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Scientific storm over carbon dating claims

By LEIGH DAYTON
Science Writer

Evidence' leading to hotly disputed claims of scientific tampering; which could invalidate hundreds of scientific studies, has emerged from a recent Sydney conference.

If the extraordinary findings presented at the Australian Archaeometry Conference are replicated by further analyses, the reputation of a leading expert in dating rock art may be in tatters.

Further scientific feathers could fly as the United States' leading science body; the National Science Foundation (NSF), reportedly looks into the matter. Yesterday, a spokesman for the NSF inspector-general told the *Herald* he could "neither confirm nor deny" the investigation.

At the recent Sydney gathering, Dr Warren Beck and Dr Timothy Jull, radiocarbon dating experts at the University of Arizona in Tucson, presented findings suggesting to leading experts that samples of "rock varnish" collected, prepared and given to them last year for radiocarbon accelerator mass

spectrometry (AMS) dating, by Dr Ronald Dorn of Arizona State University in Tempe, could have been adulterated with finely ground bituminous coal and pulverised wood charcoal, producing predetermined ages.

Samples later collected "millimetres" from Dr Dorn's contained no coal or wood-like remains, Dr Beck told the *Herald*. Dr Dorn strongly denies the samples were altered. "It's very unfortunate that ... they chose to present the paper without asking me," he said.

Mr John Head of the Australian National University Quaternary Dating Research Centre said "it's very odd" to find coal and charcoal-like substances in such a sample.

A Sydney University radiocarbon dating expert, Dr Mike Barbetti, said old coal and young charcoal could be "mixed" into a sample to alter the age of the rock carvings covered by the varnish, a natural finish of iron oxides and manganese deposited by micro-organisms living on the rock surface.

However, Dr Dorn claimed his recent work showed it was "not unusual" for samples to contain materials differing widely in age, or for nearby samples to contain no carbon at all.

Experts estimate the age of rock carvings by using AMS radiocarbon dating on traces of carbon-bearing material blown onto the varnish by the wind.

"A lot of sites don't have coal deposits or coalmines very close by, and there weren't any coalmines 30,000 years ago," Mr Head said.

Although Dr Beck acknowledged the sensational nature of the findings, he said his team was not accusing Dr Dorn of wrongdoing.