Figures 4 & 5), which have been divided into four stratigraphic Layers. A selection of the excavated stratigraphic units is illustrated in Figures 6-9. The coloured labels indicate the stratigraphic units.

Layer 1

Layer 1 comprised one stratigraphic unit; Surface

Surface comprised a very fine, soft; loose, wind-blown, light grey coloured sandy deposit, mixed with twigs, soft rootlets, and leaves, with finely crushed limpet and perlemoen shell. Thereafter the deposit become slightly darker grey-coloured, with crushed and fragmented perlemoen dominating the shellfish remains, with smaller amounts of limpet, whelk, periwinkle and barnacle also occurring.

The base of Layer 1 is relatively well compacted, with a noticeable increase in the density of whole and large perlemoen shell. A number of flat manuports, some with occasional grinding surfaces, occur in C3, D3 and E3.

Figure 1. Archaeological excavations, Danger Point, Gansbaai: location of DP 1

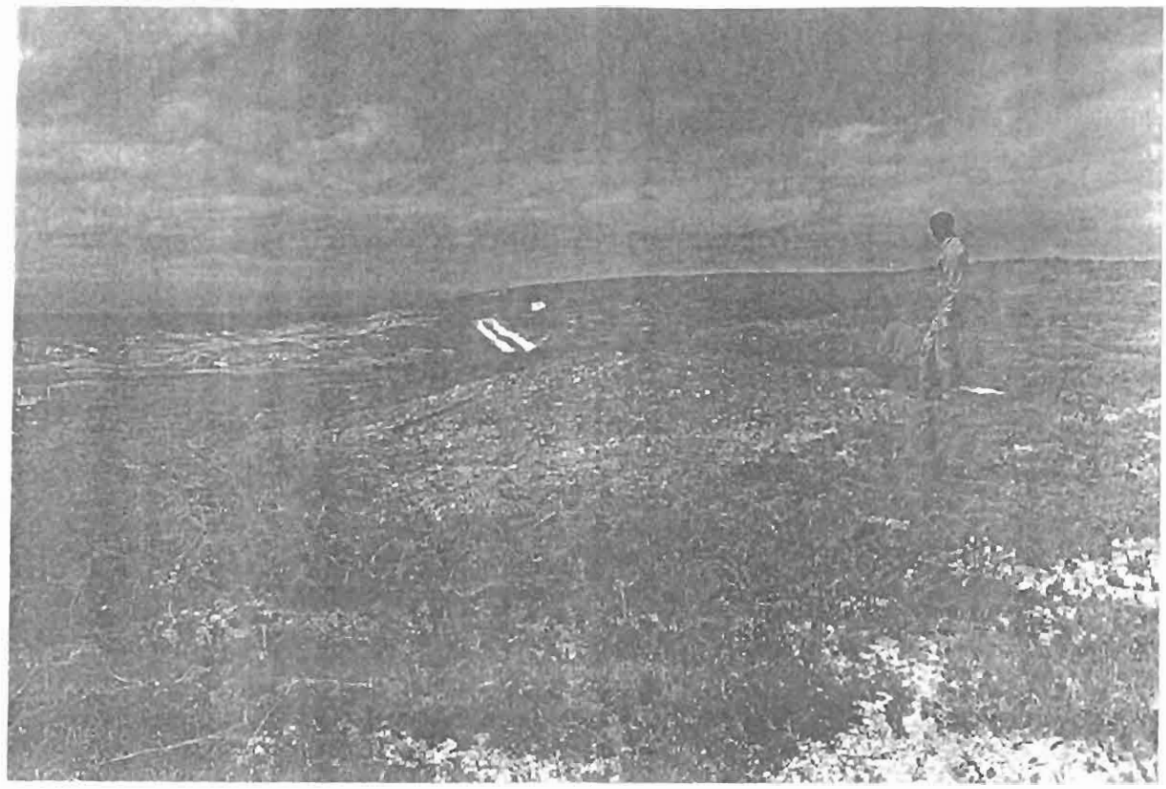

Figure 2. Archaeological excavations, Danger Point, Gansbaai: DP 1.

