

CONSERVATION TREATMENT RECORD

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| Lab number: | 8368 | Name of student: | Hannah Clare |
| Brief description: | Copper Alloy Brooch | Date allocated: | 31/1/2008 |
| Name of owner: | Tim Schadler-Hall | Date completed: | 1/5/2008 |
| Owner's number: | n/a | | |

Material type

Copper Alloy

Dimensions: 68mm x 31mm**Weight:** 17.77g**Technology**

This Roman copper alloy brooch has been made in three sections. It is a fibula that bears the most resemblance to the type known as dolphin brooches due to the arching nature of the decorated bar. A long thin brass pin is secured by a small bar that is concealed in the rounded head of the brooch. There is no evidence to suggest that had a spring mechanism and the pin moves freely. There is evidence to suggest that the coin had a tinning layer on the surface so it would probably have been silver in colour.

Other decoration is in the form of embossed pattern, raised ridges and circlets on the wider, rounded head. At this end there is a loop protruding suggesting that this is one of a pair. There may have been a chain to link the two, perhaps across the breast to secure a cloak or other garments.

Pre-treatment condition

The brooch is still covered in a large amount of soil from when the find was made. Underneath this there is evidence of stable corrosion product, this is occurring in different colours and densities in different areas suggesting that there is more than one copper alloy present. On initial assessment the condition seems good.

Significance

This appears to be a copper alloy brooch of Roman origin commonly referred to as a fibula. There is no archaeological context provided with the object except that it is a field walked surface find from the excavations at Thwing in Yorkshire. It appears to be well made from two different copper alloys; one forming the decorative part of the fibula and the other for the pin. It may have been used to secure large amounts of cloth, e.g. at the shoulder, as there does not seem to be a spring mechanism that would hold the pin under tension in another way. There is also a loop at the wider end of the brooch suggesting that this is one of a pair and that there may have been a chain that would connect the two across the chest for example. No surface decoration seemed present on initial visual examination. However, during treatment the remains of a shiny silvery layer was discovered in isolated areas. This indicates that the brooch would have been quite fine at the time of manufacture.

Examination

Examination was made by visual methods helped by hand tools during the cleaning process and with an optical microscope

Tests / analysis

An X-radiograph was taken of the brooch using a Todd Research X-ray cabinet at 90KV for 120 seconds. This indicated that there was a fracture in the straight bar of the brooch but this seems stable. It also indicates that there is no spring mechanism associated with the pin.

Scanning Electron Microscopy was undertaken both before and after treatment. This suggests that there are different copper alloys used in different areas, e.g. the pin is denser than the brooch itself and there is tin present. There is also a layer found in isolated areas on the decorative side of the brooch that looks like a tinning layer, this can be seen as both shiny patches in small areas and as a larger grey tarnished area on the bar of the brooch. There is no evidence to suggest enamelling as decoration, as the concentrations of silica to aluminium found in the pre-treatment SEM analysis are far more consistent with soil/dirt than they are to any glassy deposits.

Justification for treatment

Treatment option chosen: To remove the dirt still left on the surface from the excavation, remove the corrosion products back to a suitable conservation layer, and apply a protective coating.

The brooch is still in the same condition as when it was first found and there is a large amount of soil still on the surface. The owner has requested that the object be cleaned and the corrosion products be removed to a suitable conservation layer. The object may be needed for display.

Cleaning

The brooch was cleaned using predominantly mechanical methods and tools such as a scalpel, a small stiff bristled brush, and a wooden skewer were used. Some solvent cleaning was also undertaken using cotton swabs and acetone in the hope of softening some of the more hardened corrosion products and dirt.

The cleaning process was meticulous in case there was the preserved remains of any textile, particularly around the pin area. The large amount of mud on the clasp area was carefully examined, however, the arrangement of the soil was not conclusive to a textile being present.

both to the fact that there was PEG present in the object and that the finial might change shape if conditions are not constant; will need an adhesive with some flexibility. Further damage did occur during the reconstruction as the stresses of the new joins exerted pressure on other weaker areas. These were incorporated into the reconstruction as soon as they happened in order to prevent further distortion, which would then exacerbate the situation.

Loss compensation

Due to the distortion suffered by the object there has been some radial cracking and some of the joins have become very wide. These areas will be supported with Japanese tissue soaked in 5% w/v Klucel G in IMS which is then diluted to a workable state by the addition of more IMS. The tissue will first be dyed to a suitably dark shade so as to be hidden in the recesses of the cracks. The supports were not brought level with the surface as this would change the understanding of the shape of the finial; they were kept as invisible as possible.

Other

Packaging

Secure packaging has been made for the finial inside the small plastic box provided by the owners. Plastazote will line the interior of the box and the finial will be cushioned by pads of acid free tissue. This is due to the delicate nature of the object; the pads can cushion the object without being too ridged. A Plastazote cut out might cause more abrasion of an already friable surface.

Condition after treatment

The surface of the finial has been cleaned of PEG and the exterior surface is now an even black colour. It has been reconstructed and now seems stable though still very fragile.

Student evaluation of treatment

It is felt that the finial has been successfully treated according to the request of the owner. The object is still very fragile but seems stable in its reconstructed state. The join fillers of Japanese tissue are providing enough support while remaining very unobtrusive. The object appears much improved in comparison to its pre-treatment condition.

Recommendations for further care

Handling – The finial is still very fragile due to the friable nature of the surface and the fact that some of the joins are delicate. The finial should be handles as little as possible; if it must be handles it should be with extreme caution and without putting pressure on any of the wide joins that have little contact

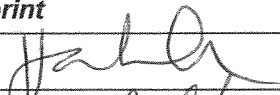
Storage – The finial should be stored in the packaging provided or in materials that support it in a similar way. The object is easily distorted by changing environmental conditions and it should therefore be stored in constant surroundings, particularly Relative Humidity, at around 50%RH

Photography / other illustrations

Colour slide/digital/ print

Other documentation (analytical, object report, etc)

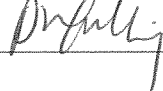
Signature of student



Date

25/6/08

Signature of practical tutor



Date

25/6/08