

Wirral Brooch Project Update for Museums

Four out of the five brooches from Scotland were sampled during a visit to Edinburgh in January. The example from Edinburgh castle was thought too corroded to give a clean sample so one was not taken. These results will be used as a comparison to the main sample group from the core distribution area on the Wirral.

Frances and Dr. Ponting then met in early March in Liverpool to run the samples through the machine. The following elements were tested for:

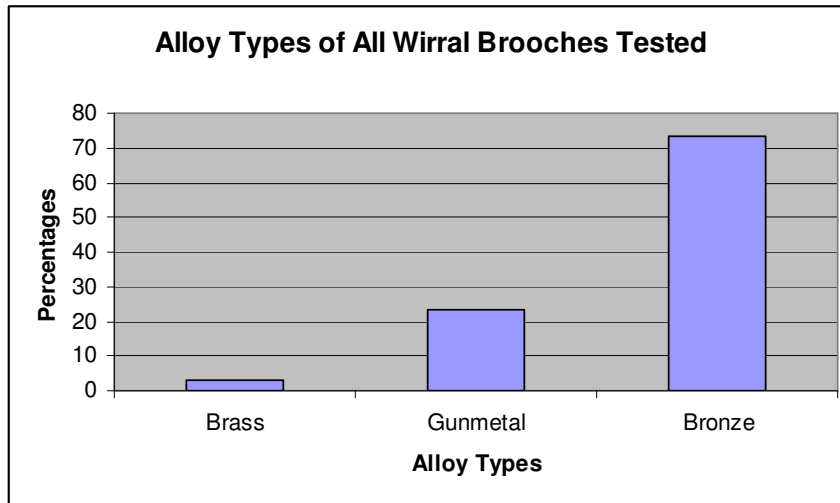
Chemical Symbol	Element
Ag	Silver
As	Arsenic
Co	Cobalt
Cu	Copper
Fe	Iron
Mn	Manganese
Ni	Nickel
Pb	Lead
Sb	Antimony
Sn	Tin
Zn	Zinc

The three most important elements when looking at copper alloy composition are lead, tin and zinc. These are the three deliberately added elements which affect the alloy composition. The other elements are useful to note as similar percentages may indicate use of the same source for the metal, also they are sometimes deliberately added.

The table below shows that three out of the four Scottish examples tested were bronze whilst one was gunmetal. This percentage tallies with the overall percentages of the alloys for all the Wirral brooches tested as the graph below shows. The majority are bronze with just over 20% being gunmetal.

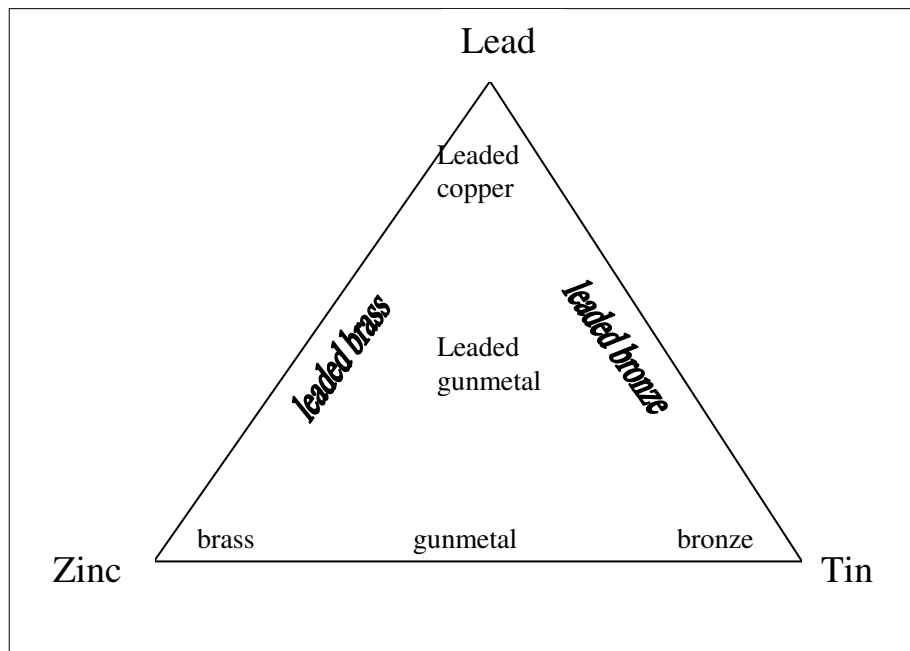
Reference number	Findspot	Alloy
68	Peebles, Borders	Gunmetal
72	Pusk, Fife	Bronze
80	Stonewells, Moray	Bronze
90	Traprain Law, Lothian	Bronze

