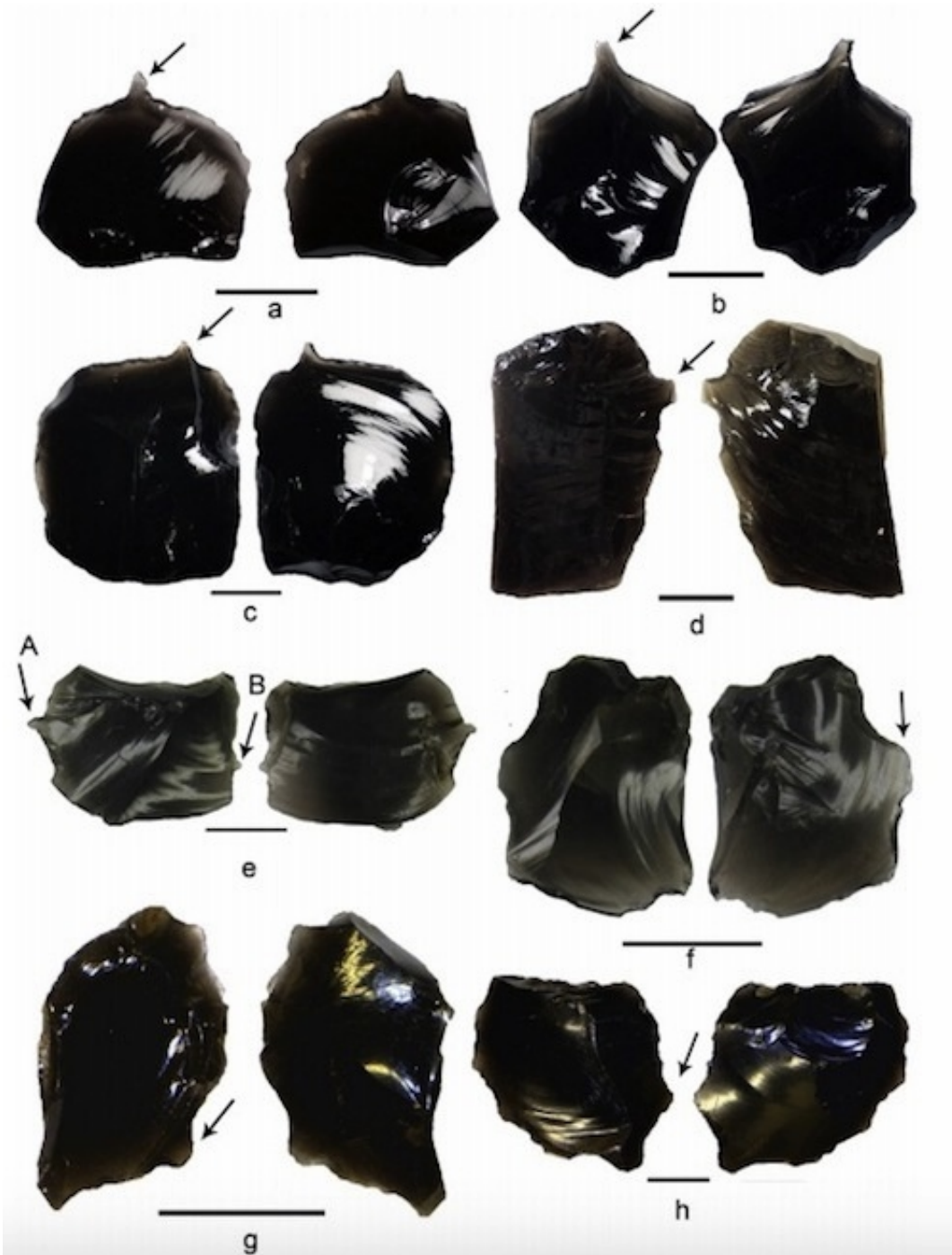


South Pacific Islanders may have used obsidian 3,000 years ago to make tattoos

July 11 2016, by Bob Yirka



Obsidian artifacts found at the site of Nanggu/Solomon Islands. Credit: Kononenko et al. *Journal of Archeological Science*, DOI: 10.1016/j.jasrep.2016.05.041

(Phys.org)—A trio of researchers has found evidence of obsidian tools being crafted for use in creating tattoos approximately 3,000 years ago by South Pacific Islanders. In their paper published in the *Journal of Archaeological Science: Reports*, Nina Kononenko and Robin Torrence with the University of Sydney and Peter Sheppard with the University of Auckland, all in Australia, describe experiments they conducted using cut obsidian to create tattoos on pig skin. They reported what they found, and why they believe prehistoric people used a variety of techniques to create tattoos.

Anthropologists in conjunction with archaeologists have bemoaned the lack of evidence of tattooing in ancient peoples due to skin degeneration. To get around this problem, some have sought evidence in the form of the tools that might have been used, but this, too, has led to problems, as it is believed that many such tools were made of [biodegradable material](#) such as fish bone. In this new effort, the researchers tested the possibility of using obsidian as a tattoo tool by ancient people living in the South Pacific.

[Obsidian](#), the researchers suggest, would have been an obvious choice, due to its sharp, glass-like features. They focused their attention on the Solomon Islands as a possible site of early tattooing activities for several reasons—the region's long history of tattooing; its importance there; easy access to obsidian (it is formed as lava from a volcano cools); and most importantly, obsidian artifacts that have been found there at a site called Nanggu and dated back approximately 3,000 years, suitable for creating tattoos—prior research had suggested obsidian tools were used to tan hides, but the researchers note that a lack of large animals on the islands would have meant there were no hides to tan. To test the possibility that the artifacts had been used to create tattoos, the researchers gathered obsidian samples from island sites, fashioned them into roughly the same shapes as the artifacts, then used them to create tattoos on pigskin. Afterwards, they compared microscopic views of the artifacts and those

tools they had created and used.

The researchers report that they were able to create tattoos in the pigskin and that the sample tools they created looked remarkably similar under the microscope to the artifacts—they had similar signs of use, such as chipping, rounding and blunting as well as thin scratches. In addition, the [artifacts](#) had traces of ochre, charcoal and blood on them. Thus, the researchers suggest their experiments offer strong evidence of [obsidian](#) tools being used by early islanders to create [tattoos](#).

More information: Nina Kononenko et al, Detecting early tattooing in the Pacific region through experimental usewear and residue analyses of obsidian tools, *Journal of Archaeological Science: Reports* (2016). [DOI: 10.1016/j.jasrep.2016.05.041](https://doi.org/10.1016/j.jasrep.2016.05.041)

Abstract

Although tattoos have been observed on mummies dated to over 5000 years old, the generally poor preservation of human remains makes it difficult to use this type of adornment to understand how inscriptions on the body have been used to define self and social ascriptions. A potential method for detecting tattooing is to identify the tools used to make the markings. To assist recognition of tattooing tools, an extensive set of experiments was conducted in which retouched obsidian flakes bearing various pigments were used to pierce pig skin. Diagnostic use wear and residues associated with tattooing were identified. To illustrate the value of these results, traces preserved on a highly recognizable class of obsidian retouched artefacts from the Nangu site (SE-SZ-8) in the Solomon Islands were analysed. Results indicate that these tools were used to pierce skin and may therefore have been tattooing implements involved in social, ritual and/or medical practices.

Citation: South Pacific Islanders may have used obsidian 3,000 years ago to make tattoos (2016, July 11) retrieved 23 April 2024 from <https://phys.org/news/2016-07-south-pacific-islanders-obsidian-years.html>

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