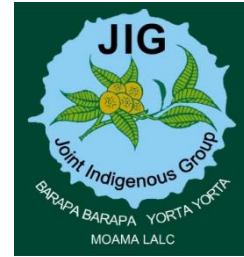


Ground Stone Tools of the Barapa at the Border Flywheelers Museum, Barham NSW

by Colin Pardoe, *Archaeologist*



Buteka Barapa Barapa-ja.

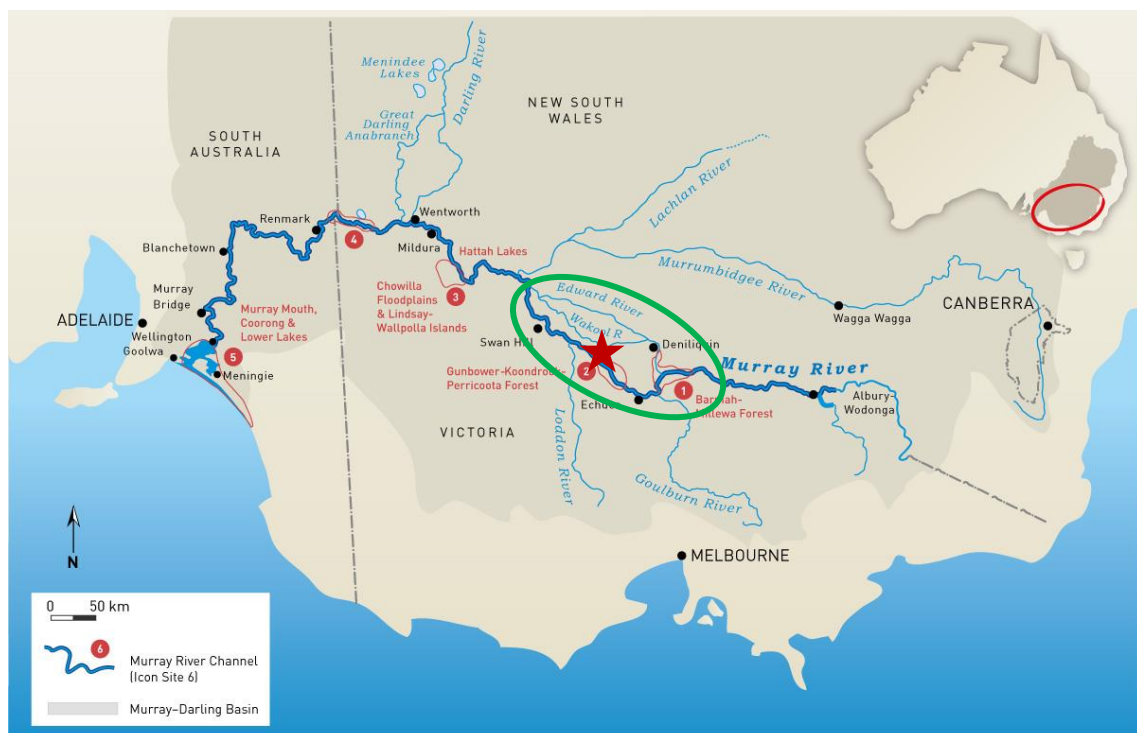
Nyuka yang-ga, Nyeng-ga-katch, pa nyerna-katch. Telka-yin yukal.

Welcome to Barapa country. Come here, sit down and listen. It will be peaceful.

Of all the things that we use to make a living, only the most durable will survive for hundreds or thousands of years. So even though string was probably the most important item for many hunter-gatherers, we look at ground stone tools because they are physical evidence of day-to-day activities back in the day. What are these implements and what can they tell us?

This leaflet provides some information on an important stone tool collection from the traditional country of the Barapa People of the Murray River in south-eastern Australia.

The Barapa are one of several Aboriginal nations whose traditional territory straddled the forests of the Murray River floodplain and encompassed the open plains to the north and south. This collection is from the forested floodplain and so would reflect activities carried out there. Personal items that were carried at all times might also be represented.



Nations including Wadi, Wamba, Barapa and Yorta lived along the Murray and associated rivers, on forested floodplain with open savanna country behind [green circled area]. The collection comes from near the Murray River [starred].

