

## FOUR WAYS OF WORKING STONE:

PECKING, GRINDING, KNAPPING AND PRESSURE FLAKING

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NOTE: Mr Webster has been making implements from various types of stone found in the area around his home in southeastern Queensland for many years. He has experimented with various rock types and several several tool manufacturing techniques. This interest and skill has developed from observations made of collection of Aboriginal artefacts made in this area. In this note Mr Webster records some of his observations.

### 1. Pressure Flaking

Pressure flaking is used on stones such as obsidian, jasper, agate, chalcedony, chert, ribbon stone, glass, quartz and quartzite. These are fairly soft and usually fracture conchoidally.

Pressure flaking is applied on very sharp angles to produce knives and points. As the angle becomes more obtuse the ability to press spalls from the core becomes progressively harder.

If tools made in these types of stone were to be used for percussion work (chopping etc.) the craftsmen left the angle of the cutting edge obtuse or it quickly crumbled on striking. Pressure-flaking is almost entirely for acute cutting and sawing edges but it is occasionally used to trim knapped axes.

A turnip-shaped stone is best for use as a fabricator and these have to be made. The chip to be pressure flaked can be held against the bent upper leg <sup>when</sup> ~~and~~ flat against the ground or on the heel. Very hard stone can be pressure flaked if support is kept directly under point of applied pressure.

### 2. Knapping

Knapping is done wherever stone quality permits, as with hard rhyolite, schist trachyte, hard conchoidal slate and granite.

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There are particular advantages over other methods: it is very quick and produces a very sharp edge; a large quantity of stone can be accessed before the harder labour of pecking, grinding or and hafting; displaced chips can be utilized for points, knives and similar tools. Cores must be bigger than the tool required. Striking stones should have grainy flat or earthy fracture. This is for safety reasons. The angle of strike takes the chips away from bare feet but lines the eyes up if the striker fractures. This type of striking stone tends to power and if chips do break off they fly slower and are blunter. Spherical or elongated rounded pebbles are best. The protrudant sides next to the percussion point give protection from chips. The <sup>striker</sup> core should be 50 to 100 mm in diameter depending on the job. The cutting edge is the hardest part to work on axes and sometimes to get a fine point one moves some distance around the core and only after a good point is achieved does the butt get done.

In knapping a striking plane is needed on the core. Rounded stones are difficult to break open; the longer they are the more easily they break and the more spherical the harder. Aboriginals used knapping quality stones for hearths and were often rewarded with a good slice or chipping plane. Once a plane is achieved the knapping depends on what tool is required.

Selection of cores of knapping quality is easier early in the morning or after a shower of rain. When stones start to dry the knapping quality stones will appear wet while the soft porous stones appear dry.

One type of knapping on earthy fractures dolorite and basalt is never intended to produce a fine edge but to remove material from core to save grinding labour. This technique ruins good quality knapping cores. Grinding is sometimes used to aid knapping) by removal of a hinge fracture near the cutting edge: 2 a) when knapping plane becomes too steep on one face of axe or 3 b) when a major flake would have to be struck off to produce a fine point and loss of weight might leave the implement too small. Pecking is fatal to knapping quality cores.

Solid core percussion tools appear to be usually made of grainy fractures or grainy conchoidal fracture. Glass-like conchoidal fracture was avoided because a solid core tool that fractures in use while held in the hand can make a mess of the palm sinews.

### 3. Grinding and Pecking

Grinding can be used on all stones but Pecking can ruin many types. Grinding and pecking are usually used on hard stones with earthy fracture (dolorite-basalt etc.). A fine

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edge cannot be knapped on this type of rock but the shoulders can be knapped to save grinding or pecking or notches knapped for hafting or core butt trimmed.

Grinding is done by friction against a gritty stone, usually of sedimentary origin. The longer the stroke the quicker the grinding. If the core is held in both hands and the abrasive stone is fixed the grinding is quicker than if the core is held in one hand and the grind stone in the other. The edge is ground into a Gothic Arch. If it is ground flat and sharp a tool of dolomite or basalt will soon crumble with use. Pecking is done on earthy fracture type rocks by striking the core repeatedly with a sharp stone where material is desired to be removed. A twisting movement at time of impact speeds up the process. If pecking is done on knapping quality rocks the tools will often fall to pieces. Pecked axes should have the edge ground to give a longer life to them. The angle of the edge is the Gothic Arch.

Very small microliths can be worked when tucked into a knot hole on a log. They are held <sup>in</sup> ~~within~~ one hand and worked with a fabricator or held in with a heel and a punch stone and a striker is used.

There are particular benefits to be gained from being able to make stone implements, including a) recognition of artefacts, b) recognition of core localities and c) testing possible use of artefacts with replicas.

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