

Cup-and-ring-marked stone at Ballochmyle, Mauchline, East Ayrshire, Scotland. A rare example of cup and ring marks carved on a vertical surface. Wikimedia Commons photograph by Rosser1954 / CC-BY-SA-3.0

Cup & Ring Marks

Who made them, and why?

By Jeff Nisbet

Although variations of the prehistoric carvings commonly called “cup and ring marks” have been discovered on every continent of the world save Antarctica, most examples, particularly those seen at sites where they have been carved in greatest concentrations, have been found in Europe.

In his 1979 book, *The Prehistoric Rock Art of Galloway & the Isle of Man*, amateur archaeologist Ronald W.B. Morris lists 104 theories about these ubiquitously widespread rock carvings. Most of the theories listed are, he writes, “still strongly held and believed in by at least one archaeologist of note, amateur or professional.” After each of these theories, fully expecting “to be torn to shreds by believers in each theory,” Morris rates each on a probability scale of 1 to 10, with 10 being most probable.

While it is beyond the scope of this paper to list all 104 theories, it can be seen that many could be gathered under such broad categories of use as ...

In Burials: Since slabs carved with cup and ring marks have been found facing inward in some cist burials, it has been speculated that the carvings must have had some unknown symbolic use to the dead on their final journeys. It has been argued, however, that some slabs appear to have been simply reused from earlier and similarly unknown service at other sites,

due to the fact that the carvings are either incomplete along one or more of the slabs’ outer edges, or else have been much weathered, presumably elsewhere, before being repurposed as cist slabs.

In Religious or Magical Ceremonies: Some of the theories propose that the carvings may variously symbolize the breasts of the Mother Goddess, the Sun God of the solar cults, or that they were made and used by the Druids in blood-sacrifice ceremonies, particularly those that sport the commonly found radial grooves or gutters, presumably carved to channel blood away from the cup. One theory even suggests they show evidence of cattle worship, with the cups and rings being visual representations of what Morris delicately calls “cow pats.”

As Astronomical Timekeepers: Were some of these carvings aligned to mark the risings and settings of the sun, moon, or other celestial bodies? Might their orientations help confirm the long-held agricultural theory about standing stone circles — that they were carefully placed to mark the most opportune times to plant and harvest crops?

But many of the theories in Morris’s compilation do not easily fit any of those broad categories. There we find theories that the carvings are encoded messages from outer space, early masons’ marks, musical

notations, pilgrims' marks, gaming tables, boundary markers, primitive lamp bases, and even just meaningless doodles, among scores of others.

In the 40 years since Morris published his book, many more theories have been proposed that similarly run the gamut from the fantastical to the mundane, yet none has fully satisfied. And, since there is no written record in prehistory, it's likely none ever will.

Of all the individual Scottish sites where these prehistoric carvings have been found in great abundance, the 5000-year-old Cochno Stone has received the lion's share of publicity in recent years. This 42x26-foot expanse of rock in Faifley's Auchnacraig Park sports what has been called the "finest set of cup and ring marks in existence."

First documented by Rev. James Harvey in 1887, the stone was purposefully buried in 1965 to protect its carvings from vandalism, and was temporarily uncovered in 2016 by a team of archaeology students and local volunteers headed by Glasgow University senior archaeology lecturer Dr. Kenneth Brophy.

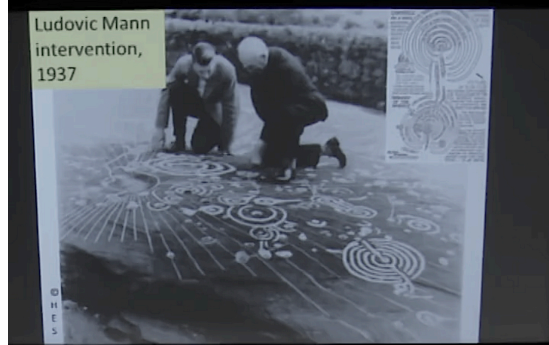
During the course of his 2017 lecture, *Revealing the Cochno Stone*, Dr. Brophy showed a highly interesting photograph taken 79 years earlier in 1937.