Although shell, bone, reeds and wood were used for cutting, slicing and piercing, stone is lacking throughout the region. The only stone available locally is the granite from Mt Hope, south of the river. This is also the source of small pieces of quartz which provided the only stone cutting tools. Granite is difficult to fashion and while it is used for grinding in other parts of the world, it is not used often in Australia. None of the 180 items in the collection are made from this stone.

Barapa people would therefore trade with their neighbours for stone implements, exchanging nets, reed spears, possum rugs and other items.

The Barham Collection

A collection of ground stone tools was handed over to Barapa representatives several years ago. It has become a drawcard at the Border Flywheelers Museum in Barham. These tools came from a single property near town. The property measures 365 ha. What can they tell us about life in the forest of the Murray River floodplain over the last several thousand years?

The following table lists the number and % by tool type. Some are unidentified, awaiting further study and comparison. The term manuport (meaning carried by hand) is used for items that have no apparent use markings, but which were clearly brought by people. In this part of the world, all stone is brought in by people.

tool type	number	%
Axe	46	25.6
Block splitter	4	2.2
Bogan Pick?	1	0.6
Dish	14	7.8
Muller	2	1.1
Topstone	4	2.2
Mortar	34	18.9
Pestle	8	4.4
Portable Mortar & Pestle	2	1.1
Kulki	15	8.3
Quandong Stone	1	0.6
Whetstone	5	2.8
Rolling Pin	1	0.6
cobble	5	2.8
pebble	3	1.7
manuport	13	7.2
ochre piece	3	1.7
Unidentified fragment	15	8.3
?	4	2.2
Total	180	100.0

Although many implements have several uses, it is convenient to classify them by major function [see table below]. Axes and wedges are very common and expectable here, in the riverine *forest*. The area is dominated by Red Gum and Black Box.

%	functions
31	forestry
11	grinding grain
33	pounding and mashing: seeds and general purpose
3	special purpose
23	unknown; to be worked out

Lowanna Smith measures a remnant canoe scar on a River Red Gum. Forestry work would include fashioning items from bark as well as heartwood.



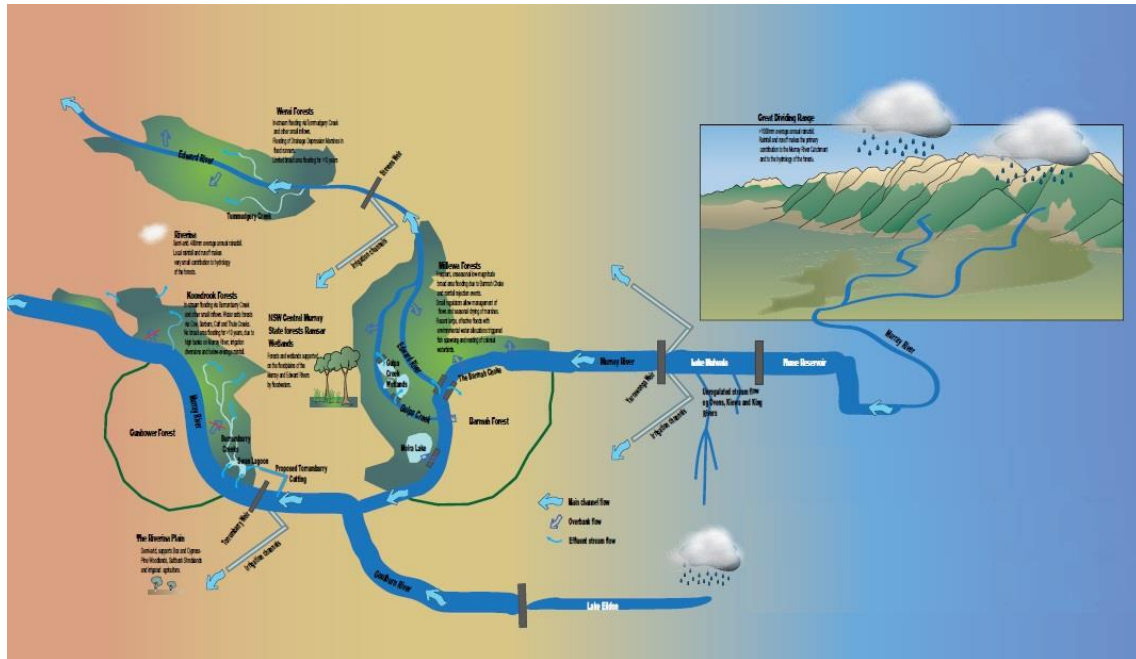
Mortars are one of the most common items across the world, as they are here (33%). Mortars operated as kitchen bench, chopping board, blender or mincer, food processor, mixing bowl, masher, grinder, and sharpener. They were the heart of every kitchen.

