

Conservation of the Craswall Priory relic (accession number: 501)



Before conservation



The original treatment proposal, agreed with the Hereford Museum Service and with the committee of Craswall Grandmontine Society (through Caroline Hillaby), was to completely disassemble the relic and remove any additions. This would enable the arm to be further studied before reassembly with a suitable conservation grade adhesive.

During initial investigation of the additions, it was noticed that the round ball on the hamate (representing the pisiform) was similar to material that was present between some of the phalange joints; this material appears to be plasticine. The addition of a plastic bone, in place of the fourth metacarpal, was also noticeable. The original bone appears to be present, loose in a paper Woolworths bag.



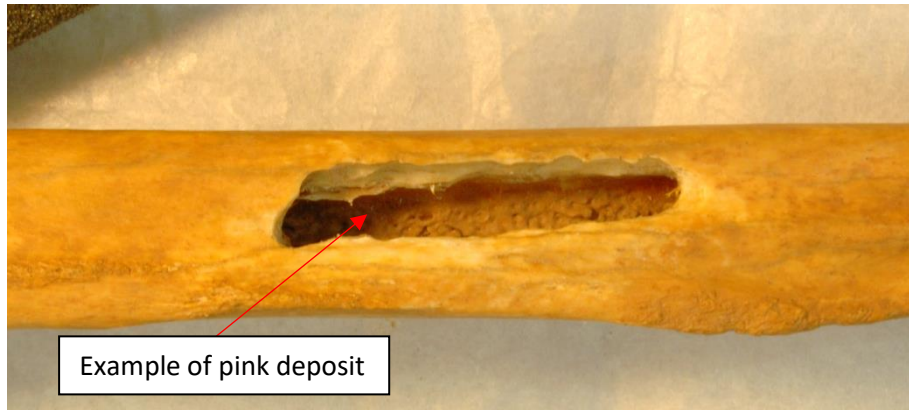
The previous reconstruction used an unknown clear adhesive, unfortunately this has created 'strings' between some joints, with excess covering the surface of the bones (eg on the carpal bones). This clear adhesive was soluble in acetone and had the distinct smell of amyl acetate, implying the adhesive was cellulose nitrate. Traces of this clear adhesive are also visible all over the surface of the bones. There appears to be a second adhesive present, a darker yellow layer between the 2nd and 3rd phalange joints, which is less soluble.

During the initial trials for removal of the adhesive, to allow disassembly, it was discovered that the condition of the bone was poor, there is not a lot of strength in the structure left. This means that removal of the adhesive is difficult without damaging the surface of the bone, especially the articulating surfaces where most of the adhesive is found.



This poor structural integrity is also possibly why the repair of the metacarpal of the 5th metacarpal (little finger) has failed and pulled the bone apart. The repair consists of a piece of wood, an old burnt matchstick, that has been pushed into the metacarpal, and fragments of bone stuck onto it. The bone fragments have moved out of position damaging the rest of the bone.

All the bones are covered in a patchy thin pink silty layer. It was initially thought that this had been applied at the same time as the original reconstruction, but further investigation revealed that this material is visible inside the ulna where a sample has been taken, implying that this may be part of the historical burial record and so was left in situ.



Revised treatment proposal

- Remove the plasticine additions.
- The plastic bone to be removed with a suitable solvent, as this is misleading.
- Holes from sampling to be filled.
- The repair of the metacarpal of the 5th metacarpal (little finger) that has failed to be removed.
- One of the distal phalanges has been adhered incorrectly. This is to be removed and re-adhered the correct way round.
- Remove excess adhesive, including the residues traces over the bone surfaces.
- As it is too damaging to disassemble the carpals, the clear adhesive previously used will be diminished so it less obvious.
- Any failing joints will be disassembled and cleaned of adhesive.
- Other areas to remain, see image for example, are where intervention could destroy the bone and damage important features pertinent to the removal of the arm from the body.



- The pink deposit will be left in situ.
- The arm will be reconstructed using suitable conservation grade materials.

Treatment

The clear adhesive from the previous reconstruction was found to be soluble in acetone, allowing the modern additions, any failing joints, and any residues of the clear adhesive to be removed. This was done using cotton swabs and brushes.

It had been decided during initial investigations of the relic that it would be more damaging to completely disassemble the previous reconstruction. The areas that were left were often covered in a thick layer of excess clear adhesive, this was removed or diminished using acetone.

The holes from sampling were filled using Japanese tissue and Paraloid B72 20% in acetone. The tissue was painted with acrylic colours to approximately match the colour of the bone. Once the hole was full, a final, single layer of coloured Japanese tissue was then applied over the fill, with Paraloid B72 20% in acetone, to create a smooth layer. This was then colour matched with acrylic paints to the surrounding bone surface.

The condition of the bones was poor, with little inherent strength left making the bones brittle, although they looked sound. This means that removal of the adhesive is difficult without damaging the surface of the bone, especially the articulating surfaces where most of the adhesive was found. The original reconstruction has some errors in positioning. After discussions with Jelena Bekvalac (curator, Human Osteology, Museum of London) it was agreed that it was more damaging to correct and so only the joints that were failing or were part of a modern addition were disassembled.

The Craswall Priory relic was reconstructed with Paraloid B72 approx. 30% in acetone (see image below). To protect some the articulating surfaces that needed to be adhered together, a small piece of Japanese tissue was applied to damage surface. This then allows the bones to be adhered together more securely.

It was impossible to reconstruct all the fragments of the 5th metacarpal, only the largest fragment appeared to have a definite location on the main piece of bone. To enable the phalanges to be adhered in place, the missing section of the 5th metacarpal had to be reconstructed. This was done using coloured Japanese tissue with Paraloid B72 in 20% in acetone to form an approximation of the correct shape. A final, single layer of coloured Japanese tissue was then applied over the fill, with Paraloid B72 20% in acetone, to create a smooth layer. This was then colour matched with acrylic paints to the surrounding bone surface.

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Craswall Priory relic (accession number: 501) after treatment, red circles indicate reconstructed joints.