The photo shows two men crouching on the stone. The man on the right, controversial amateur archaeologist Ludovic Mann, is pointing something out to the other man. The carvings on the stone appear particularly vivid due to the fact that Mann had color-coded them with paint. In addition, he had added many radiating and grid-like lines meant to further his theory that the carvings, as Dr. Brophy wryly reports in his excellent *Urban Prehistorian* blog, were "used to help predict eclipses and 'celebrate the defeat of the eclipse-causing monster.'"

Regardless of Mann's imaginative theory, I saw another possibility. The carved stone shown in the 1937 B&W photo, as emphasized by Mann's paint, looked very similar to something I remembered well from my schooldays — the classroom blackboard.

As a graphic designer with an abiding interest in the role art has played in our understanding of the past, I had been captivated by a 2015 news story about several old blackboards discovered hidden behind the walls of an Oklahoma City school. The old blackboards dated from 1917, and still contained, according to one of the many news reports of the find, lessons "on music, math, and even the history of the Pilgrims." The discovery was, the report said, "a fascinating little time capsule from an earlier era, particularly since it was one that was always meant to be wiped away."

When I thought about the transitory nature of those early-20th-century classroom chalk marks ver-



"Mann decided that he would paint the whole of the surface of the stone to highlight what he thought was going on here."

From Dr. Kenneth Brophy's lecture, *Revealing the Cochno Stone*.
Recorded on 27 May 2017 at the National Museums Scotland by
Mallard Productions Inc. (mallardproductions.co.uk).

sus the durability of ancient stone carvings, it occurred to me that the vastly different lifespans of the two mediums are not mutually exclusive, and that the one may actually serve to tell us a lot about the other.

Let's first of all consider how certain skills have been passed from generation to generation ...

The ancient skills necessary for hunting, fishing, farming, animal husbandry, leather working, weaving, etc., all deal with organic materials that quickly decay, and would be taught over successive generations by the old to the young. The clothing would be worn and discarded and the butchered meat would be quickly cooked and eaten. Stripping hide from meat and meat from bone are butchering skills passed from one generation to the next, leaving no evidence of the teaching process, though common sense informs us there had to be one.

The teaching of stone carving, however, obviously requires the use of stone — a material durable enough to withstand the often savage onslaughts of nature and time. Unlike the products of early butchery and weaving, however, which enjoyed necessarily abridged lives of use and decay, and even the more recent blackboard chalk marks, which can be quickly and repeatedly erased, the ancient efforts of aspiring stoneworkers would still survive for us to see.

But while most day-to-day prehistoric life skills would be taught at home or in the field, from parent to child, stone-working skills would more likely be taught away from the family home, in a location students would travel to for informed instruction — the ancient equivalent of a school classroom.

These ancient classrooms, I suggest, are still to be viewed where cup and ring marks are gathered in abundance, such as the various sites found in the same general vicinity of the Cochno Stone. While it



is true that many cup and ring marks are to be found in sites that are far less rich in carvings, I would propose that these sites may very well be evidence of what we would nowadays call “homework,” or that they are carvings made under the tutelage of itinerant teachers not bound by the ties of hearth and home.

Although the Cochno Stone has since been wisely reburied for its ongoing protection, the Ballochmyle carvings can still be viewed just 30 miles to the South, at Mauchline.

The Ballochmyle site is even more evocative of a school blackboard, since there we can see a rare example of many cup and ring marks carved on a *vertical* surface — all the better to be viewed in a classroom setting. Regarding this same point, Morris writes “it is interesting to note that about two-thirds of those carved on sloping outcrops sloped gently north, thus giving better shadow effects in sunshine.” Clearly, like the boards mounted on the wall behind today’s teachers, these marks were meant to be seen.

It would be in the nature of classroom instruction, prehistoric or modern, that mistakes would be made. Indeed, these mistakes, once brought to the attention of the class, would become necessary and invaluable parts of the lesson plan. Johann Wolfgang von Goethe was not telling us anything new when he wrote: “By seeking and blundering we learn.”

Such blunders can be found all around the cup-and-ring world: rings more oval than circular; rings more reminiscent of highly eccentric squares than circles; rings begun but quickly abandoned; rings interrupted by natural fissures in the bedrock.

In the photo at the top of this page, however, we perhaps see a rare example of the evolving proficiency of a single student, particularly in the three cup and ring marks shown in the lower-right quadrant.

