

# Glass from the Port of Berenike, Red Sea Coast, Egypt

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Berenike is located about 800 kilometres south of Suez and some 260 km east of Aswan. The city was probably founded by Ptolemy II in c.275 B.C. and named in honour of his mother. It has been suggested that the site was established as a port during pharaonic times, but as yet there is no evidence to support this. The current excavations suggest that the site flourished until the late 5<sup>th</sup> or 6<sup>th</sup> century A.D. (Sidebotham, Wendrich 1996). Although known from ancient sources such as Strabo's *Geography*, Pliny's *Natural History* and the anonymous *Periplus of the Erythraean Sea*, its remote location has meant that until recent times Berenike has been very little visited, let alone investigated. As a key port for the so-called "Indian Ocean Trade", Berenike offers the opportunity to study a wide range of import and export goods, as well as to examine the social context of artefacts used at the site itself. With regard to the glass, it also offers the opportunity to build up a more refined chronology of Roman glass in Egypt.

The site was discovered by Belzoni in 1818, and it was he who made the first limited excavation in the temple to Serapis, which is the best known feature of the site. However, the best early records of the site come from the work of John Gardner Wilkinson and are to be found in his manuscript notes of 1826. These notes were taken up by Meredith (1957) and used in his study of the site. The city is one of several with the name Berenike, but is identified by Meredith as *Berenike Troglodytica*, though he notes that this suffix is not used in the ancient sources.

So far as known, the city had no independent source of fresh water, and probably relied for its supply on water brought in from a huge well within the fort at Wadi Kalalat, some 8.5kms south of the site. Much of the food consumed at Berenike must also have been imported. Some would surely have arrived by sea, but the bulk must have been transported from the Nile valley, largely along the Koptos-

Berenike Road. However, the excavators suggest that goats, as well as some cattle and pigs were probably raised locally, in addition to the marine resources. There may even have been some cultivation of vegetables in garden plots. Other fruits such as dates and perhaps raisins are known from the excavation and were probably imported.

Berenike is not, however, the only Roman settlement in the area. In the hills south west of the site is the well preserved settlement of Shenshef. This site has no obvious function, lacks agricultural land, is not on a major trade route and is not sited for the exploitation of mineral resources. Despite this, it appears to be quite wealthy, something borne out by examination of the glass. It has been suggested that Shenshef served as a kind of retreat to which sections of the population of Berenike withdrew at certain times of the year. If this is the case then we must imagine that Berenike itself was not fully occupied at all times.

The new work at Berenike which began in 1994 has produced a large quantity of material. The processing of the glass excavated to date is not yet completed; that from the 1994 and 1995 seasons was provisionally examined by Dr. John Hayes (1995) and the remainder, as far as the 2000 season, is being processed by myself. At present I am not in a position to summarise the glass as a whole, though it clearly has a considerable chronological span. The carefully controlled excavations offer the opportunity to provide a well dated sequence for Roman glass in Egypt. Although it has long been recognised that the dating given in *Karanis* (Harden 1936) must be revised (Whitehouse 1999), there has been surprisingly little recent work in this direction, an exception being the study of the glass from Quseir el-Qadim (Meyer 1992). This paper therefore makes some general observations based around some of the material studied to date.

