Piecing together the past

By LEN DYALL

This article is the first in a two-part series on Aboriginal prehistory on the Newcastle coastline.

HOW long have the Aborigines been here? In some parts of Australia, there are ancient landscapes bearing evidence that the Aborigines settled this continent at least 40,000 years ago.

However, the Newcastle coastline is not an ancient landscape: it reached its present form only 3000 or 4000 years ago. When the sea level rose at the end of the last ice-age, it drowned all the Aboriginal campsites on the old shorelines. The camps we find today are fairly recent ones.

The oldest local site we know about was at Swansea Heads. It was first occupied 8000 years ago, before the rise of the sea.

What does an Aboriginal camp look like? Living at a camp generated rubbish — food remains, broken stone tools, rubble from making stone tools, and campfire ashes. Some of the rubbish does not rot away, and we usually identify old camps from the scatter of seashells and stone flakes.

At a heavily-used camp, the rubbish may accumulate over centuries to form a compacted layer, perhaps over a metre thick. We call this a 'midden'. We 'read' the history of the site by carefully cutting a trench through the midden until we reach the earliest occupation on the original ground surface. Middens preserve a great deal of bone, so that we can identify the species of fish, mammals and so on which were eaten there.

A large midden was discovered at Swansea Heads in 1971 during clearing of scrub. The site was seriously threatened by erosion, and a 'rescue dig' was carried out in 1972 by local volunteers under a National Parks and Wildlife Service permit. Many tens of thousands of items were recovered, and it has taken some years for experts all over Australia to identify and study all this material.

When first occupied 8000 years ago, this camp was located on an ancient sand dune a considerable distance from the shoreline but quite close to a strong fresh-water spring. The camp was used only lightly for the first 4000 years. Then heavy use began at the time when the sea level had finished rising and today's shorelines were established. The camp was then on the beach alongside an extensive oyster reef. Shoals of fish passed its doorstep on their way through Swansea Channel, and it was only a kilometre to other food sources at the rock platforms near the Heads or on the mudflats of the inner channel. Viewed as a base for gathering food from a variety of marine habitats, it was ideal.

After looking at all the material excavated from the midden, we tried to answer a lot of questions about what the Aborigines were doing at Swansea. How did they make their stone implements, and what were these used for? Which were the staple items of diet? Was the diet extensively marine, or supplemented by bush hunting? How were fish caught?

We have been able to prove that the stone implements were made from cobbles of chert collected in the tide pools under Swansea Heads. Most of the implements are neat knife-like blades about 3cm long. These blades, called 'Bondi points', are common on the east coast of Australia but ideas on their use are hazy: it has to be admitted that we know very little about the functions of prehistoric Aboriginal stone tools.

Every mammalian long-bone in the midden had been smashed into slivers. These were ground on a coarse-grained stone to form bone points. We actually found examples of both the grindstone and the finished bone implement. These bone points are fish-spear barbs — obviously fish-spearing was an important part of daily life.

A serious shortcoming in our results from the Swansea site arose because European limeburners in the 19th century dug the top off the midden, thereby removing the last 2000 years of its history. We have since filled in this gap by studying a midden at Birubi.

***Len Dyall is Associate Professor of Chemistry at the University of Newcastle.**

N.H. 29.7.1989

The Birubi Aboriginal site

16-7-84 NH

This is the second article in a two-part series by LEN DYALL* on the pre-history of Hunter Valley Aborigines.

LAST week's article described the prehistoric Aboriginal campsite at Swansea Heads.

The shell middens (rubbish heaps) left by the Aborigines at Birubi, at the northern end of Stockton Bight, used to cover about 5ha of the sand dunes, but are now largely destroyed.

In 1978 we obtained a National Parks and Wildlife Service permit to study the few small areas remaining intact.

This camp had three phases of occupation.

The material of the oldest phase was already scattered and was beyond hope of serious study, but stone tool array included a lot of Bondi points, just like Swansea.

We successfully excavated material from the other two Birubi phases and found that it spanned most of the 2000-year recent period we had missed out on at Swansea.

The medium-age phase at Birubi.

On the dunes behind Little Beach there are piles of shells about 30cm deep, and radio-carbon dating showed the earliest shells to be 1450 years old.

Three-quarters of the shells are pippy from the swash zones along the surf beaches, while the rest are species from the rocky headland.

Among the shells there are rather small amounts of fish, mammal, and bird bone.

The overall picture is that pippies provided the staple diet, lesser quantities of reef shellfish were collected from the rocks and hunting in both marine and bush habitats added variety to the diet.

The picture we get of the fishing methods is the same as for Swansea.

There is abundant evidence of making bone points from mammal bones for fish spears, while the chief species captured were bream, snapper and groper.

This site is more recent than anything studied at Swansea, and here we found a sharp change in stone-tool manufacture.

We excavated no Bondi points in these shell middens. Instead, there were numerous rather thick stone flakes which often showed signs of being woodworking tools. (Of course, wooden implements have long since decayed away.)

Quite a variety of rock types were used to make tools, the most popular one being a grey chert probably derived from the Nobbys headland at Newcastle.

The most recent phase.

The recent phase at Birubi was dramatically different from anything else we had seen.

The camp had been moved from the sand dunes behind Little Beach to the base of the rocky headland, where a midden 1m thick had accumulated. While the midden did contain marine shellfish, it was primarily made up of masses of fish bone.

Why the big change? The answer is that the shell fish-hook had been invented. It opened the way to effective catching of fish in the broken water around the headland, where fish-spearing would usually have been both difficult and dangerous.

The people who camped alongside the headland reefs lived primarily on fish. Other marine foods, lizards and mammals were far less important.

Kelpfish and wrasse — the two small 'trash' species which annoy modern rock fishermen — made up most of the Aboriginal catch, although snapper and bream were frequently caught also.

The camp is so recent (only 500 years old at its earliest occupation) that is gives us an archaeological connection with the Worimi people of historical times.

Among the Worimi, the men speared fish while the women used handlines.

How shell fish-hooks were made.

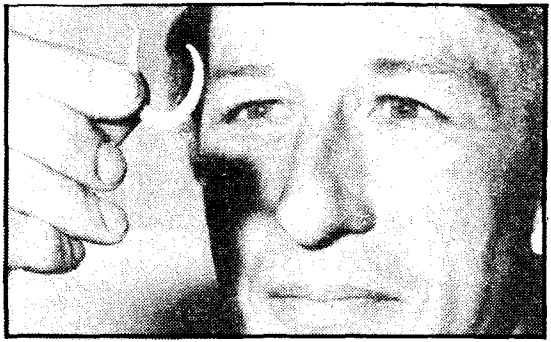
The hooks were invariably made from the heavy turban shell, which grows on the reefs.

Firstly, a spade-shaped piece was levered out and this piece was rubbed on an abrasive stone until its centre was worn through. This hole was then enlarged, first by chipping, and then with a finger-shaped stone file.

The elegant finished article was either C- or J-shaped, with a notch around the shank for tying on the line. Early European observers tell us that excellent lines were made of bark fibre.

Replacement of lost hooks required mass-production. For thousands of years, stone-tool manufacture had been the dominant industry, but at this particular Birubi camp it was supplanted by a new one based on shell.

[*Len Dyall is associate professor of chemistry at the University of Newcastle.]



Professor Dyall examines a shell fish-hook from the Birubi site.