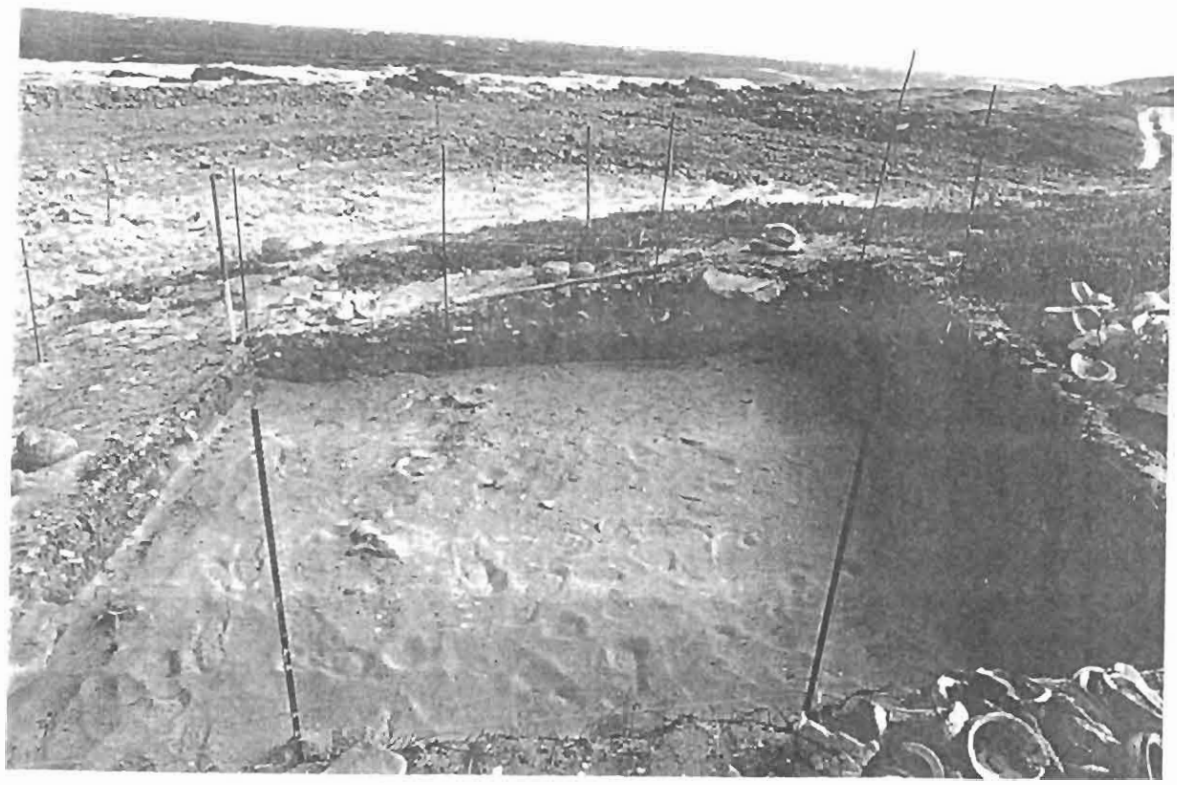

Figure 3. Archaeological excavations, Danger Point, Gansbaai: the excavation.