The best mortars have a fairly level top and bottom so that they give a good, flat working surface. Because mortars are a base stone that acts as an anvil, a second stone or wooden mallet is always needed for any kitchen task. This top stone is called a pounding stone or pestle. It is often a smooth, water-rolled cobble or symmetrical piece of rock that has to be held comfortably in the hand. Mortars and top stones would be used for some form of food preparation, both meat and vegetable, for every meal. Grinding and pounding are the main tasks.

A surprising find was the number of *seed grinding dishes* or fragments and their *topstones* (11%). While these are common on the plains, there are small areas of open land dotted throughout the forest. The grain there would have been a valuable and varied food.

The number of *unidentified items* or fragments (23%) is typical of archaeology. Sometimes we need more detailed investigation, of microscopic use-wear scratches or traces of residues showing what was being processed.

A stylised diagram of main rivers shows current extent of Red Gum forests.



Robyn Davis painted this representation of country and stone tools. Among the practical images of animals and plants that fed and sheltered her ancestors, Robyn has placed totemic ancestors and community. She has captured the feel for these long-lived implements, which are the white shapes, as they were found in paddocks; then taken to the Museum in Barham [in the centre]. In conveyor belt fashion, they then return to their country for safe-keeping.



For a detailed explanation of the painting, please refer to the following:

<https://borderflywheelers.com.au/aboriginal-keeping-place/>

Barapa stone artefact display at the Border Flywheelers Museum

Aboriginal people of the Murray River lived in a varied environment demanding a variety of techniques to harvest, hunt, collect and process food. The Barapa Barapa nation traditionally straddled the Murray River and encompassed the open plains to the north and south.

The following notes set out four topics within the display to provide focus and the possibility of additional resources [images and quotes].

1 Painting

Many people are aware that ochre has a strong spiritual significance– the blood of the earth. Everywhere across the globe where ochre is found, it has been used for practical reasons and has been incorporated in core religious understandings. Ochre is a hematite rock consisting of iron oxides – the same component of your red blood cells.

Ochre was also a very important item day-to-day. It has anti-microbial properties and so is a good preservative of fibres. Mixed with fat it was important in preserving fishing and other nets as well as wooden tools.

Ochre was also used for decoration. People would paint clan designs [think Scottish tartan] on their shields and their own bodies during corroborees, as well as images on the walls of their houses.

White and black were the other colours commonly used. While charcoal is readily available as a source of black crayon, the Barapa were fortunate in having access to gypsum. Their word for gypsum is 'Kow'. Just north of Barham, Cow Creek crosses the road. Across the Murray River, Kow Swamp is a large ephemeral lake that was the site of some of the earliest human remains found in the country [Kow Swamp; Cohuna].

Ochre piece [BS-ART-001]

This is a large piece of ochre rock. It is one of the largest pieces found on the Murray River in this region. Although there are some scuff marks on one face, it was never used traditionally. It may have been brought back and for some reason lost or put away, never to be seen again.



Mortar [BKP-017].

This is the mortar described in the pamphlet 'A Mortar from Koondrook Perricoota State Forest' [Pardoe 2013]. It was examined for residues by experts at the Universities of Queensland and Wollongong, who noted that apart from the expected starches, animal collagen and bone fragments, there was white powder on both facets. Further examination confirmed this to be powdered gypsum.



Gypsum crystals. These can be sourced from Cow Creek and powder could be sourced from the gypsum mine near Kow Swamp.

Images. There were several images in the pamphlet of corroborees. These were drawn in the mid to late 1800s and come from the vicinity of Barham and Thule Homestead. There are other possibilities for images including the inside of a hut, the barks from the British Museum etc.

