

Giant's Causeway

Trial Report

February 2024



Coin removal trials

Report prepared for:
**Claire Magill, Regional
Conservator, and Dr Cliff
Henry, Nature Engagemer
Officer at the Giant's
Causeway**

CLIVEDEN CONSERVATION WORKSHOP LTD

HOME FARM, AMMERDOWN ESTATE, KILMERSDON, SOMERSET, BA3 5SN

T: +44(0)1761 420 300, info@clivedenconservation.com

CLIVEDEN CONSERVATION

The Tennis Courts
CLIVEDEN ESTATE
Maidenhead SL6 0JA
t. 01628 604721
f. 01628 660379
t. (Bath) 01761 420300

CONDITION REPORT

© Cliveden Conservation Workshop Ltd

Please note that the contents of this report are the property of Cliveden Conservation and should not be distributed to third parties (apart from your legal advisors) without our prior authorisation.

Job No.	Issue No.	Description	Issue Date	Reviewed with
24092	1	Trials report	February 2024	TF

PROJECT SUMMARY

PROPERTY: Giant's Causeway
REGION: Northern Ireland
LOCATION: Country Antrim
OBJECT: Coins in the cracks in the stones
MATERIALS: Basalt and various metals
CONSERVATOR(S): Andrea Walker
WRITTEN BY: Andrea Walker

TABLE OF CONTENTS

1.0	Introduction	1
1.1	The coins.....	1
1.2	Aims of the trials	1
1.3	Access and Limitations.....	1
2.0	The Trials.....	2
2.1	Location	2
2.2	Observations	2
2.3	Trial methods.....	2
2.4	Trial results	3
2.4.1	Time	3
2.4.2	Success rate	3
2.5	Coins removed in the trial	4
3.0	Discussion and Considerations.....	5
3.1	Dissuading coin culture	5
3.2	Taking care of the stone: Stain removal? Open joints? Ecology?	5
3.3	What becomes of the coins?.....	6
	Appendix A – Location of Trials.....	8
	Appendix B – Photographic record	9

1.0 INTRODUCTION

Cliveden Conservation Workshop Limited (CCW) were invited to carry out trials to remove coins, deposited by visitors, from the joints, cracks and crevices at the Giant's Causeway in February 2024.

This report discusses the findings from the trials, records the methods undertaken, and poses questions regarding future options. It is prepared at the request of Claire Magill, Regional Conservator, NI Region, and Dr Cliff Henry, Nature Engagement Officer at Giant's Causeway.

1.1 The coins

Visitors have pushed coins into the joints in the columns and boulders over many years, presumably based on superstition (i.e. making a wish) or as a memento of their visit, similar in sentiment to leaving locks on bridges or fences.

The question was asked whether this activity could be detrimental to the condition of the stones as the corroding of the coins in a damp, high saline environment, potentially exacerbates the stone's weathering, creating staining and discolouration.

1.2 Aims of the trials

The aims of the trials were to try various methods of removing the coins without causing damage to the stone. Also to reduce the potential from the unsightly and corroded expanding coins, deterring further coins being deposited in the cracks.

1.3 Access and Limitations

Access to the site of the trials near the causeway was gained by foot. It was approximately a 20 minute walk from the car park.

The trials took place on the 17th February 2024. The weather on this day was overcast and heavy rains rolled in by midday.

Limitations to this trial were that the area instructed for the trial was not representative of the severity of the corrosion, the difficulty of access (height off the ground and position of the stones) or the compact nature of the coins in other areas, such as in the columns in the area referred to as 'The Gateway'.

2.0 THE TRIALS

2.1 Location

The location for the trials was selected by Dr Cliff Henry for the variety of coins ranging in their state of corrosion.

These were boulders on the pedestrian footpath approximately 30-40 metres from the bus turning circle at the Causeway. They had attracted approximately 200 coins. *See Appendix A for a map of the site.*



Fig.1 – General view of the boulders.



Fig.2 – The boulder the trials were carried out on.

2.2 Observations

There are two different principle materials in the coins:

Copper that is corroding with a green colour, which is unsightly, but not expanding, and iron, which are causing ferrous staining and has the ability to expand and potentially damage the stone.

Basalt is a robust material and it is unlikely either type of coin will cause physical damage, but their presence suggests a poor presentation, and it is desirable to dissuade the public from this current behaviour.

2.3 Trial methods

This was a small-scale trial to determine what might be possible, what might work and what could be discounted as options, therefore a series of joints amounting to approximately 1.0 linear meter were worked on.

Methods involved the following:

- A selection of narrow chisels and small hammers

- Pliers
- Hoof picks
- Punches
- Hand held hacksaw blades in handle holders
- A battery powered rotary tool (like a Dremmel™) with thin cutting disks
- A battery powered drill with small drill bits

It was agreed that if any of the techniques being tested was deemed to cause or be likely to cause damage, then this method would be abandoned in favour of one of the alternatives.

2.4 Trial results

A photographic record can be found in Appendix B.

2.4.1 Time

The coins in 1.0 linear metre took approximately 45min to remove, while carrying out these trials.

2.4.2 Success rate

Using the variety of methods, the removal of the coins was 90% successful. Some were too well compacted and deep within the cracks to remove without causing damage to the stone.