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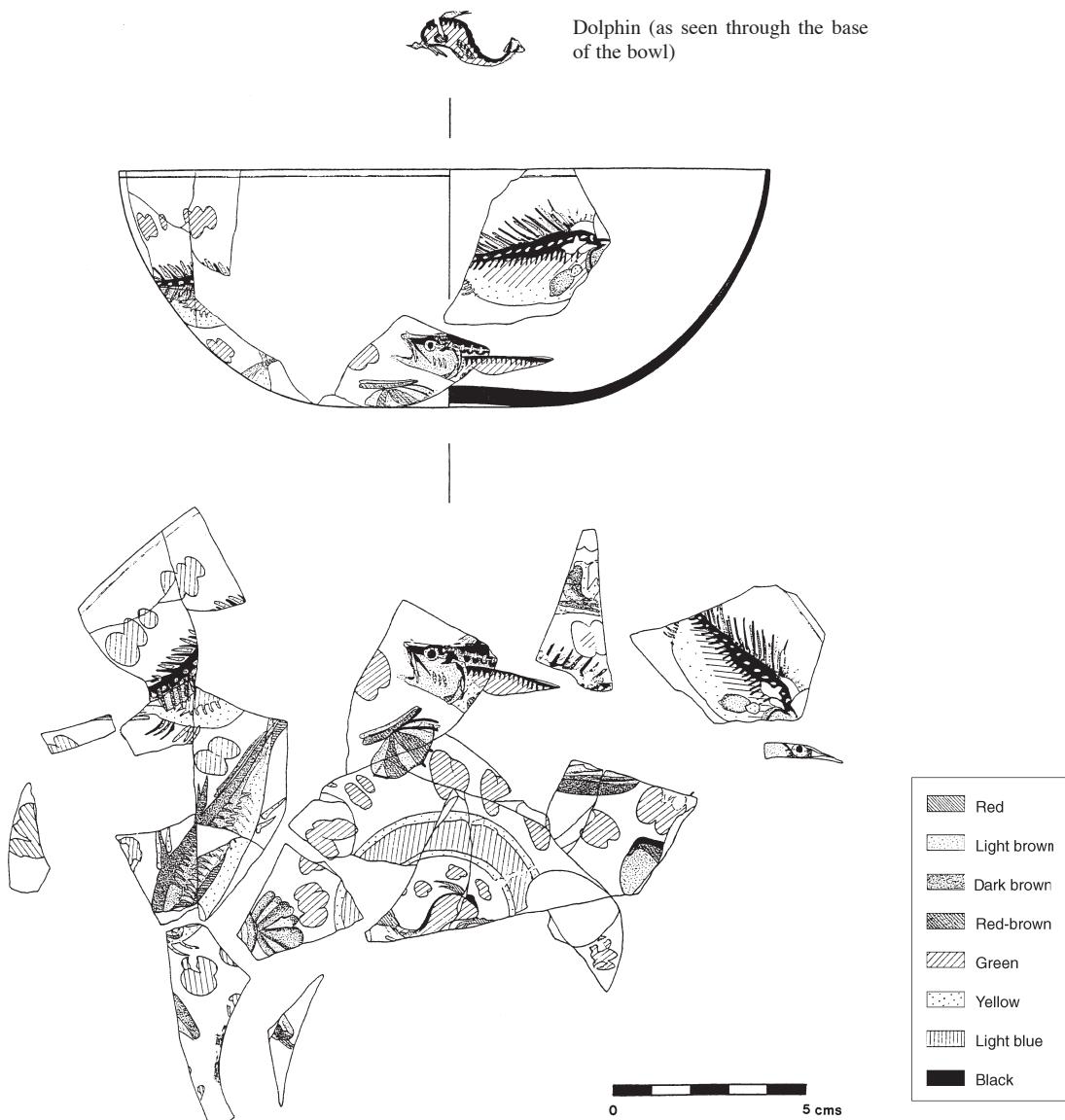


Fig. 1a — The Berenike fish vessel. (Drawn by Christine Dijkstra).



Fig. 1b — The Berenike fish vessel. Courtesy of the Berenike Project.

As newcomer to the study of Roman glass, I was immediately impressed by the quantity of “exotic” or “prestigious” glass included in the assemblages at Berenike, particularly from Trench 10 (below), but also from other trenches. I have frequently found *Glass of the Caesars* (Harden *et al.* 1987) to be a useful starting point in identifying fragments from Berenike, which is not a situation I had anticipated. The following outlines some of the high-status glass occurring across the chronological range of the site.

## 1. The Painted Bowl

The site has produced a number of painted fragments, of which the most spectacular is the *Fish Bowl* which we have written up for the forthcoming volume of *Berenike Reports* (1999 Report) (Price, Nicholson in press) and which we summarise here. The bowl (fig. 1) came from trench 31 in rubbish deposits dating from the third quarter of the first century AD. It comprises about twenty-five fragments, many of them joining in two principal groups to produce a complete profile. The glass is transparent and colourless with a slight greenish tinge and small bubbles are present throughout. The profile is convex, the rim is vertical with a smooth, rounded, cracked-off and ground edge and the base is concave. As reconstructed, the bowl is approximately 63mm tall, the diameter is 170mm at the rim and 35mm at the base, and the glass varies in thickness between 1.5 and 4.8mm.