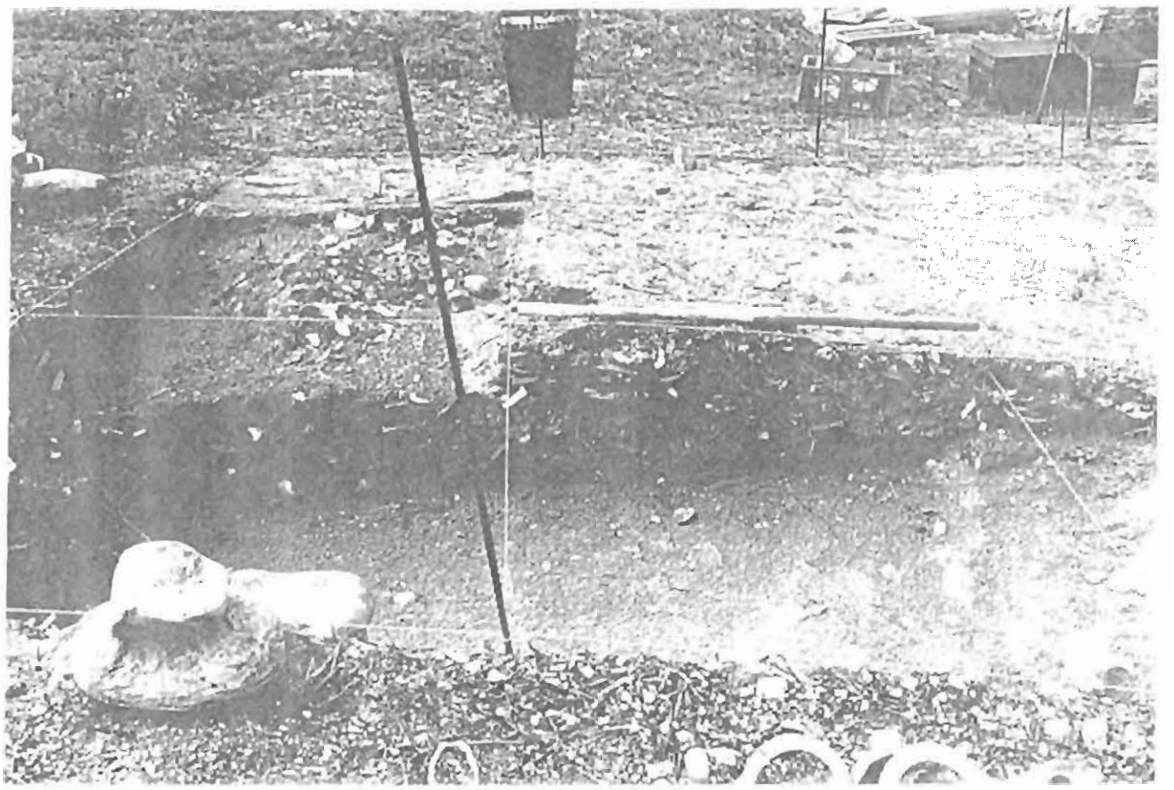

Figure 6. Archaeological excavations, Danger Point, Gansbaai: D3/D4 section

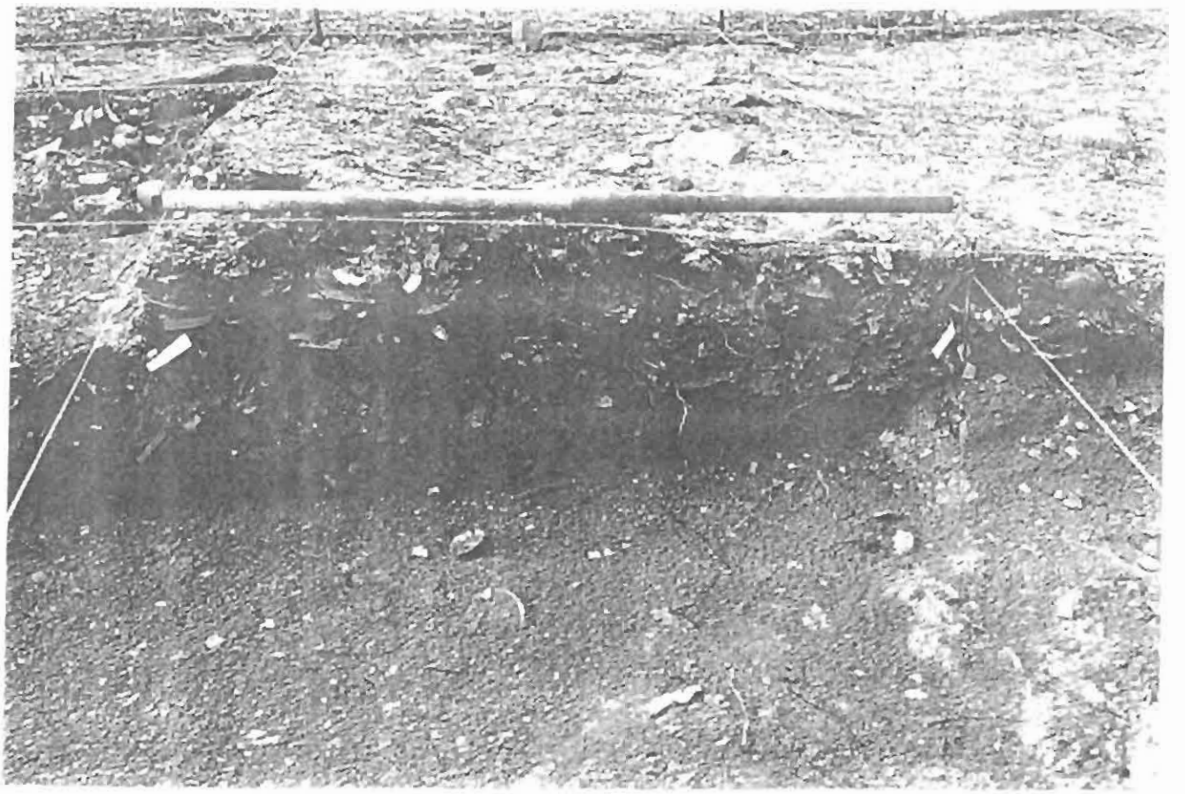

