

The Condover mammoths

Russell Coope¹

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There is a difference between science written up and science written down. This was to be a personal account of the events of recent months since the discovery of the mammoths at Condover. The author is a trained palaeontologist with an interest in Ice Age natural history and as such was often asked to come to see prehistoric monsters of one sort or another and the majority of these turn out to be shire horses.

In October 1986 when he was first contacted with the news of the Mammoth being found in peat in Shropshire he was immediately suspicious - peats were superficial deposits laid down after the last glacial advance - and the general opinion was that mammoths had become extinct before the end of the last glacial advance.

Russell Coope travelled to John Norton's garage and at first was confronted by deer bones. However, the bones of interest were at the very back - his first sight was of the enormous femur, undoubtedly that of an elephant, but the teeth visible in the jaw had layering much wider than of any mammoth he had ever seen before - it must be a circus elephant was his first thoughts.

Nevertheless, within a very short time he had become convinced that this was indeed a mammoth and the most exciting discovery of Ice Age natural history this century and probably the most exciting ever for Britain.

Dr Coope first of all made his acknowledgements. He thanked Eve Roberts who had first found one of the bones whilst walking her dog and been observant enough to think this unusual and report her find. He thanked Geoff McCabe who had organised all the excavations, the volunteer workers and subsequently the funding and ultimately the exhibition of the mammoth. He also thanked Adrian Lister from Cambridge who remarkably had applied to the Natural Environmental Research Council (NERC)

for a grant to work on late glacial mammoths - months before the discovery of the mammoth - and actually got his money! Adrian had taken charge of the real science of the skeleton. He thanked too all the many volunteers who had painstakingly sifted through a huge pyramid of mud removed by a mechanical excavator in far from the best of conditions.

He went on to describe the environment from where the bones were excavated. It soon became clear that the bones were not from the peat but from clays underlying the peat. The peat had yielded a single bear toe and the red deer bones stored in John Norton's garage. It turned out that the site was a large flat bottomed hollow with steep sides - it was a kettle hole, formed when large blocks of ice are left in isolation as the glacial front retreats and become insulated by overlain sediments and associated vegetation. The blocks of ice finally melt forming hollows on the landscape that can be filled with sediment and pond vegetation and animals accumulate.

Dr Coope showed slides explaining the geological make-up of the hollow. The floor was till, a stiff buff coloured clay containing pebbles which were almost entirely Welsh erratics. The edges were pink clays with layers of gravel and sand. There is evidence of another kettle hole within the vicinity and it is hoped that further discoveries may be made as the quarrying operation progresses.

Dr Coope explained the evidence that convinced him this was a mammoth. Some bones had traces of a vivid blue stain. This was caused by an hydrated iron phosphate: vivianite. Often this blue colour had crept into the covering soil and volunteer workers would know that bones would be present in the close vicinity. Vivianite takes thousands of years to develop.

Dr Coope had never seen a mammoth so well preserved. Bones stored in plastic bags smelled when the bags were opened indicating that the decaying process was continuing. He had boiled some of the bones in order to extract protein for radioactive dating and the result was soup and a marvellous cooking aroma. On condensing the protein he had extracted 'Bovril!' He assured his audience that he had however refrained from tasting it.

Dr Coope had persuaded the volunteer washers and cleaners to preserve the washings also and from this he had already discovered much about the natural history of the region and he still had much material to sift through.

On the day that the BBC's Blue Peter came to record the excavations, while Dr Coope was talking he suddenly spotted a tooth and gradually uncovered another lower jaw - this turned out to be a second mammoth and a juvenile. First thoughts were that this was a mother and baby, But Adrian Lister persuaded him that this might not be so. Further sifting produced bones from two more juveniles.

What do we now know of the mammoth group? Looking at the wear patterns of the teeth of the adult it can be deduced that this was between 30 and 35 years old when it died. Some five years before it had died it had received a strong blow to its shoulder blade which had fractured and subsequently healed perfectly with no apparent further deformity to the skeleton.

On examination of the epiphyses of bones there is evidence that it was still growing. Comparing this with modern elephants, females stop growing in their mid-20s. However, males carry on growing for some time - the evidence suggests therefore that this was a male.

The juveniles had teeth indicating ages of 5 years old for one and between 3 and 4 years old for the others. The pelvises of two of the juveniles had marked dissimilarities and suggests that one was male and one female. None of the skull of the adult and only fragments of the skulls of the juveniles have been discovered. Those fragments that have been preserved had attached to them Black Fly pupae of the genus *Phormia*, blow flies that lay their eggs on carcasses.

All this evidence points to the animals dying with their bodies below water and their heads

above resting on mud and dung deposited at the edge of the pool.

All methods of dating indicate that the mammoths died about 12,800 years ago - this is 5,000 years younger than any other known British mammoth. The adult is the only one so complete - all that is missing is the skull and the tail.

Many scenarios for the death of the mammoths can be imagined. The dating seems to coincide with a brief but intense climatic amelioration. There was a rapid warming in this region. Some insect remains found were typical of arctic conditions whereas others were of temperate climate origin. It seems likely that the mammoths were migrating from the south when they became caught. Their general health seems to have been good and there was no evidence of rickets or deficiencies in their diets, but the vegetation in this area must have been relatively poor with only a few birch trees and lush vegetation just in damp patches, such as the kettle hole at Condover. Many questions remain and research continues. For instance, there is an attempt to extract DNA which may tell us more about the family relationships.

The Shropshire Geological Society in conjunction with the Education Services and Museum Services ran a Schools mammoth Competition. The prize for the youngest age group was a 2 foot tall cuddly mammoth donated by Merrythought. The winner of the next age group received an individually designed machine-knitted sweater with a mammoth motif. The next eldest group winner enjoyed a trip to Cardiff to visit the dinosaur exhibition and the eldest group winner spent a day behind the scenes at the Natural History Museum in London. Runner up received badges. Prizes would be awarded to the winners at the opening of the mammoth Exhibition at RAF Cosford, on 1st April 1988.

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