NOTES

An Egyptian Glass Vessel in
The Metropolitan Museum of Art

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Looking through the great number of late sand-core vessels in the Greek and Roman Department of The Metropolitan Museum of Art, I came across a sand-core vessel purely Egyptian in character (Figure 1). The pear-shaped vessel is made of translucent, copper blue glass and decorated with white and yellow thread designs. Its height is 8.11 cm., the maximum diameter of the rim 4.0 cm., and the maximum diameter of the body 5.65 cm. A piece including parts of rim, neck, and shoulder was chipped off and has been put back in place. The vessel was bequeathed to the Museum by E. C. Moore in 1891.¹

Egyptian sand-core vessels are known with certainty to have been produced from the early fifteenth century until the tenth century B.C.² Almost four hundred of these glowingly colored and delicately adorned vessels have been preserved as well as innumerable fragments. As far as we know, it was not before the sixth century B.C. that the sand-core technique was revived and a slightly different thread ornamentation became popular in the Mediterranean region.³ The so-called late

1. Acc. no. 91.1.1365: it was recently transferred to the Department of Egyptian Art. I am most grateful to Dr. Henry G. Fischer, Lila Acheson Wallace Curator in Egyptology at The Metropolitan Museum of Art, for his kind permission to publish this vessel.
3. P. Fosking, Glass Vessels before Glass-blowing (Copenhagen, 1940) p. 42.

FIGURE 1
Sand-core vessel, Egyptian, mid-xiv century B.C. Height: 8.11 cm. The Metropolitan Museum of Art, bequest of Edward C. Moore, 91.1.1365
sand-core vessels were produced on such a great scale that we still possess thousands of them. The sand-core technique continued to be used until the beginning of the Christian Era, when it was quickly made obsolete by the invention of glass blowing. This revolutionary change turned the manufacture of glass into entirely new channels. Although the Egyptian and the late sand-core vessels were both fashioned around a sandy core, these two types usually differ in quality of glass, in colors, and especially in shapes and ornamental design.

The Egyptian glass vessel from the Greek and Roman Department mentioned above is one of the most interesting specimens. While its shape and even the combination of patterns are almost unique, it can be placed with probability among a series of Egyptian vessels.

To produce this vessel, a pear-shaped sandy core was attached to the end of a metal rod. It was dipped into copper blue, molten glass and turned around until a thick layer covered it. Next the decorations were applied: a white thread of glass was wound in a spiral five times around the upper part of the body and another one six times around the lower part of the body. In both cases a single strand of yellow was added at top and bottom. The ornamentation was pressed into the still soft surface by rolling the vessel on a flat stone slab. Then on the upper part of the body the spirals were dragged upward fifteen times with a bronze pin, so as to obtain the festoons with which Egyptian glass vessels are frequently adorned. They end in loops, where the pin was taken out of the matrix. On the lower part of the body, the spirals were pulled out of place upward and downward to form a featherlike pattern. There are places where the threads are mingled with the matrix, giving the appearance of an additional, translucent, light blue thread design.

The vessel was then rolled again on a flat stone slab. But the material had already annealed too far and had become too stiff to acquire by this procedure a uniform and smooth surface. Next the rim was worked out of the body. The rim still retains traces of the pincers used to shape it. Horizontal threads of glass were then applied to the vessel to complete the decoration. The threads surrounding rim and base are yellow. The one above the festoons is also yellow, while the one below is white. A yellow band divides the upper from the lower part of the ornamentation. The feather pattern is encircled by yellow bands. The horizontal threads surrounding the body partly overlap the festoons and the feather pattern and still protrude in relief. Finally the core with its coating of glass was slipped off the metal rod and probably put between pieces of charcoal for annealing. After the glass cooled, the sandy core was scraped out to obtain a hollow vessel.

Most Egyptian glass vessels are perfectly preserved owing to the dry climate in Egypt. However, Egyptian glass vessels exported to the Mediterranean region and most late sand-core vessels have been damaged by moisture. As the translucent, copper blue vessel in question has hardly suffered from time, I would suggest that this vessel was found in Egypt. The surface retains its polish; there are only a few spots where the glass has turned silver blue through corrosion. Traces of brown earth still adhere to the side of the vessel where it touched the ground.

For several reasons this vessel can only be compared with Egyptian specimens. It is a pear-shaped alabastron. This shape is known among late sand-core vessels, which include tall and slender alabastra, amphiiskoi with button-shaped feet, oenochoi, and aryballoi, most of them fitted with different types of handles. Among the various Egyptian glass vessels, however, there are some rare examples in the shape of a pear. Of special interest to us is one in the Museo Egizio, Turin, that is dated to the first years of the reign of Amenhotep III (1403–1365 B.C.). It belongs to the funeral equipment of Cha from tomb no. 8 of Deir el Medineh in Thebes (Figure 2). This vessel, like the one in the Metropolitan Museum, has a protruding rim and a pear-shaped body with a somewhat flattened base, but it is taller, its height being 11.0 cm., and the body is wider, the diameter being 8.0 cm.

6. Fosina, Glass Vessels, pp. 43 ff.
Not only the shapes but also the thread decorations of the two vessels show similarities. The thread designs can easily be distinguished from those copied hundreds of years later in the Mediterranean region to decorate the late sand-core vessels. Apart from differences in the colors (for instance, instead of the Egyptian bright yellow color, there appears an orange; instead of sky blue, a turquoise) there are other differentiating characteristics.