Here we might see a relatively poor first effort, at left, consisting of a cup and *three* rings; a second and improved effort consisting of a cup and *four* rings; and an excellent third effort, at right, consisting of a cup and *five* rings. Note the group of possible “practice” cup marks in the lower-left quadrant, although some show more length than width, indicating that they may actually be examples of learning how to lay down a line rather than carve out a cup — an exercise undertaken simply to acquaint the student with the unique properties of this particular stone (grain, hardness, etc.) in order to choose the best implements and striking techniques before beginning the more exactly crucial task of actually sitting the exam.

But why is it that we only see a predominance of cup and ring marks at these sites, and find far fewer examples of such other simpler shapes as squares and triangles? The sheer multitude of cups and rings has suggested, to many, they must have some ritual or magical purpose, as recorded in Morris’s list.

I suggest, however, that it is more probable these endlessly repeated marks had a decidedly more credible utility still at play today in almost every educational lesson plan — a utility that follows on from the commonsense truth every teacher knows — that practice really does make perfect, and always has.

Those of us of a certain age will recall the individual hand-held slates on which we practiced our alphabets, over and over, or the nibbed pens and inkwells which made our cursive writing sing with delicate upstrokes and heavier downstrokes. Later on in our schooling we might have taken a touch-typing course, learning the QWERTY keyboard layout by repeatedly tapping out “the quick brown fox jumps over the lazy dog” until we could type it, error-free, without looking down. As the old Latin proverb goes

— *Repetitio mater studiorum est* — Repetition is the mother of all learning.

And so it might likely have been in prehistoric times, too, when a craft would be practiced and practiced until the necessary motor skills had become second nature. Unlike the early work of prehistoric weavers and grooved-ware potters, however, the classwork of student stone carvers would not end its life in either bonfire or midden. Carved into solid bedrock, it would still be in place for us to see.

But, once again, even if we accept the possibility that these spectacularly concentrated sites of prehistoric carvings were schools for learning stonework, why would we not see more diversity of subject matter? Why do we still find an overwhelming preponderance of cups and rings?

The answer, I feel, may lie in the very special spacial properties of a carved-stone circle. A student stoneworker would have found it much simpler to lay out and carve a relatively accurate square, for example, since a square only requires connecting four predetermined points with straight lines. The student would begin at one point, carve a straight line to the second point, readjust the direction of the stroke towards the third point, and finish on the fourth.

The circle, however, demands much more.

To a student stoneworker, the circle has just two points to connect, but both are the same — the first is the last, the beginning is the end — and between the two would lie an abundance of difficulty not found in straight-line carving. Each stroke would require an ever-so-slight readjustment in direction. Each stroke would need to be reconsidered against the bedrock's unique grain and density. Each stroke would demand an accurate reappraisal of means, methods, and ends.

Even if we consider the likely scenario that the circle was first drawn by a primitive compass consisting of peg, free-turning cord, and charcoal stick, it's not hard to realize that carving a perfect circle would have been unquestionably more difficult than carving any shape consisting merely of a few straight lines. And with the carving of *concentric* circles, that first circle would simply be the first of a series, each subsequent circle ideally conforming to the curve of the previous. In fact, each subsequent circle, constrained by both the outside circle as well as the inner cup, may have actually been more difficult to carve with precision than the first.

Moreover, it is also possible that the class instructor may have added an extra level of difficulty into the lesson plan by requiring that students who would not be naturally ambidextrous learn to carve rings in both clockwise and counter-clockwise directions. This would certainly be a valuable skill that the



Various design motifs on a Newgrange kerbstone.
Wikimedia Commons photograph by Johnbod / CC BY-SA 3.0

more talented graduates could draw upon when carving such demanding repetitive decorations as the spirals to be found on the kerbstones of the marvelous Newgrange passage tomb in Ireland, shown above.

Besides simply being schools for surface decoration, however, these prehistoric centers of learning, much like schools of today, would have been sites where a student's potential was tested for future development in such various other specialized levels of the craft as tool-and-weapon manufacturing, building construction, quarrying, and the like.

One final reason for carving concentric circles, mundane though it may seem, might have been simply to force the economical use of the space provided for each student's practice — individual desktops, if you will — affording these sites considerably longer useful lives as prehistoric stone-working classrooms. Unlike the Oklahoma City blackboards discovered in 2015, these ancient equivalents could be neither erased nor renewed with fresh layers of bedrock.

In today's parlance, they were "carved in stone."

As it happens, however, my theory echoes a similar suggestion made almost 50 years ago by none other than Ronald W.B. Morris, the very man whose 1979 list had sparked my interest in the subject.