The methods have been ranked in order of their success for what was presented in the trial location.

Method		Effect on stone
Pliers, "needle nosed"	Gripping and pulling the coins out. Where the coin was bent over a piece of timber/softening was used to lever, bend and pull the coin out.	No damage to stone.
Chisels (3, 5, 10mm) and small carving hammer	Knocking the coin gently along its edge to spin or rotate it loose enough to pull out with fingers of pliers.	No damage to stone
Punches and small carving hammer	As above.	No damage to stone
Battery powered rotary tool (i.e. Dremmel) with 1mm blade	Cutting into corrosion or the coin itself.	Some abrasion to the stone if it slipped off the corrosion or coin. This could be effective in cutting 'relief' cuts in areas of thicker corrosion or compact/multiple coins pushed in to allow for chopping out of the coins.
Battery powered drill with thin drill bits	Drilling into corrosion or into coins that had broken off deeper within the joint	As above.
Hand held hacksaw blade with holder	This helped to loosen and spin some coins, but wasn't effective in cutting corrosion.	Some abrasion to the stone.

Hoof picks	The joint was too narrow for the use of this tool here. It could however be of use in wider joints and areas after a 'relief' cut is made	Unknown. Be vigilant not to pop the edges of the joint off while pulling material out.
Angle grinder	Not tested. This could be of assistance in the wider joints where coins have been stacked on top of each other, or the corrosion has expanded and a 'relief' cut could be made safely.	Unknown. Be vigilant not to slip or go too deep.

2.5 Coins removed in the trial

All that did not deteriorate or pull apart in their removal were collected and photographed.

NB The coins were retained and can be posted back to the client on request.

3.0 DISCUSSION AND CONSIDERATIONS

By employing the various methods trialled, along with others that will develop by tackling the needs of different areas, while being vigilant and aware during the process of removing the coins, there are ways of removing them without damaging the geological heritage of the Giant's Causeway.

The next question is *What happens after the coins are removed?* This in turn brings up more questions. Some of which are as follows.

3.1 Dissuading coin culture

On the bright side, more and more, we are moving towards a cashless society; people will be carrying less money and fewer coins as time goes on, but, for now, *how does the National Trust dissuade the public from this current behaviour?*

What is the reason for this current behaviour? Like the tradition of leaving locks on bridge?

Is there something else they could be encouraged to do with their coins? Other than making a wish and tossing it in the sea, which would could cause other problems with sea life and the balance out there!

3.2 Taking care of the stone: Stain removal? Open joints? Ecology?

Trials for reducing and removing the level of staining could be carried out in conjunction with the removal of the coins.

Does the staining need to be removed? It's unsightly, but with the source of the staining removed, the robust basalt will not be damaged by it. The stains are a memory of the coin tradition and could be left for this reason, also as a reminder to future visitors of what damage this form of littering can cause?

With the coins removed, the joints, cracks and crevices will be prime 'real estate' for fresh coins. While the current behaviour is being addressed, it is likely to continue to happen. *Do the joints get filled with something? For example, they could be pointed with a material that's robust enough to survive the coastal environment, or simply packed with earth or clay? This would be a lengthy endeavour, and, once it's begun, it will have to continue and be renewed over time??*

Mosses, lichen, insects and other creatures exist within these cracks, as was seen during the coin removal trials. Wood lice and small mites came out of some areas when they were disturbed by our actions. *Would an ecological review need to be carried out for any of these things to be considered?*

3.3 What becomes of the coins?

This is an important question as these coins are people's memories and the act of depositing them has been done deliberately with an individual's reason. *What becomes of the coins after their removal?* It would be a shame to simply dispose of them.

Based on what the bank/mint has said regarding coins salvaged from the Roman Baths in Bath, these coins will also very likely be unusable due to their level of corrosion and the presence of introduced minerals. Therefore, making them into something new could be a way forward, that people feel they could contribute (or have contributed) to, and perhaps shock people into seeing how much waste (or litter) has been left behind over the years.

Could the metal be smelted and formed into some art? Embedded in resin? Used for flooring? A pathway? A columnar feature?

LIST OF APPENDICIES

- A** **Location map of trials**
- B** **Photographic record**

APPENDIX A – LOCATION OF TRIALS



APPENDIX B – PHOTOGRAPHIC RECORD



Figure 1 – Area 1 – Before



Figure 2 – Area 1 – Detail showing the condition of the coins in this area.



Figure 3– Area 1 – After



Figure 4 – Area 1 – Detail showing compacted metal, which was drilled and cut out.



Figure 5 – Area 1 – Detail showing slight abrasion on the stone from battery powered rotary tool



Figure 6 – Area 1 – Detail showing abrasion on the stone from battery powered rotary tool



Figure 7 – Area 2 – Before



Figure 8 – Area 2 – After



Figure 10 – Area 2 – Detail



Figure 11 – Area 3 – Before



Figure 12 – Area 3 – After.



Figure 13 – Area 4 – Before



Figure 14 – Area 4 – After



Figure 15 and 16 – Details of more severe corrosion and stacked coins found in the columns in The Gateway area.



Figure 17 – coins removed