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JAWBONE FROM KENTS CAVERN COULD BE FROM THE FIRST NEANDERTHAL EVER FOUND IN BRITAIN

University of Hull carries out significant analysis of ancient skull fragment

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A piece of jawbone excavated from Kents Cavern has been analysed by the University of Hull's Centre for Medical Engineering and Technology this week, and the findings of a detailed CT scan might provide evidence that the fossil is actually Britain's first example of a Neanderthal.

The fragment of maxilla (upper jaw) containing three teeth was first unearthed 80 years ago in 1927 within Kent's Cavern during an excavation by the Torquay Natural History Society.

Sir Arthur Keith, who was Britain's leading anatomist of the time, first identified the specimen as that of a modern human (Cro magnon). The fossil had been at Torquay Museum since the 1920's, but it was learned recently that the jawbone was actually strengthened with glue soon after it was excavated, and this placed its radio-carbon date in doubt.

Originally, the piece was thought to be about 31,000 years old, but the team at the Natural History Museum are wondering if the jawbone is actually more ancient, perhaps from a Neanderthal.

The research was initiated when Dr Roger Jacobi and Professor Chris Stringer of the Natural History Museum obtained new radio-carbon dates for animal bones that were found in cave sediments directly above and below where the jaw fragment was found at Kents Cavern.

These indicated that the layer in which the maxilla was found dates to between 37,000 and 40,000 years ago and, if the jawbone fragment is a similar age, it would be even more significant than first thought.

If the jaw proves to be Neanderthal, then Kents Cavern will not only be the only place in Britain where there is direct evidence that Neanderthals once lived, but also it would confirm that Neanderthals spread across Europe and reached Britain far earlier than is currently thought.

More follows

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Dr Roger Jacobi said: "Hull University has a micro-CT scanner capable of scanning the sample at a very high resolution. The scan of the jaw fragment will take six hours, but it will then be possible to create a three-dimensional computer model of it and even a plastic replica. This will be used to ascertain whether the jawbone and teeth have been put back together correctly, as they were found in fragments."

"Hull is one of a few universities to possess such specialist equipment and we are extremely grateful that we have been able to use their facilities and expertise to carry out this research. The alternative would have been to make a plaster cast of the fossil and this process would have almost certainly damaged the fragment."

Further research on the jawbone fragment is planned. Prof Chris Stringer and Erik Trinkaus, of Washington University in St Louis, USA, will be carrying out a physical examination of the specimen to see if it carries any features of either modern humans or Neanderthals.

A tooth from the jawbone will be extracted and sent to Oxford University, where researchers will carry out DNA analysis to see if any traces of Neanderthal DNA can be detected. Whatever the results, this specimen will occupy an important place in the British prehistoric record.

Commenting on the research, Kents Cavern Managing Director Nick Powe, whose family have run the caves for five generations, said:

"We are really hopeful about the findings of this new research. The heritage of Kents Cavern gets more and more interesting all the time, and the cave is always full of surprises.

"Visitors really can step back in time to the Stone Age here, and this latest scientific investigation could show that man's occupation at Kents Cavern is even older than first thought.

"Whilst the original jawbone excavated on 14 March 1927 is rightly in the safekeeping of Torquay museum and will return there after examination, we have a replica of it here too which people can see along with various other artefacts found in the caves."

Kents Cavern is Torbay's oldest visitor attraction and, as well as the stunning underground caves, visitors can also enjoy an 80-seater licensed café, retail shop and exhibition galleries promoting the geological heritage and archaeological importance of these famous Torquay caves.

NOTES TO NEWS/PICTURE DESK

- 1) For further information and interview or photography/filming requests at Kents Cavern, please contact Nick Powe on (01803) 215136 or e-mail: nickpowe@kents-cavern.co.uk or see <http://www.hull.ac.uk/05/aboutus/news/nov06/skull.html>

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