2 Seed grinding

While seed grinding was an important component of the diet throughout the semi-arid grasslands and savannah of Australia, it has never been clear how important this resource was for the groups inhabiting the forests that border the rivers of the region, which flow in long sinuous lines across the plains. With the documentation of the East Barham Station collection we now have an estimate of the size and number of these dishes. There are pieces representing at least 13 dishes. Most of these are small fragments, but the material and thickness suggest two different sources.

There are open plains throughout the forests, and the practice of 'fire-stick farming' produced open country under the giant mature River Red Gums. Native grasses would have been available throughout this country and the grain they produced would have provided a valuable seasonal resource.



Warren Parsons, Neville Whyman and Des Morgan, of the Joint Indigenous Group. Small open areas are often sandy and would have supported a different set of vegetation, including grasses.

Dish [BS-GS-001a and b].

This is an exceedingly rare example of a complete dish with its topstone, or ‘muller’. You can appreciate the elbow grease put into the daily grinding of flour for *damper* or *Johnny Cakes* [journey cakes, of old]. Every dish needs its topstone to grind the flour. Women would work their fingers to the bone as the topstone slowly wore into a piece too thin to be held between fingers and thumb.



Seed grinding dish	<i>Tyerrinyuk Kuthap</i>
Muller or topstone	<i>Pulpa Tyerrinyuk Larr</i>

Dish fragment [BS-GS-009, 010].

For the archaeologist, a fragment counts as much as a complete item. We gain an appreciation of the size, use and durability of the complete piece, but the fragment [a small piece from the saddle between the two troughs] tells us that there was another just like the complete one. From the edges we can see that it worn through. It was then probably broken into pieces to be used as whetstones and topstones.



Map of the *Panaran*, or seed-grinding region of Australia [after Tindale].

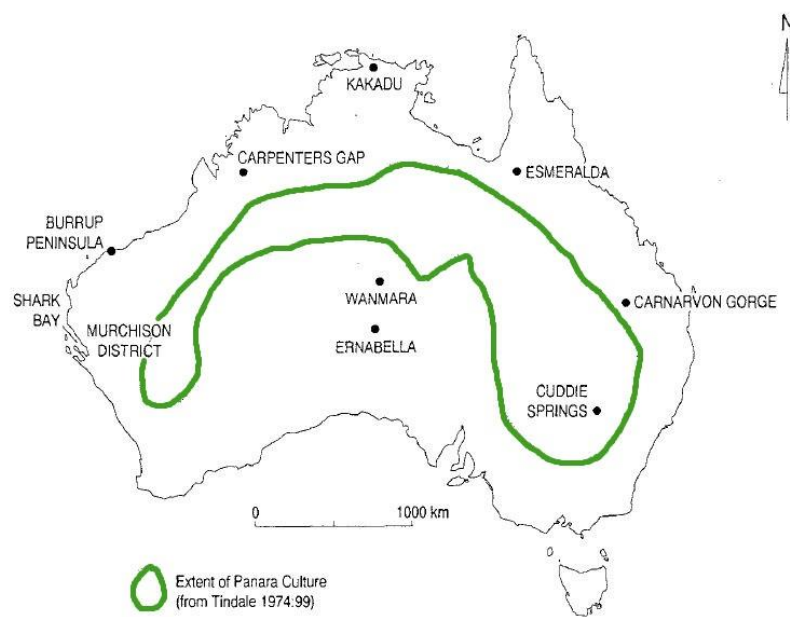


Figure 1: Principal areas mentioned in text (adapted from Grant 1992: Figure 7.5)

3 Recycling

Recycling is an increasingly important concept as we deplete minerals and other resources. In the past, people only had their own labour to produce and use tools. There were no domesticated animals, nor was there readily available fuel to run machines. Tools and resources were therefore much more valuable when measured in availability, cost [measured in person hours] and maintenance.

Tools were not thrown away when broken; they were repaired if possible, or recycled into something else. A worn out dish could become a whetstone or topstone; a broken axe could become a chisel or small hatchet; a broken anvil could be re-fashioned.

Recycling was more common in the past than you might think.

GS-088

Mortars were important for crushing hard seeds like Acacia and other foods such as bone fragments, as well as paints including ochre and gypsum. They make convenient anvils on which to make flaked stone tools or to crack nuts. A wayward blow will occasionally shatter the mortar. This one has not been recycled.