Figure 7. Archaeological excavations, Danger Point, Gansbaai: D4 section.

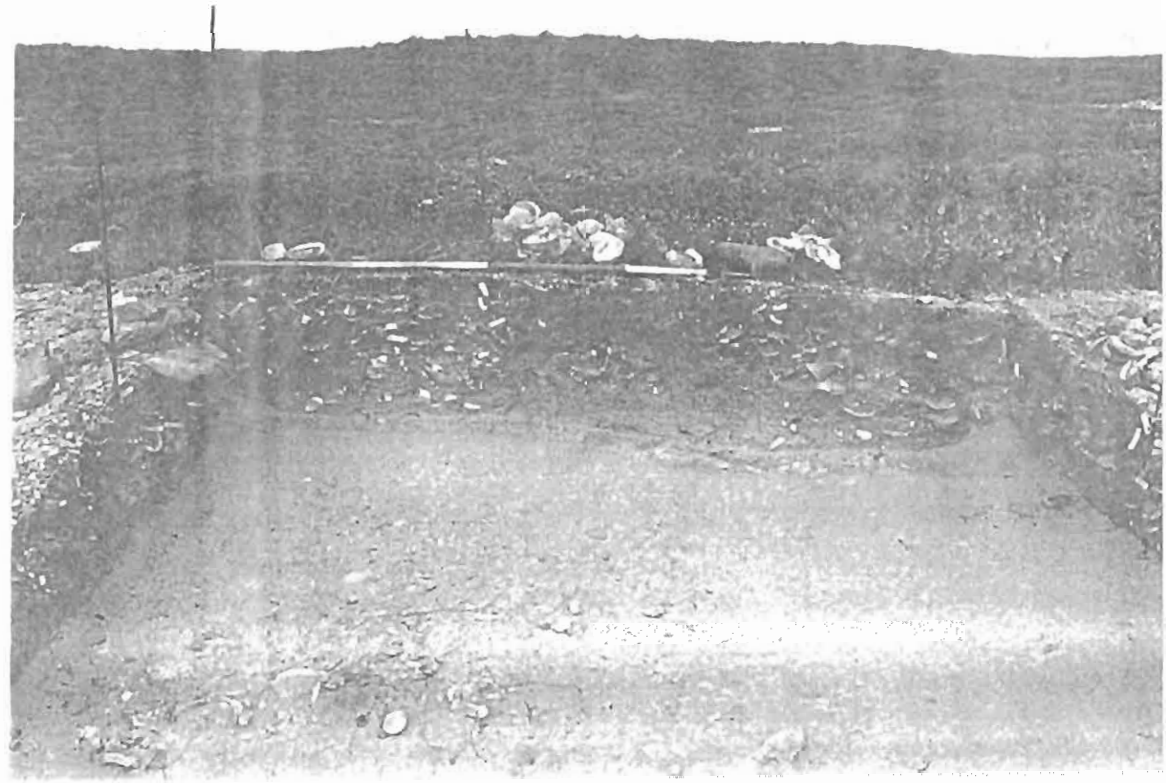

Figure 8. Archaeological excavations, Danger Point, Gansbaai: C3/D3/E3 section.