The body is decorated with a narrow horizontal abraded band below the rim and there are scenes of marine life in two registers, interspersed with vegetation and shells. The upper register contains at least two spiny and heavy-bodied fish swimming to the right and scattered patches of marine vegetation, while the lower register contains at least two fish swimming to the left; these are longer and sleeker, one has two dorsal fins, and they are interspersed with marine vegetation and shells. The base has a broad circular band enclosing a dolphin facing right. A wide variety of colours has been used in the composition, including red, pink, brown, green, yellow, light blue and black. Dr. Wim van Neer of the *Royal Museum of Central Africa* in Brussels has provisionally identified some of the fish as belonging to the *scombrid* – mackerel group and the shells as *pectinidae* – scallops.

Painted – or more correctly enamelled – glass of this kind uses powdered glass and demands considerable skill in order to fuse the colours to the underlying glass without reaching a temperature so great as to melt the vessel or cause the colours to run. The bowl in question here shows excellent control of the technique and would have been a prestigious piece of early Imperial tableware. Enamelled glass is thought to have developed in the eastern Mediterranean, probably in Syria or Egypt and then spread to the west during the 1st Century A.D. (Sorokina 1993; Rütti 1991). However, evidence for the origin of enamelled glass is somewhat uncertain, and the question must remain

open.

This Berenike example is remarkable in several respects. Firstly, the form is different from the two vessels commonly found with enamelled decoration, which are small hemispherical cup or bowls, and amphorisks (Isings 1957, Forms 12 and 15; Rütti 1991, fig. 23). This is a bowl of larger dimensions and with a more convex profile. Secondly, the glass of the vessel is very nearly colourless, rather than brightly coloured or pale bluish green, which is usual in the small cups and amphorisks. Thirdly, the pictorial subject is relatively unusual. The best known example of a marine scene occurs on a small hemispherical cup from Oberwinterthur (*Vitudurum*) in Switzerland and smaller fragments are also known from Oberwinterthur, Vindonissa in Switzerland and Xanten in Germany (Rütti 1988, p. 46-52). Lastly, the decoration on the Berenike vessel is much more accomplished than any of the first-century painted vessels. It has a greater wealth of detail in the presentation of the motifs, a wider range of colour, and was painted without the use of guidelines.

## 2. Selections of glass from Trench 10

Trench 10 has been particularly significant in terms of finds of glass, and some exceptional pieces have emerged. From Locus 223 of that trench comes a handle probably from a knife or strigil. It is 64mm long and is 20 x 16.5mm at the widest end. The piece is made in marbled mosaic glass comprising opaque turquoise blue, red, yellow and white. The handle is tapered and the ends are rounded. The long sides are also bevelled. When excavated the piece contained an iron tang which had rusted and so shattered the glass. In order to reconstruct the piece the iron was removed in conservation. There are holes at each end of the handle, one where the blade would have projected, the other presumably where the end of the tang would have been expanded to make a rivet head. The “pottery dates” from this trench belong to the late 4<sup>th</sup> century A.D. I have so far found no parallel for this piece.

This same trench has also been the source of some of the bichrome facet cut glass known from the site. This glass is produced in the same manner as cameo glass, but the cutting is less elaborate and the designs geometrical. Cameo glass was produced between about 25 B.C. and 50 or 60 A.D. with a later flowering between the mid-3rd and mid-4th centuries A.D. (Whitehouse 1991, p. 19). The bichrome faceted pieces from Berenike belong to this later phase, which is less well studied than its earlier counterpart, and for which some flexibility of dating remains possible.

The most spectacular piece (fig. 2), comes from trench 10 locus 025. It is made of water-clear colourless glass with an outer layer of blue and is probably part of a bowl or possibly a jug. The design comprises the remains of four St. Andrew’s crosses cut through the blue and themselves arranged around a cross. The St. Andrew’s crosses are less deeply incised than the main cross, which shows marks

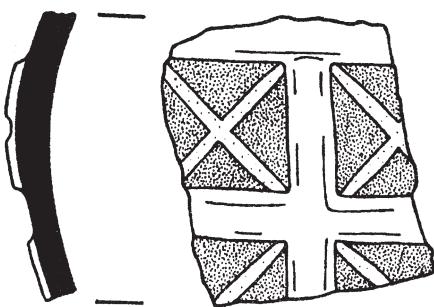


Fig. 2 — Bichrome facet-cut piece from Berenike Trench 10. The shaded area is cobalt blue. Shown actual size (Drawn by Christine Dijkstra).

from an abrasive wheel. At the top of the piece, above the level of the decoration, there is some slight discolouration where the blue layer has either been incompletely removed or where colour (probably cobalt) from it has discoloured the otherwise colourless glass.