Graph showing alloy types of all Wirral brooches tested.

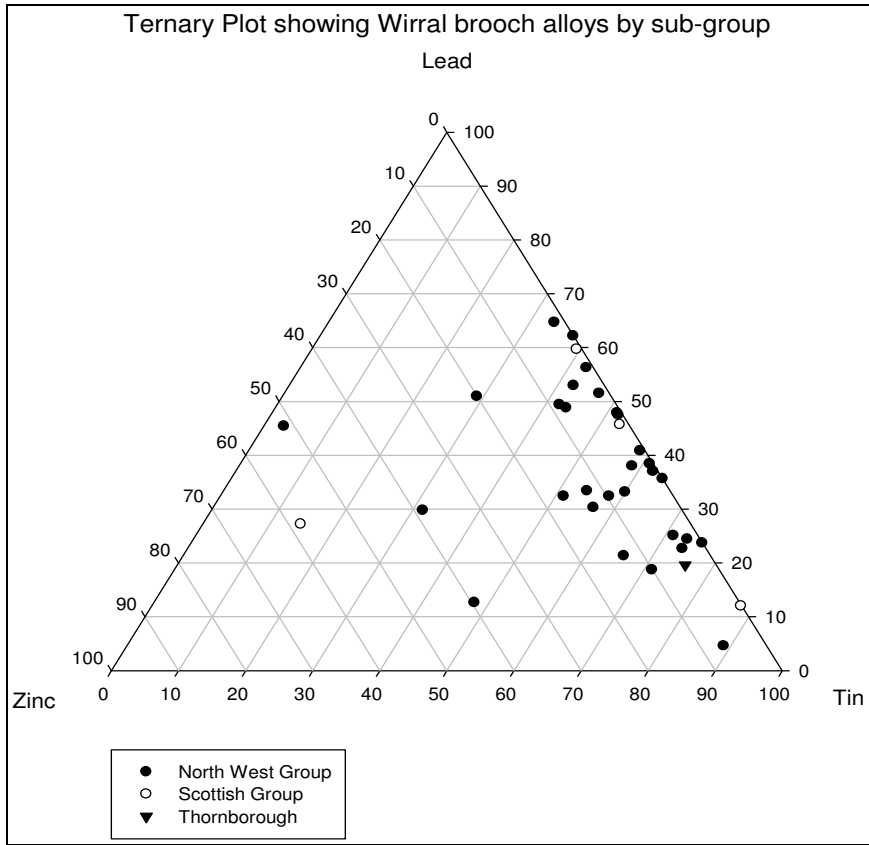


I will be using ternary diagrams in my dissertation to display the data for the three main alloying elements- lead, tin and zinc. Below is a plot which shows how they work.

Ternary plot and where the alloys will be within it.



The ternary diagram again shows that the Scottish brooches fit within the main pattern of the Wirral brooch group as a whole. They are all clustered around the areas of leadet bronze and bronze. These results are only preliminary as my dissertation is not complete but at the moment it appears as though the Scottish brooches were not made from different alloys to the main group of Wirral brooches. This information will be used along with the typological and distribution patterns to determine whether there may have been more than one centre of manufacture.



I would like to thank all the museums and people involved in allowing me access to these brooches once again.