Figure 9. Archaeological excavations, Danger Point, Gansbaai: C3//D3 section.

In C6, D4/5/6, E4/5/6, the deposit is loose and sandy with little crushed shell occurring, indicating that these squares may be the edge of the midden. A few patches of consolidated, yellow/brown, clay-like chunks occur in these squares, suggesting the base of the dune. Larger roots also occur in these squares.

Layer 2

Layer 2 comprised four stratigraphic units; Compact Shell, Soft Sand, Compact Shell 2 and Compact Shell 3.

Compact shell comprises a fine, loose, soft, slightly course, light grey-brown coloured deposit, with high densities of mainly compacted perlemoen shell (Figures 6 & 9). Limpet densities are also quite high, with some large Turbo also occurring.

Soft Sand in E3 is a soft, fine, loose, light-grey coloured deposit, with very small amounts of shell occurring. The deposit is sandy and loose, unlike the corresponding compact shell deposits.

Compact Shell 2 comprises a thick relatively compact shell unit in a matrix of soft, loose, orange-brown coloured, slightly gritty deposit. Large amounts of crushed, fragmented and whole perlemoen dominate the shellfish remains. Limpet frequencies are still relatively high. Large whole Turbo is more visible in the basal deposits. Animal (dune-mole rat) burrowing is present in D4 and D5.

Compact Shell 3 is dominated by large amounts of fragmented and whole perlemoen. A significant increase in the amount of large Turbo also occurs. Limpets have decreased significantly. The deposit is softer; less compacted, grittier, sandy, looser, and orange-brown coloured, becoming more coarse-grained orange/yellow coloured at the base. Some animal burrowing is present in C4.

Layer 3

Layer 3 comprised two stratigraphic units; Loose Shell and Loose Shell 2.

Loose Shell is a very soft, loose, fine, light yellow/orange coloured course-grained gritty dune/beach sand deposit, becoming more orange coloured, loose and gritty nearer the base. The shellfish is almost exclusively dominated by large whole perlemoen, with large Turbo also occurring. Limpet species have decreased significantly. Animal burrowing is visible in C4 and E4, and very evident in D4.

Loose Shell 2 is a relatively 'clean' soft, light, yellow-coloured coarse, grainy beach/dune deposit, with large amounts of fragmented and whole perlemoen and large Turbo. Some limpets also occur. Hard nodules and large lumps of yellow consolidated clay-like deposits occur at the base, but not in all squares, while the density of shell has decreased dramatically. Water worn shell is present (indicating a beach deposit), as is animal burrowing in C5, D3, E3, E4 and E5/E6.

4. ARTEFACT ASSEMBLAGES

4.1 Stone artefacts

One thousand and fifty-five pieces of artefactual stone were recovered from the DP 1 excavation (Table 1). Waste pieces, at 72.7%, account for the majority of the stone artefacts, which comprise chips, chunks, flakes, cores, manuports and grindstone fragments.

Utilised tools comprise 25.9% of the assemblage, while formal tools comprise 1.9%. Some 48.7% of utilised tools comprise utilised flakes. Upper grindstones comprise 36.6%, lower grindstone 6.5% and hammerstones 5.1%.

Some 55.8% of all the stone artefacts came from Layer 2, while 28.3% came from Layer 3 and 15.6% from Layer 1.

4.1.1 Raw materials

92.5% of the stone artefacts from DP 1 are in quartzite, with quartz comprising 6.8%, and silcrete 0.6%.

There is some patterning in the use of raw materials between Layers 1-3, where quartzite comprises 93.9% of the raw materials in Layer 1, 92.7% in Layer 2 and 91.3% in Layer 3.

