

From excavation to exhibition in 50 years: the ‘Maidenhall Mammoth’ from Ipswich, Suffolk, UK.

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Abstract: In 1975, after digging trenches for sewage pipes at Stoke High School at Maidenhall in Ipswich, UK, the partial skeleton of a steppe mammoth (*Mammuthus trogontherii*) was discovered along with the disarticulated remains of other ice age animals about 3 metres below the ground. An excavation the following year recovered even more material (see images above and directly below). Known as the ‘Maidenhall Mammoth’, the skeleton dates to about 200,000 years ago during the ‘Aveley’ Interglacial, a phase formally known as Marine Isotope Stage 7. At about 40% complete, this skeleton is one of the most important examples of its species from this time period. Furthermore, it is an adult with a shoulder height of only 2.3 metres and is the smallest example of its kind known from Britain. Along with evidence from elsewhere in Britain, it indicates that the species shrunk significantly from a much larger 4 metre shoulder height 500,000 years before.

A small selection of bones from the skeleton were on display at the local Ipswich Museum for almost 30 years as well as a smaller number on display at Stoke High School in Maidenhall for 6 years. As part of the complete redevelopment of Ipswich Museum currently taking place, with an opening date in 2026, the whole skeleton will finally go on permanent display, along with other associated remains. This will require many months’ work to clean, consolidate and repair many dozens of bones that are quite fragile and then mount them. The skeleton will be presented on a tilted plinth, lying on its side as if still being excavated. This will be the first time that all the bones of the skeleton have been reunited in 50 years.

The excavation and subsequent work:

In 1975, the then geological curator, Robert Markham, discovered some vole teeth in spoil heaps next to the sewage trenches. This led to the discovery of mammoth bones, including a mandible, *in situ* at the bottom of the trenches. The specimens were recovered, and the trenches were temporarily backfilled.

In 1976, the site was professionally excavated by a team led by archaeologist John Wymer. Much of the remaining skeleton, including ribs and limb bones, was discovered. Some bones, such as those of a forefoot, were articulated (below).



In the 1990s, with the help of Museum conservator Robert Entwistle and geological curator Robert Markham, the best material was put on display for about 30 years until October 2022. This included a partial mandible, 5 articulated dorsal vertebrae, partial ribs, a forefoot, distal ends of a humerus and radius, and a complete tibia and femur (below).

In 2022, volunteers, including those from GeoSuffolk, assisted the natural science curator, Simon Jackson, in documenting the material. This included the bones on display, those on loan, and those in museum store, with about 20% of the skeleton identified. The material was ready for the next phase of work.



A star exhibit in the ‘new’ Ipswich Museum: Research by mammoth experts Professor Adrian Lister (Natural History Museum, London) and Dr Katharine Scott (University of Oxford) has confirmed the significance of the specimen. From this interglacial, 200,000 years ago, our specimen is the second most complete steppe mammoth skeleton in Britain. With a small size of only 2.3 m high at the shoulder, it is the smallest known adult British steppe mammoth of this period. The specimen indicates, with other remains, that the species shrunk from 4 m high at the shoulder, 500,000 years earlier. The significance of the specimen helped the Museum to achieve the Designation award from Arts Council England (Jackson, 2024). It has also earned its rightful place as a star exhibit in the *Worlds* gallery in the new redeveloped Museum. The Museum will open in 2026 following a major NLHF and Ipswich Borough Council-funded project (2022-26) to transform its galleries into more exciting, interactive and relevant spaces for the public. The specimen, displayed with contemporaneous remains, will allow visitors to celebrate Suffolk’s rich geology, and its exceptional ice age record reminding visitors that amazing fossils lay preserved right beneath their feet.

Conservation of the finds: Many of the bones are very fragile and friable and have been stored in pieces for many years, mostly since the excavation. The fragments required consolidation before being adhered together. The consolidant used is Paraloid B72 in acetone and the adhesive is also Paraloid B72, as this is a well-tested, stable and reversible polymer suitable for sub-fossil material (Larkin 2010). Large gaps were filled with plaster of Paris but smaller gaps without much connecting bone were filled with Japanese tissue paper soaked in Paraloid B72 which makes a strong join (Larkin 2016).

Creating the display: To make a realistic ‘sand and gravel’ background in which the bones can be displayed as if being excavated, Styrodur polyurethane foam (used in taxidermy) will be sculpted and covered with a diluted mixtures of Ardite, with vermiculite added for texture. This technique was successfully used recently (below) in the dinosaur gallery at Nottingham’s Natural History Museum by Sarah Burhouse.



The bones will need to be removeable to remain available for research and for any future conservation issues that need to be addressed. However, the display will be tilted at an angle so that the bones can be seen more easily by the public. Therefore, every bone will have to sit within a bespoke niche carved to their shape, so that they stay in place whilst on display. This is work in progress, and the display should be installed in 2026.

Below left: some of the bones, with their labels, awaiting conservation treatments. Below right: many of the mammoth bones, but not all (e.g, not the foot bones), laid out in approximate order to gauge the space required for the display. Note the absence of substantial skull material.



References:

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