

Aboriginal archaeological discovery in Kakadu rewrites the history of Australia

Tony Wright
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Jabiru, Northern Territory: Aboriginal people have lived in Australia for a minimum of 65,000 years, a team of archaeologists has established - 18,000 years longer than had been proved previously and at least 5000 years longer than had been speculated by the most optimistic researchers.

The world-first finding, which follows years of archaeological digging in an ancient camp-site beneath a sandstone rock shelter within the Jabiru mining lease in Kakadu, Northern Territory, drastically alters the known history of the trek out of Africa by modern humans, according to the leader of the international team of archaeologists, associate professor Chris Clarkson of the University of Queensland.



The discovery of this axe inside the Kakadu National Park has rewritten the history of Australia. Photo: Glenn Campbell

The findings, which are already causing intense interest in archaeological circles across the world, have been peer reviewed by internationally recognised scientists and are published this week in the world's most prestigious science journal, *Nature*. Among the trove of discoveries are the world's oldest stone axes with polished and sharpened edges, proving that the earliest Australians were among the most sophisticated tool-makers of their time: no other culture had such axes for another 20,000 years.



Traditional owners Simon Mudjandi, Rosie Mudjandi, May Nango and Mark Djanjomerr at the rock shelter. Photo: Glenn Campbell

"The axes were perfectly preserved, tucked up against the back wall of the shelter as we dug further and further," Professor Clarkson told Fairfax Media.

"There was one on the surface, another further down that we dated at 10,000 years. Then there were quite a few further down still which were able to date at 35,000 to 40,000 years, and finally one at 65,000 years, surrounded by a whole bunch of stone flakes."

The team had also found the oldest known seed-grinding tools in Australia, a large buried midden of sea shells and animal bones, and evidence of finely made stone spear tips.

Professor Clarkson said one of the most striking finds was the huge quantity of ground ochre, right from the oldest layers. This suggested the first humans to populate Australia were already enthusiastic artists, and had continued to be so through their continuing culture in an area known for its spectacular rock art.



Traditional owners May Nango and Mark Djanjomerr with a stone axe found at the site.

One major significance of the discovery is that archaeologists will have to recalibrate previous assumptions about the journey out of Africa by modern humans. Most academics believe the trek began between 80,000 and 100,000 years ago, but until now there was no solid evidence that humans had reached south-east Asia - let alone Australia - for anything beyond 50,000 years.

"Now we know humans were living in northern Australia a minimum of 65,000 years ago, the search will be on to discover each of the steps they took on the way," Professor Clarkson said.



The discovery also confirms that Australian Aborigines undertook the first major maritime migration in the world - they had to sail a minimum of 90 kilometres across open sea to reach their destination whatever route they took in their long journey out of Africa.

No other humans had undertaken such a journey 65,000 years ago. However, after crossing between islands, they could have walked the last stretch between Papua New Guinea and northern Australia because sea levels were so low at that time, Professor Clarkson said.

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The discoveries also challenge earlier assumptions that the arrival of Aborigines caused an abrupt extinction of the megafauna which once roamed the continent.

The new work shows the earliest Australians occupied the land for around 20,000 years before megafauna such as the Diprotodon - a giant, wombat-like creature weighing almost three tonnes - and the giant kangaroo died out.

The work concluding that humans had occupied the shelter beneath a sandstone massif in Kakadu for 65,000 years was undertaken by professor Zenobia Jacobs, using advanced single-grain optically-stimulated luminescence dating techniques.

Earlier digs at the site, known as Madjedbebe, stretch back to the 1970s. But carbon dating and earlier methods of luminescence dating were unable to establish that occupation had extended beyond 47,000 years.

Professor Clarkson and his team were granted permission to dig the area under a landmark agreement that gave the traditional owners, through the Gundjeihmi Aboriginal Corporation, the right of veto and consultation over all aspects of the work on their land.

The team feared they would have to abandon the site when they found the remains of the first of 17 bodies they would encounter buried beneath the rock shelter. But the agreement held - the Mirrar people of Kakadu agreed the remains could be removed for study, and placed back in the ground when the work was completed.

The Mirrar people, supported by thousands of protestors, successfully forced Energy Resources of Australia to cease its mining project at Jabiru in 1999 and to return the mine - which is within two kilometres of the dig site - to the natural landscape.