Hammers are common, although they are multi-purpose tools. Most of these have an upper and lower grinding facet, a facet around the edge from use as a pestle or hammer, and anvil pits. These items were often kept as pairs. In many languages they were referred to as 'big brother' and 'little brother'. The smaller would be used as a pestle to the larger mortar. Each could be used as a hammer depending on size and delicacy of operation required, with the other acting as the anvil, complete with a pit to hold the piece of stone or nut to be cracked.

Big Brother *Kurranduk*

Little Brother *Witheyuk*

GS-018

Small flattened pebbles are common tools. Their innocuous nature belies their importance. This is a typical non-descript hammer. The damage from anvil and pounding is evident.



GS-079

Otherwise unremarkable, the anvil pit is offset top and bottom, where there is also the remnant of a chip. These were probably in the middle of the hammer when it was broken in use, prompting smoothing of the broken end and continued use as the smaller of a pair.



GS-055

Sometimes items are just too worn out to be recycled. This hammer was finally discarded when both sides became too chipped to continue using the grinding facets. It may also have been the wrong weight and feel to continue using as a hammer for fine detail work.



Yirri Witheyuk

GS-012

Every axe needs its whetstone, yet these items were considered to be very rare. Few were seen in museums. As we have looked more closely, we appreciate how common they are. These pieces would have come from a worn out dish and the grooves attest to their long use sharpening axes and digging sticks.



Marap Marap

GS-052

Broken and re-used several times in its life, this cobble started as a large mortar similar to BKP-017. The upper mortar facet had a very large anvil pit, indicating a long period of use and possibly specialised for nuts such as quandongs. Then it was split by a couple of wayward blows in upper and lower anvil pit. The edges were smoothed and the piece was used as a pestle with a newer mortar [facing right, right image].



GS-021

Small mortar with a section broken at the original anvil pit. The edge was then smoothed and the mortar continued to be used, with a new anvil pit in the middle.



GS-084

This mortar suffered a break, but this edge was smoothed and the grinding facet continued in use for some time further.



4 Axes

If you live in a forest, you will need an axe. Although we think of using an axe or hatchet for chopping down trees, these polished stone axes were mainly used for lighter work. Bark sheets for housing and coolamons, and holes to get at possums, bird nests and honey were the main work of a stone axe. They had other minor uses such as using the butt end as a hammer, and the side as a convenient anvil for fine flaking of stone tools.

Our dear friend and colleague, the late Mr Norman Moore, was part of the Joint Indigenous Group documenting and conserving heritage in the Koondrook Perricoota State Forest.



We often think of stone tools as being simpler, easier and ultimately cheaper than modern tools of steel. Yet they required considerable investment and skill in all phases of manufacture. As a rough guide, if you took the hours required for the steps necessary for axe manufacture at the current average Australian hourly rate, you would find that an axe would cost in the neighbourhood of \$1,400.

Price of axes?

• Travel to quarry	5
• Detach suitable flake	2
• Shape rough axe blank	2
• Grind edges	6
• Polish	3
• Hunt kangaroo for sinew to bind handle	4
• Collect resin to fasten axe head to handle	1
• Collect wood and fashion handle	2
• Collect ochre to preserve handle	5
• Carry to corroboree for trading	10

Total **40 hours**

The Australian average wage is currently about \$36/hour [2023], giving a very rough price to the axe of \$1,400.

Even though you would take care of such an expensive item, over the years accidents would happen. This is often what we see in the archaeological record. We generally do not excavate complete items, but rather those that have been chipped when chopping; broken in half when anvilling; split when hammering.

The slightly raised clearing behind the shoreline trees is a large earth mound – housing for people living in the forest. Surrounded by trees, axes would have been an everyday tool.