In a second example (fig. 3) the large conventional cross is coloured, apparently mauve, whilst the St. Andrews crosses are incised into the clear background glass which has been cut away to make the main cross. The St. Andrew's crosses themselves are again shallowly incised. There are some indications of setting-out lines on the mauve cross. The fragment is obviously not from the same vessel as the previous find, and so establishes work of this kind as more than a unique find, although the source of its production is not known.

Also from trench 10 is a water-clear colourless glass overlaid with blue, but this time the design comprises the remains of 7 facet-cut polka-dots, cut through the blue layer. The cutting of these depressions is relatively crude

and shows clear marks from the abrasive wheel.

These bichrome pieces were probably produced by the casing technique, in which a bubble of the underlying layer is blown inside a cup shaped layer of the outer glass. The two are then re-heated and blown together. An alternative would be the flashing method, whereby the inner glass is dipped into the coloured outer glass before blowing the two together.

### 3. Cameo glass from Trench 13

There is also one (possibly two) example of true cameo glass, this time from trench 13 locus 002. The most certain piece (0849) is a small fragment of transparent turquoise glass which has been partially overlaid with a white glass. The white is markedly vesicular and in places almost 1mm thick. It shows little sign of having been cut, but rather gives every appearance of having been shaped. The cutting lines so easily visible on the bichrome facet-cut glass are absent here. The small size of the fragment (max. length c. 2.1 cms) makes the subject of the cameo work uncertain. From the same context however, comes what is probably a similar piece (0544). This is on the same transparent turquoise glass, itself overlain with an opaque turquoise glass with black lines. The pattern appears to represent leaves or petals, and when viewed from the outside the effect is strikingly like that of a faience lotus chalice, a well known Egyptian form and this is likely to be what is intended here. However, it would be odd to use glass to imitate faience and one might suggest that at the rim, which is not preserved, the petals were cut back to expose the transparent glass underneath which would have given a very striking appearance to the piece. The material from trench 13 is mostly to be dated to the 1st century A.D., and these pieces would be consistent with Whitehouse's (1991) first phase of cameo work dated to between 25 B.C. and 50/60 A.D.

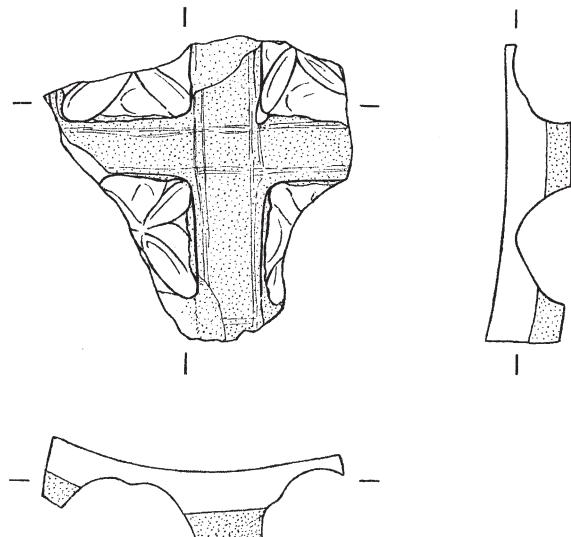


Fig. 3 — Bichrome facet-cut piece from Berenike Trench 10. The shaded area is a mauve. Shown actual size. (Drawn by Christine Dijkstra).

### 4. The site of Shenshef

As I mentioned earlier, it is too early to make many broad statements about the role of glass at Berenike. However, it does seem that much of the rich glass was intended for domestic consumption, rather than as items for export. My reason for saying this is that it appears from a wide range of contexts at the site, but also from beyond it, at the site of Shenshef in the Red Sea mountains. This site needs to be considered alongside Berenike if one is to see the glass in its most meaningful context. Excavations at Shenshef suggest that the site was occupied during the 5<sup>th</sup> century A.D. and that it was a fairly prosperous settlement, even though the source of its prosperity remains uncertain. The excavations have unearthed the same high quality glass as found at Berenike itself, suggesting that it was intended for local consumption rather than for export.