The use of quartz increases from 4.8% in Layer 1, 6.9% in Layer 2 and 7.6% in Layer 3. Silcrete varies between 1.2% in Layer 1, 0.3% in Layer 2 and 1.0% in Layer 3.

Quartzite comprises 84.3% of utilised tools in Layer 1, 95.3% in Layer 2 and 90.0% in Layer 3. Quartz comprises 12.5%, 4.6% and 8.5% of utilised tools in Layers 1-3 respectively. Silcrete varies between 3.1% in Layer 1, 0.0% in Layer 2 and 1.4% in Layer 3.

Quartzite comprises 100% of formal tools in Layers 1 and 2, and 57.1% in Layer 3. Quartz comprises 42.9% of formal tools in Layer 3.

Quartzite was most likely sourced from the cobble beach directly in front of the site. The vast majority of quartzite tools have been struck from beach cobbles. Quartz, including crystals, and silcrete, was brought onto the site from elsewhere.

	LAYER 1			LAYER 2			LAYER 3		
Waste	Quartz	Quartzite	Silcrete	Quartz	Quartzite	Silcrete	Quartz	Quartzite	Silcrete
Chips, chunks & flakes	4	117	1	28	359	2	12	199	1
Ireg. Cores	-	3	-	2	7	-	2	2	1
Bipolar cores	-	-	-	2	-	-	-	-	-
G/stone frags	-	1	-	-	9	-	-	3	-
Manuports	-	5	-	-	4	-	-	2	-
Crystal		-	-	1	-	-	-	-	-
Total	**4**	**126**	**1**	**33**	**379**	**2**	**14**	**206**	**2**
UTILISED									
Flakes	4	15	1	8	68	-	6	30	1
Chunks	-	1	-	1	5	-	-	2	-
U/grindstones	-	7	-	-	67	-	-	26	-
L/grindstones	-	2	-	-	16	-	-	-	-
H/stones	-	2	-	-	7	-	-	5	-
Total	**4**	**27**	**1**	**9**	**163**	**-**	**6**	**63**	**1**
FORMAL									
End scrapers	-	-	-	-	-	-	3	-	-
MRPs	-	2	-	-	5	-	-	4	-
Total	**-**	**2**	**-**	**-**	**5**	**-**	**3**	**4**	**-**
GRAND TOTAL	**8**	**155**	**2**	**42**	**547**	**2**	**23**	**273**	**3**

Table 1. Danger Point 1 : stone artefact and raw material frequencies

4.2 Ostrich eggshell beads

Three ostrich eggshell beads were found in Layer 3 (Table 2).

4.3 Ochre

Four pieces of ochre were found. One piece came from each of Layers 1 and 2, and two pieces came from Layer 3 (Table 2).

4.4. Ground shell

One piece of ground barnacle came from Layer 2 and one ground barnacle tip came from Layer 3 (Table 2).

4.5 Mussel scrapers

One broken white mussel scraper was recovered from Layer 2, while one white mussel scraper blank was found in Layer 3 (Table 2).

4.6 Shell scoops/spoons

Two edge-ground limpet scoops/spoons were found in Layer 3 (Table 2).

5. FAUNAL REMAINS

5.1 Bone

At the time of writing, the faunal analysis has not yet been completed.

5.2 Shellfish remains

There is some visible patterning between the shellfish remains in Layers 1-3 at DP 1, but these have not been quantified.

Haliotis (perlemoen) dominates the shellfish remains throughout Layers 1-3. The density and the 'condition' of shell vary, however. Layer 1 is dominated by relatively small amounts of crushed and fragmented perlemoen and limpet, in a loose sandy matrix, while Layer 2 comprises a thick compacted layer of fragmented and whole perlemoen shell, with many limpet species, and a few large Turbo nearer the base. Large whole perlemoen and very large Turbo in a loose, sandy coarse-grained beach/dune deposit dominate layer 3.