His paper, published in Volume 103 of the *Proceedings of the Society of Antiquaries of Scotland*, titled *The Petroglyphs at Achnabreck, Argyll*, is an exhaustive survey of that site's many carvings, with numerous additional drawings and photographs of the sites he had personally visited.

He ends his paper with a question: *The Problem — Why so many carvings on one site?*

Morris first gives a nod to the extreme age of the site, and acknowledges the perceived significance of the carvings would have indeed changed or evolved

from epoch to epoch and from place to place. While this is undoubtedly true, the widely varied folk traditions that have sprung up around the cup and ring marks over the millennia bring us no closer to conclusively solving the overarching mystery of why they were made in such abundance to begin with.

He then proceeds, however, to discuss the theory that cup and ring marks were used as magical aids in finding copper and gold deposits due to their reported proximity to metal-working sites.

“If the purpose at Achnabreck was copper-searching magic,” Morris writes, “it is hard to understand why so many carvings should have been made on this one great chunk of rock, four miles from the nearest copper-workings known. A possible explanation, entirely without supporting evidence, might be that there was some kind of school for the local copper prospectors or members of a sect, and that here the new art of carving on stone may have been taught to, and practiced by, perhaps four to six apprentice priests or prospectors, before they set out on their work in the area.”

In his 1979 book, Morris again covers the metal-working hypothesis in theories 6 and 7, giving the *proximity* theory a probability rating of 8, and the *magical-prospecting-aid* theory a rating of 5. Of his *stone-carving school* explanation, however, he curiously makes no further mention.

As one who spent his carefree schoolboy days in the town where Harry Potter and Long John Silver were born, I must admit to happily nurturing in my own grandchildren those fantabulous worlds of wizardry, unicorns and buried treasure — the marvelously fertile stuff of their childhood imaginations.

But in the more grownup world of scholarly in-

quiry, however, I would suggest that new paths of investigation might be better discovered by deliberately setting aside the theory that so much repetitive effort shown in the carving of cup and ring marks would have once had magical intent. Though the idea that magic played a part is enchanting, I think it more academically useful to propose it didn't.

While it is entirely possible that, given the absence of a written prehistoric record, either or *both* theories are true, it is more useful that each be permitted a more rigorous environment of inquiry unaffected by the other.

To that end, I suggest that these carvings were the work of student stoneworkers learning the rudimentary skills of their craft at a centrally convenient location, or school, leaving evidence of a prehistoric system of education-through-repetition still visible on the Scottish bedrock — the same global system of education-through-repetition in use today.

Further, I would suggest that placing a mantle of undocumented superstition on the shoulders of our ancestors, no matter how pleasing the thought, runs the risk of doing them a disservice. Such preconceptions may blind us to a simpler path of investigation paved with the view that there is much about the way we live our day-to-day lives that likely has not changed over the millennia — a path that might better enable us to discover some commonsense truths about our ancestors by inviting us to look more inward, at our present-day selves, than backward, at distant strangers.

And in the words of eminent Scottish philosopher David Hume: “Mankind are so much the same, in all times and places, that history informs us of nothing new or strange in this particular. Its chief use is only to discover the constant and universal principles of human nature.”

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ENDNOTES

This paper follows on from my 2014 paper for the Scottish Archaeological Research Framework (ScARF) titled *The Carved Stone Balls of Scotland: Who made them, and why?* That paper can be read on ScARF's Scottish Heritage Hub site at <https://scarf.scot/wp-content/uploads/sites/15/2012/03/CarvedStoneBalls.pdf>

Page 1: Ronald W.B. Morris, *The Prehistoric Rock Art of Galloway & The Isle of Man*, 1979, Blandford Press.

Page 2: Dr. Kenneth Brophy's blog post — <https://theurbanprehistorian.wordpress.com/2016/11/08/dig-cochno/> Dr. Brophy's *Revealing the Cochno Stone* lecture can be viewed on the Society of Antiquaries of Scotland's YouTube channel at <https://www.youtube.com/watch?v=0Nhg0c58pmk>

Page 4: Ronald W.B. Morris, *The Petroglyphs at Achnabreck, Argyll*, Volume 103 (1970), *Proceedings of the Society of Antiquaries of Scotland*, pages 33-56 (plus seven unnumbered pages of photographic plates).