


# Electrolysis

Although all the experts advise against cleaning coins and artefacts as it could seriously reduce their value, sometimes where there is really heavy encrustation, it is the only way to remove enough to reveal any detail. There are a number of acids and chemical preparations that can be used, but as I am not prepared to handle these corrosive substances and the results often strip off all the antiquity from the surface, electrolysis is my preferred method.

To start with you need an electrolysis unit. The cheapest way, providing you are reasonable confident, is to build your own using something that most of us have lying around, an old mobile phone charger. This is ideal as both the voltage and currents are low so you are less likely to cause yourself any harm.

There are dozens of instructions and utube videos online (and of course remember you do so at your own risk) but basically you remove the small jack that plugs into the phone, separate the wires back about six inches, strip back about a cm of insulation from each and attach a crocodile clip to each of them. **(Safety note  : at no time should you have the charger plugged into the mains and touch the two crocodile clips together as you will blow the unit and could cause yourself serious injury)**

All you then need is a jam jar and a suitable electrolyte and you are ready to go.

## This is my unit and how it looks in use



N.B. I use a clothes peg to make sure the electrodes are kept separate

**Method.** Fill the jam jar with warm water and stir in a teaspoon of bicarbonate of soda until dissolved (you can use ordinary salt but with that, the process results in the release of chlorine gas which can be harmful if inhaled). With the charger not plugged in, attach an old teaspoon to the positive wire and the object to be cleaned to the negative and suspend both in the electrolyte **making sure they cannot touch, and only then turn the unit on.** (If you are not sure which is which, simply dip both clips into the water, and switch the charger on. Watch the ends and the one that shows the most bubbles rising from it is the negative). **In use I make sure that the charger is higher than the jam jar to ensure no water can get into the unit and that the area is well ventilated.**

You can attach the object direct to the crocodile clip but to prevent unnecessary damage I bend a paper clip into a cradle to support the object and attach that to the crocodile clip.

I let the process work for about 10 minutes, switch off the power, remove the object and brush it with an old toothbrush to remove any loosened deposit then repeat the process until I have removed as much as possible. With

most encrustation it can take 20-30 minutes in total to achieve a satisfactory result. The variables are the power of your charger, the strength of your electrolyte and the degree and type of encrustation. A kitchen timer makes sure I don't lose track of time!

My greatest success was with 7 Roman coins that were so badly stained and encrusted that I thought they must be bronze coins. It was only when I showed them to the FLO that he declared them to be Denarii and treasure! They went through the treasure process and were disclaimed. I had an expert look at them who declared them of little value and believed they would be impossible to clean. So with nothing to lose I decided to try electrolysis.

I put them through the process individually and in three sessions each, managed to remove all the encrustation and reveal the silver beneath. (note that with the first coin, at the second stage of cleaning, the whole of the surface shattered away and I thought I had ruined the coin, but on cleaning the layer of soft black material that had been exposed, the silver showed through – to, I must admit, an immense sigh of relief!)

**Here are the before and after pictures**

**Before** (6 of the coins front and back)





After (all 7 coins)



The same expert was amazed when he was shown the results and although none of the coins was very rare he valued one at £70 with a total of £155 for the group whereas in the uncleaned state had given a total value of £10-£20. This appears to vindicate by decision to try electrolysis.

Please note that some coins and objects may be in such poor condition that you could end up destroying them in the process rather than improving them but that is the risk you have to be prepared to take. So far, touch wood, that has not yet happened to me, but if I can promote what would otherwise be grot box material to something that is worth saving I think it is a risk worth taking.