Perlemoen were likely collected at low spring tides when Haliotis (perlemoen) could be reached. There is evidence of selection for size, where only large shellfish were stripped off the rocks. Very few small perlemoen occur in the excavated deposit. This would also suggest that groups of people visiting the coast were managing the perlemoen resource.

	Layer 1	Layer 2	Layer 3
Beads	-	-	3
Mussel scraper	-	1	-
Shell scoops	-	-	2
Mussel blank	-	-	1
Ground barnacle	-	1	1
Ochre	1	1	2

Table 2. Danger Point 1 : small finds

Turbo was collected at normal low tides and perhaps formed the optimum resource in the tidal cycle. Turbo may have been collected together with Haliotis. Mixed limpet was collected at normal tides when the larger species were not available.

6. DISCUSSION

Avery (1974, 1976) identified three types of middens at Pearly Beach: those dominated by Haliotis (perlemoen), Turbo, and mixed Oxystele/Patella/Turbo. A perlemoen-rich midden excavated by Avery produced a date of 1450 ± 50 BP (G. Avery, South African Museum, pers. comm.). A similar date is assumed for Layer 2 at DP 1.

Unfortunately, the Pearly Beach stone assemblage is small (G. Avery, South African museum, pers. comm.). This contrasts with DP 1, where relatively large numbers of tools occur (Table 1). But like the Pearly Beach midden, no pottery was found at DP1.

Layers 1-3 at DP 1 correspond to three activity periods at the site. Layer 1 represents short, perhaps sporadic visits to the coast, where perlemoen formed the bulk of the group's diet, supplemented by smaller amounts of limpet.

Layer 2 represents a period where perlemoen was intensively exploited, over a longer period of time, supplemented by limpet, Turbo and Oxystele.

Layer 3 also appears to represent shorter sporadic visits, were perlemoen and large Turbo formed the bulk of the diet. The presence of formal tools such as end scrapers in Layer 3 (Table 2) may suggest other specialised tasks took place on site, such as the skin working/preparation.

It is argued that Layer 2 at DP 1 represents primarily a shellfish processing or 'transit' site (Avery 1973, 1976), where large volumes of perlemoen were collected at low spring tides, when Haliotis could be reached. The shellfish represented the optimum resource because of its size. Preparation included removal of animal meat from the shell, cleaning, pounding and grinding. Non-specialised tools such as utilised flakes would have been used in prising and removing the meat from the shell. It is likely that nuclear or extended families, including children, were involved in processing the resource, given the large number of upper grindstones present in the Layer 2 assemblage, including small partially ground pebbles and cobbles. Some of the lower grindstones have also only been partially or minimally ground, further suggesting their widespread availability and use. Communal veldkos gathering has been recorded among extant hunter-gatherer groups living in Botswana (Lee 1979). Communal shellfish processing may well have taken place at DP 1.

No ash, charcoal, fire-split cobbles, or burnt shell was noted during the excavation, suggesting that no cooking of the shellfish meat took place. Instead, it is argued that meat was prepared mainly for bulk drying, and then transport to inland or near coastal living sites, for storage and consumption. Avery (1973) suggested as much in his work at Pearly Beach. Drying allowed for very large but lighter volumes of protein-rich meat to be transported and stored, free of any pathogenic bacteria (Henshilwood

et al 1994). Ethnographic accounts of shellfish drying by hunter-gatherers in other parts of the world have been well documented (Henshilwood et al 1994).

Snaring, scavenging, collecting, cooking and eating of terrestrial and other marine fauna such as fish, tortoise, seal, bird and small game would have taken place during longer periods of time spent at the coast. Preparation of this food may have taken place elsewhere on the site.

The few ostrich eggshell beads found in the excavation (Table 2), and the fact that no pieces of ostrich eggshell were found, suggests that complete beads were brought onto the site from elsewhere. This may lead further support to the argument that DP 1 was only a processing or transit site, and that resident sites were located further inland. The mussel scraper and shell spoons are most likely non-utilitarian items used in daily activities.