The work at Shenshef has yielded numerous important fragments, including a sherd of a water clear cup or bowl

with facet cutting (0974). The fragment is from a rim although the rim itself is too small to yield a reliable estimate of diameter. Jennifer Price has pointed out that glass of this quality cannot be later than the 4<sup>th</sup> Century A.D., and she recognised this piece as similar to one which appeared at auction some time ago (Sotheby's 1991, p. 22-23, no. 58). That piece bore the inscription "Drink may you live forever" in Greek letters, with the unusual characteristic of the *zeta* sign having been rendered upside down. The present piece includes a fairly clear *theta* sign though the letter which precedes it is less clear. It may be a clumsy attempt at *zeta* or some other letter. More research into letter forms of the 4<sup>th</sup> century is needed before any firm conclusion can be drawn. However, it does seem likely that this fragment is of broadly the same type as that sold by Sotheby's, which had a flattened circular foot and a ground rim (Sotheby's 1991, p. 22-23, no. 58). If the ceramic dates for Shenshef are correct, then the piece would have been old at the time of its use there<sup>1</sup>.

Also from Shenshef come two sherds (0968 and 0969) of cobalt blue glass mould-blown into a corrugated shape resembling the ridges and grooves of a seashell. It is likely that this comes from a class of vessel produced in the form of a cockleshell, referred to by Fremersdorf (1961, p. 73) as *Muscheln*. These vessels occur in two forms, one closed and with a tall neck and pedestal base, the other as an open dish. The two fragments from Shenshef, probably both from the same vessel, may be from the closed type, but this is uncertain. The date given to such mould blown pieces by Isings (1957, p. 109, no. 91c) is 2nd-3rd centuries whilst those recorded by Fremersdorf (1961) are late in the 3<sup>rd</sup> century A.D. An example in the Toledo Museum of Art is dated by Stern to the early 4th century A.D. She notes that the Toledo example is in blue glass whilst "most, if not all, other published glass dishes belonging to this type are made of decolorized glass" (Stern 1995, p. 199). Most of the known finds come from Köln in Germany or Intercisa in Hungary and Stern suggests that the Toledo example may have been made in Köln. She also notes however, that the glass is similar to a 4<sup>th</sup> century group of glasses from an

as yet uncertain workshop in the eastern Mediterranean though "the exact relationship between this shell-shaped bowl and the eastern Mediterranean group has not yet been established". The pottery dates for Shenshef are 5<sup>th</sup> century suggesting that this piece would either be an heirloom or is entirely independent of Stern's Mediterranean group. A colourless transparent fragment (1055) probably from a similar shell vessel has also been unearthed at Shenshef, and similar pieces are now known from Berenike itself.

This short paper is intended to illustrate something of the range of "exotic" glass from Berenike and its hinterland, as well as the context of its use by the inhabitants of the site. The overall picture emerging from the Berenike project is of a cosmopolitan society, with traders from all over the Roman Empire, and perhaps beyond, living in considerable luxury and often with the most lavish goods and furnishings from their homelands. The finds of exotic glass are matched by similarly exotic textile, ceramic and other finds indicating that despite its remote location the community resident at Berenike, and Shenshef, was one of considerable wealth and sophistication.

## Acknowledgements

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[Nicholson] I have benefited considerably from the advice and involvement of Professor Jennifer Price in the project, and she has contributed the section on the fish vessel presented here, as well as commenting on the rest of the text. The excavation at Berenike is directed by Dr. Steven Sidebotham of the University of Delaware, and Drs. Willemina Wendrich on behalf of Leiden University, and I am grateful to them for allowing me to present this summary of the project - and of some of the glass. Fuller details of the project and of the glass can be found in the series of publications *Berenike Reports* which are edited by the directors and issued annually.

<sup>1</sup> Dr. Hilary Cool has suggested – on the basis of photographs – that this piece may be grozed. However, I have not had the opportunity to re-examine the piece in the light of her suggestion, and the damage to the edge of the sherd may be entirely fortuitous.

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