The Egyptian threads are regular in thickness and in distance from one another, whereas the threads of the late sand-core vessels are often surprisingly irregular in spacing and breadth, some of them extremely fine in execution, some rather crude. In the case of an ornamental design with alternating colors, the Egyptian threads were interrupted after each different colored spiral—whether it turned only once or several times around the body. This resulted in a very exact decoration. The ornamentation of the late sand-core vessels, though, was usually built up in another way: A thread of one special color was used once only and was wound without interruption spirally around the body, leaving narrow intervals where ever the color was wanted for the pattern, and broad intervals where ever a thread of another color was to be applied later on. After this procedure, a thread of a second color was coiled on top of the first one to fill in the sparsely decorated areas, crudely crossing places where the first thread had been closely spaced. Up to three different colors were used.

The Egyptian spirals were pulled out of place to form festoons or feather patterns. Any straight bands were applied afterward. A great part of the spirals on the late sand-core vessels, however, often remained untouched to form straight ornamental designs, and usually only the threads of the body’s medial areas were dragged into different kinds of festoons and featherlike patterns.

Both of the Egyptian glass vessels referred to above have yellow threads surrounding the rim and the upper part of the body. As the rest of the ornamental design of the vessel in possession of the Metropolitan Museum is much more delicate and reveals a greater technical skill than the simple festoons decorating Cha’s vessel, one is inclined to look upon the former vessel as a product of glassmakers who reached a higher degree of craftsmanship. It might therefore be dated to the sec-

10. G. Daressy, Fouilles de la Vallée des Rois, Catalogue général (Cairo, 1902) nos. 24099, 24733, 24779, 24773.
ond half of the reign of Amenhotep III or to the beginning of the Amarna period. The dating is strengthened by the fact that fragments with similar patterns have been excavated in Malkata—Thebes—as well as in Amarna. However, Cha’s vessel was made during the first years of Amenhotep III’s reign, when the palace area, Malkata, had not yet been erected. The similarity of a great number of fragments from Malkata and Amarna results from the fact that the same group of manufacturers who worked in Malkata under Amenhotep III followed Amenhotep IV (1365–1347 B.C.), the successor to the throne, to his new capital at Tell el-Amarna. As glass had a high trade value, and as the aristocratic class, who were the only ones who could afford these precious objects, had moved, the glass-makers of necessity moved with them from Malkata to Amarna. The decorations on the Metropolitan Museum’s vessel can be compared with those on many fragments from these factories, which have the same designs.

As to the regular festoons ending in loops, there is a similar design on a blue fragment from Malkata in the Victoria and Albert Museum, London, no. 421/33-1897, decorated with yellow, white, and light blue, and on a great number of fragments from the South Village and the Magazines in the area of Malkata that are now in the Metropolitan Museum. The same kind of festoon occurs on fragments from Amarna, which are in various other museums, for instance, a very typical one in the Staatliche Museen zu Berlin, Ägyptische Abteilung, no. 131, which shows the same translucent, copper blue matrix adorned with white festoons surrounded by yellow ones, as on the vessel in question.

The same type of feather pattern, though more vivid, appears in the same colors on a fragment from Malkata in the Victoria and Albert Museum, no. 421/48-1897, as well as on many other fragments in similar combinations of colors that were excavated by the Metropolitan Museum in the South Village area and in the Magazines of Malkata. As most of these fragments are very small, they have not been given numbers, and the same is true of many other similar fragments from Amarna in various museums. Many of them are analogous to the fragment in the Staatliche Museen zu Berlin, no. 73. Patterns enclosed by straight horizontal bands occur occasionally in Malkata, but they are much more common in Amarna. Two handled flasks from Amarna show this type of decoration, for instance.

The vessel in the Metropolitan Museum can also be compared with a series of vessels that were previously assigned to a group of manufacturers of the time of Amenhotep III and Amenhotep IV. There are in particular two vessels showing many similar details. One is a glass amphoriskos in the Louvre, no. AF 2622

This shows two patterns separated by three horizontal bands, a yellow one flanked by white ones, exactly as they occur on the vessel in question. The design consists of festoons and arcades running into feather patterns and ending in loops, again exactly as they decorate the Metropolitan Museum’s vessel.

The other vessel of special interest to us is no. 1836 in the Ägyptische Abteilung, Staatliche Museen zu Berlin (Figure 4). It is decorated with a feather pattern encircled by straight bands, as on the Metropolitan Museum’s vessel, and adorned with festoons of the same kind as those on Cha’s vessel, but in this case bordered by horizontal threads.

Thus it is possible to establish a chronological correlation between the vessel in the Metropolitan Museum and several Egyptian glass vessels and fragments. Certainly the Metropolitan’s vessel was produced in Egypt by a group of manufacturers working originally in the palace area of Amenhotep III, Malkata, and later on in the capital of Amenhotep IV, Tell el Amarna. For several reasons I am inclined to date it even more precisely and to ascribe it to the glass factories of Tell el Amarna. There are, for instance, the horizontal bands encircling the patterns as well as the composition of a copper blue matrix decorated with yellow and white threads only. These traits were still rare during the reign of Amenhotep III and became more popular only a little later.

**FIGURE 4**
Sand-core vessel, Egyptian, first half of the xiv century B.C. Height: 12.5 cm. Staatliche Museen zu Berlin, Ägyptische Abteilung, no. 1836


16. R. Lepsius, *Denkmäler aus Aegypten und Aethiopien*, Textband I (Leipzig, 1897) p. 155, fig. 3; *Ars Vitraria, Kunstgewerbemuseum Schloss Köpenick* (Berlin, 1965) p. 31, fig. 4.