7. CONCLUSSIONS

Rescue excavations at DP 1 add to a relatively large body of archaeological knowledge that has being generated from the Gansbaai region. A range of coastal sites, including ancient fishtraps, have been recorded in the Pearly Beach region (Avery 1974, 1976; Kaplan 2000), while sites have also been located at Gansbaai, Die Kelders and Sandy Point (Kaplan 1993). The region, with its rocky shoreline, would have acted as foci that attracted both Later and Middle Stone Age people as they offered greater opportunities for the exploitation of marine foods, particularly shellfish.

8. REFERENCES

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A MEMBER OF THE ANGLOVAAL INDUSTRIES GROUP

IRVIN & JOHNSON LIMITED

Reg. No. 52/01693/06

ABALONE CULTURE DIVISION

NL/DO/01 28 June 2000

South African Heritage Resources Agency
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For Attention : Mary Leslie

Dear Mary

I would like to inform you that I&J has completed all excavations and construction. No further material which could be associated with the Birkenhead tragedy were found, so you could now send the material collected earlier for burial.

I have included the report done by the Agency for Cultural Resource Management for the rescue permit for your information.

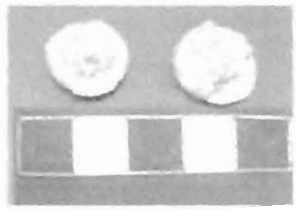
I&J still need to stabilise the hill containing midden material behind the three new buildings. This will be done with interloading bricks and will be completed by the end of July 2000.

Regards

NICK LOUBSER
FARM MANAGER

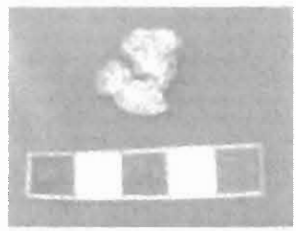
Object Category: A
Object Type: Historical - clothing
Date Object acquired: 22/12/1991
Accession number:
Description: Button, leather? Possibly two parts of same button
Origin: Danger Point, G12
Age:
No: 1
Image:

Object Category: A
Object Type: Historical - clothing
Date Object acquired: 22/12/1991
Accession number:
Description: Button, ?tin/pewter - covered in white corrosion
Origin: Danger Point, G12
Age:
No: 2
Image:



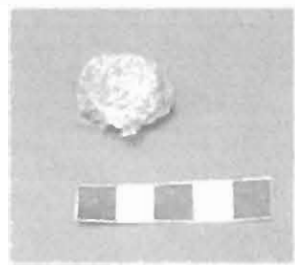
Object Category: A
Object Type: Historical - clothing
Date Object acquired: 22/12/1991
Accession number:
Description: Button, ?copper/brass
Origin: Danger Point, G12
Age:
No: 7
Image:

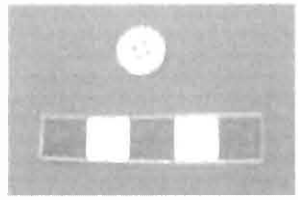
Object Category: A
Object Type: Historical - clothing
Date Object acquired: 22/12/1991
Accession number:
Description: Button, broken, ?copper
Origin: Danger Point, G13
Age:
No: 1
Image:



Object Category: A
Object Type: Historical - knife
Date Object acquired: 22/12/1991
Accession number:
Description: Knife, wooden handle (in two parts sandwiching fragments of blade)
Origin: Danger Point, G13
Age:
No: 1
Image:

Object Category: A
Object Type: Button
Date Object acquired: 22/12/1991
Accession number:
Description: ?copper/brass with material covering
Origin: Danger Point, G12
Age:
No: 1
Image:



Object Category:	A
Object Type:	Button
Date Object acquired:	22/12/1991
Accession number:	
Description:	White glass
Origin:	Danger Point, G12
Age:	
No:	1
Image:	

Object Category:	A
Object Type:	Leather strip
Date Object acquired:	22/12/1991
Accession number:	
Description:	
Origin:	Danger Point, spoil heap
Age:	
No:	1
Image:	-

Object Category:	A
Object Type:	Buckle
Date Object acquired:	22/12/1991
Accession number:	
Description:	Iron
Origin:	Danger Point, G12
Age:	
No:	1
Image: