

## Fact sheet 6

### Tools and tool marks

Different tools applied in the quarrying process leave marks on the stone surface that can be interpreted and even used for dating the quarries if the preservation is good. There are three main types of tools applied in quarrying:

1. Stone tools (stone hammers and pounders)
2. Chisels (and mallets)
3. Picks

The use of stone pounders leaves a smooth surface displaying a dense pattern of percussion marks from the blunt tool. Corners tend to be rounded.

Channelling with metal tools leaves parallel grooves on the quarry face that may differ in

appearance depending on the rock type, tool and method of channelling. Parallel, curved grooves are often interpreted as pick marks. The curving is a result of working from one position at the time, and the marks thus define a circle in which the quarryman's arm and the pick define the radius. Parallel, straight grooves are interpreted as marks from chisels. The inclination of the grooves tells us something about how the channels progressed; steeply inclined grooves are worked from one side, horizontal ones are worked from the top, and "herringbone-pattern" reflects frequent change of position.



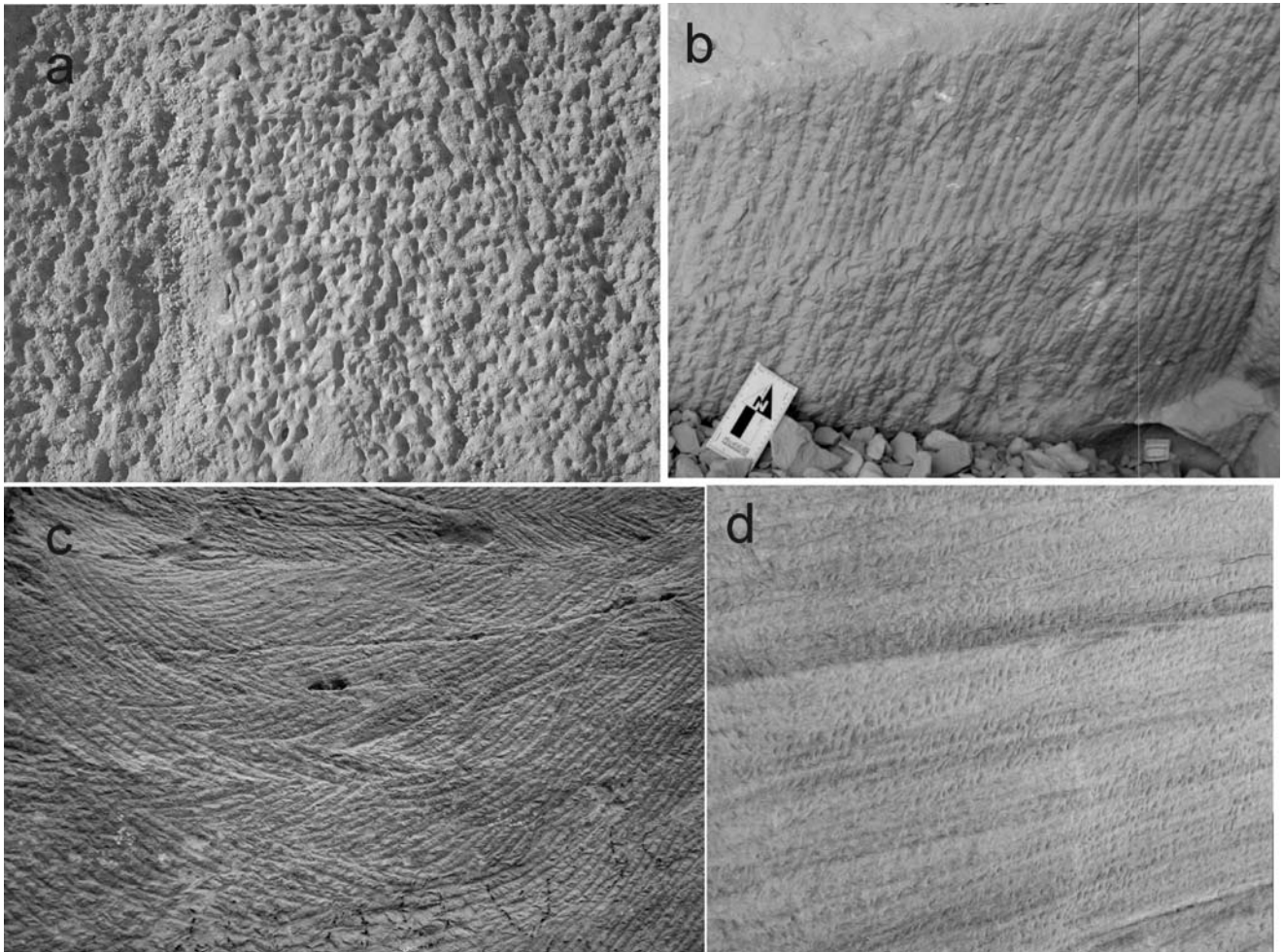
*Marks from stone tools on a silicified sandstone block, Aswan, Egypt.*



*Outcrop in silicified sandstone worked by stone tools, Aswan, Egypt.*



Examples of ponders. Left: granite cobble stone from the river bed, Aswan West Bank, Egypt. Middle: manufactured granite ponder, Chephren's Quarry, Egypt. Right: hafted stone hammer made of imported rock found in Widan el Faras Basalt quarries, Egypt.



Tool marks on quarry faces. a) stone hammer marks on quarry face, silicified sandstone, Aswan West Bank, Egypt (New Kingdom), b) inclined chisel marks on inclined shifts, sidewall of a channel in sandstone, Aswan West Bank, Egypt (Greco-Roman), c) assumed pick marks (curved shifts and changing directions) on a sandstone quarry face, Petra, Jordan (Nabatean), d) inclined chisel marks and horizontal shifts, marble quarry, Thassos, Greece (probably Byzantine)