Stone tomahawk for woodworking

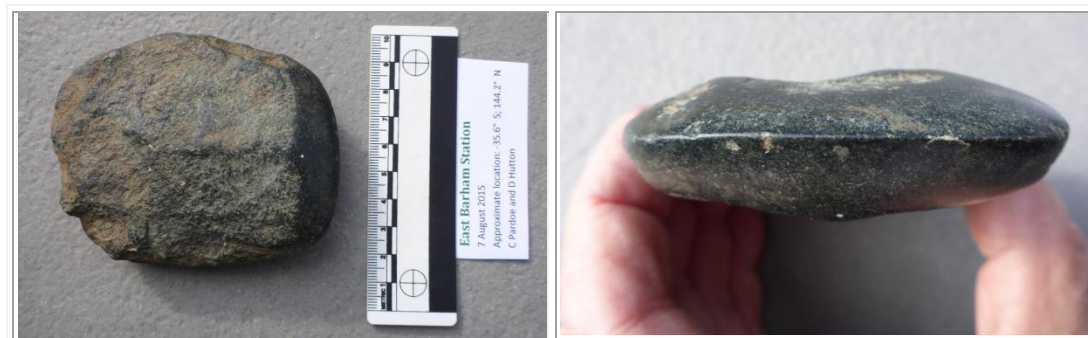
Tirr

Stone tomahawk for fighting

Pinwurrayi

AXE-011

Axes typical of the region come from Mt William and Mt Camel to the southeast. They are fashioned from greenstone, a material that is both hard and tough, qualities essential to an axe.



AXE-022

Although not necessarily from the same quarry, manufacture is similar to AXE-011, with the piece being flaked from the parent stone, flaked to shape, smoothed overall, then the blade polished, presumably before trading to neighbours, in this case to the north.



AXE-025

Not all axes came from the same place. While some materials might be inferior, local goods will often do the job. This axe is of a different material to those above and probably comes from upstream rather than to the southeast.



AXE-026

Sometimes we cannot help but imagine that items such as these belonged to a child. Perhaps they were the heavily reduced axe from earlier generations, or perhaps a small piece fashioned as a present.



AXE-002

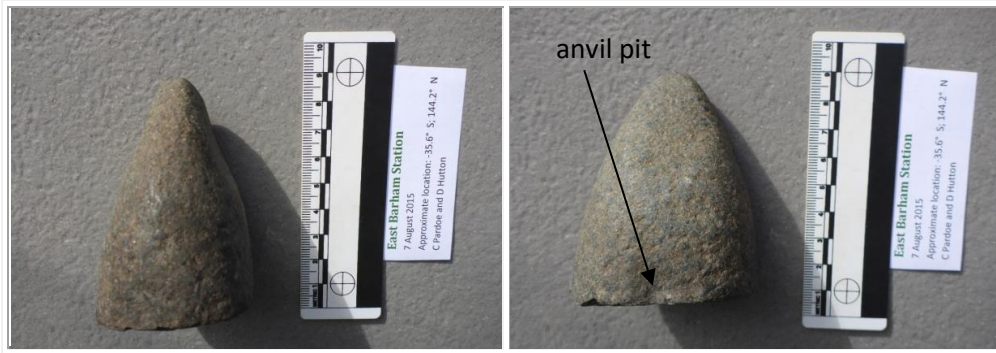
‘Block Splitter’. It is tempting to think that the difference between the thin-bladed axes and these reflects their use as wedges or heavy-duty axes. The blade is heavily worn.



AXE-010

Some artefacts remain mysterious because we do not know what they might have been used for. The material is similar to other axes. The shape, however, is very different, with a 'pinched' end and a rounded tip. It is most reminiscent of another enigmatic tool, the Bogan Pick. Only a few examples have been seen, mainly from around the Bogan River region in central NSW.

This piece has been split. If you look closely you will see the anvil pits on either side, suggesting that the axe had been used as an anvil and was hit once too often and once too hard.



Note about Border Flywheelers Museum

The Border Flywheelers Museum is a friendly regional museum in Barham. The museum works with the Moama and Deniliquin Local Aboriginal Land Councils as well as the Joint Indigenous Group. Members and the local community helped to establish the display of which this East Barham stone tool collection is a central part. Their close relationship with local Aboriginal community has allowed planning for long-term museum services necessary when caring for heritage locally.

<https://borderflywheelers.com.au/>

It is a great pleasure to be able to study and learn about the archaeology of this region. The hospitality, collegiality and friendship shown by so many people and organisations has made that study that much easier and that much more fun.

With best wishes,

Colin Pardoe Bio-Anthropology & Archaeology