

Ever Decreasing Circles

By John Sandon

A few years back, when Mediterranean holidays were allowed, Kris and I took a short ferry ride from Piraeus to the inviting Greek island of Aegina. We soon discovered a deserted beach, but Kris couldn't understand why instead of the soft sand and the crystal-clear water, I was drawn to a scree of rock and topsoil that had fallen from the nearby cliff. True to form, I'd noticed some pot sherds sticking out of the debris, and I soon gathered a pocket-full of pottery. I washed a few bits in the sea and discovered one terracotta fragment had decoration. Painted in black was part of a cross within concentric circles (fig. 1). "It's Protogeometric...", I mumbled, which Kris took to as a cue to drag me away to a taverna as quickly as possible.



1.
A shard from the beach at Aegina

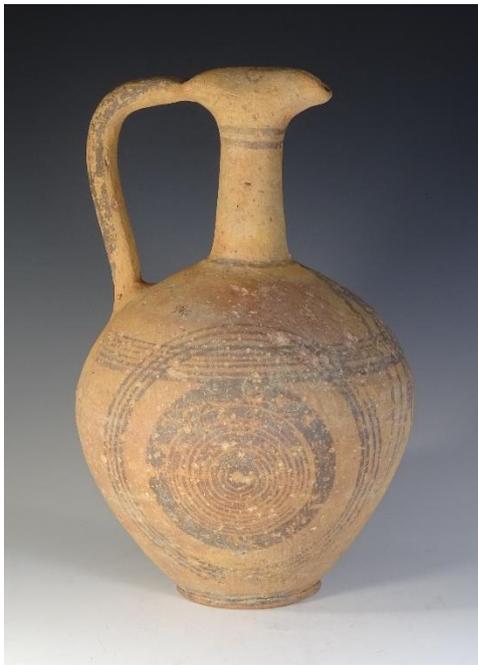


2.
Protogeometric Skyphos, c.960-900 BCE (National Museum of Archaeology, Athens)

Two days later I was in the National Archaeological Museum in Athens, one of my favourite places on earth. I soon spotted a perfect match for the shard I had found. A display of pottery from a cemetery at Nea Iona, 7km northeast of Athens, included a *skyphos*, a footed bowl with handles that was part of an important find of pottery datable to 960-900 BCE. I photographed the display cases (fig.2) and when I got home, I researched the pottery online. The handsome *skyphos* belongs to a group of Athenian drinking vessels that has been called the Charitonidis Class after the archaeologist who published two complete examples found on the south slope of the Athenian Acropolis¹. The geometric decoration

features concentric circles, many of which have distinctive 'Maltese Cross Centres'. Probably made by a single potter within an Athenian workshop at the end of the Protogeometric period, Charitonidis Class *skyphoi* have been found all over the Aegean, including Aegina and as far as Knossos in Crete.

Finding this little shard renewed my interest in Classical pottery, and especially in the concentric circle decoration seen on many early vessels. I'd been fascinated since I was a child, as my Dad owned an Iron Age Cypriot pot that he used to take to lectures and he would ask students how they thought the circles had been drawn. Most thought they must have been done with a compass, but Dad told them they were drawn entirely by hand. I found this hard to believe and I tried to prove it, as my favourite toy in those days was a *Spirograph*. This had cogged wheels of different sizes that fitted inside each other, and it drew incredible geometric shapes. I also remember trying to tie pens and brushes together to make multiple drawing tools and I made a right old mess during an art lesson at school.



3. Cypriot oinochoe, late Geometric period, c.950-750 BCE

Recently I have been fortunate to buy a collection of Cypriot pottery from the later Iron Age with geometric decoration and this has given me a chance to study the techniques used. One early black-on-red ware jug from the later Cypro-Geometric period, circa 950-750 BCE (fig.3) is decorated with a bullseye of seventeen circles, some of different thicknesses. Surely a compass was used to draw these, I thought. But how? There's no sign of where the point of a compass would have marked the middle of all these circles.



4.



4a.



4b.

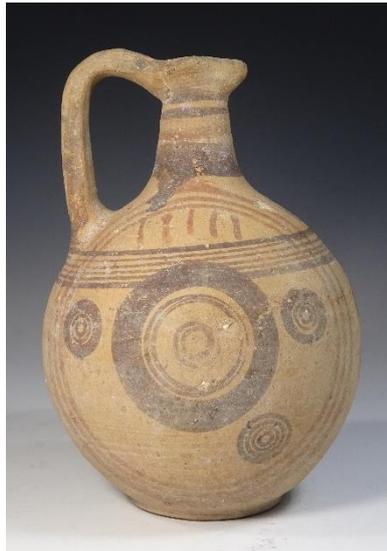
Cypriot bichrome oinochoe, Archaic period
c.750-600 BCE

Next, I looked at a white-painted bichrome oinochoe from the Cypro-Archaic phase, around 750-600 BCE (fig.4). Two bands of concentric circles show remarkable consistency in the composition of each group of rings (detail, fig.4a). And there, in the middle of each concentric group is a pinprick pressed in when the clay was still soft (detail, fig.4b). Ah, proof that they used a compass. Or is it?

If a traditional compass was indeed used to draw each ring one by one, the painter would have had to place the point of separate compasses, each slightly larger than the next, in exactly the same position. Less than a millimetre out would result in uneven rings; and wouldn't the pin-hole in the middle become deeper and a bit rough? These are so tiny and neat.



5.



5a.



5b.



5c

Cypriot bichrome small oinochoe, Archaic period, c.750-600 BCE

What about the circles on this small Cypro-Archaic jug that I bought for £10 at Faversham street market (fig.5)? These photographs are all from the same vessel, and yet some of the circles are very different. Some are extremely wobbly and there are smudges. Were these all drawn the same way?



6 and 6a.
Cypriot red-on-black amphora, c.800-600 BCE

The most impressive piece in my collection is a big wine amphora of Cypro-Geometric/ Archaic black-on-red ware (fig.6) dating from about 800-600 BCE. Bands made up of separate horizontal lines encircle the pot while the shoulder has a row of concentric circles. The horizontal lines are so close together they couldn't have been drawn individually while the pot was spinning on a potters' wheel. One of the concentric circles (fig.6a) seems to show that each ring starts and ends in the same place. There's only one possible explanation. A multiple brush had to have been used.



7.

Cypriot bichrome amphora, Archaic period, c.750-600 BCE

Many writers have addressed this conundrum in the past, and the technology is explained most beautifully and clearly in a paper to the American Journal of Archaeology (Vol.102, No.3, 1998) by John K Papadopoulos, James F Vedder and Toby Schreiber. This research is available onlineⁱⁱ and explains how the authors created a pivoted multiple brush. The pivot is a pointed stick that they liken to a souvlaki skewer. To this they joined at right angles a small bar or beam to which they attached a series of brush heads. They describe its use...

“To manipulate this pivoted multiple brush, the pivot can be rotated between the thumb and opposing index and middle fingers, while maintaining pressure on the pivot and a forward tilt of the beam. The radial tilt of the beam is adjusted as the surface curvature changes. The application of the slip is viewed best from above and behind the tool, with special attention directed towards maintaining a neat trail of slip from the outermost brush.... It is possible to replicate the concentric circles and semicircles of the Protogeometric pottery quickly and without difficulty. Indeed, within a few minutes of practice, a novice can become well versed and able to decorate efficiently a large number of pots similar in size and shape within a short period of time.”



8.

Armed with this knowledge, I looked at a splendid Cypro-Achaic bichrome jug that we inherited from Kris's parents (fig.8). The sets of circles are all remarkably even, but several show a tell-tale line where the multiple brush was placed as it started to rotate around its pivot (figs.8a and 8b). It all makes sense, now.



8a.



8b.

In addition to Classical Greece and Cyprus, concentric circles as a form of ceramic decoration can be found in various cultures and civilisations, including the Ancient middle east, Egypt, China and even Meso-America. I'm not going to begin to wonder who did it first, I'm just happy to know how it was done.

It's taken fifty years for me to prove to myself that Dad wasn't entirely wrong about the painter drawing the circles by hand. After all, holding our big bichrome jug I can almost feel the fingers of the potter, 2700 years ago, as he twirled the skewer fitted with five brush-heads. I'll have to have a go at making my own pivoted multiple brush sometime. But in the meantime, I'll just keep dreaming of sunnier climes. Instead of the Greek Islands, it's the beaches around the UK for Kris and me this year, and there's not much chance of Iron Age Greek pottery washing up on Barry Island...

ⁱ Papadopoulos, John K, The Charitonidis Class: a group of Athenian Late Protogeometric Skyphoi, *Opuscula* no.8, 2015

ⁱⁱ Papadopoulos, Vedder and Schreiber, Drawing Circles: Experimental Archaeology and the Pivoted Multiple Brush, *AJA*, Vol.102, No.3, July 1998, pp.507-509