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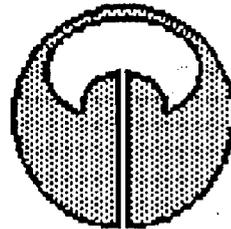
MARGARETOLOGIST

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Feature Article: BEADS FROM A WRECKED SLAVE SHIP

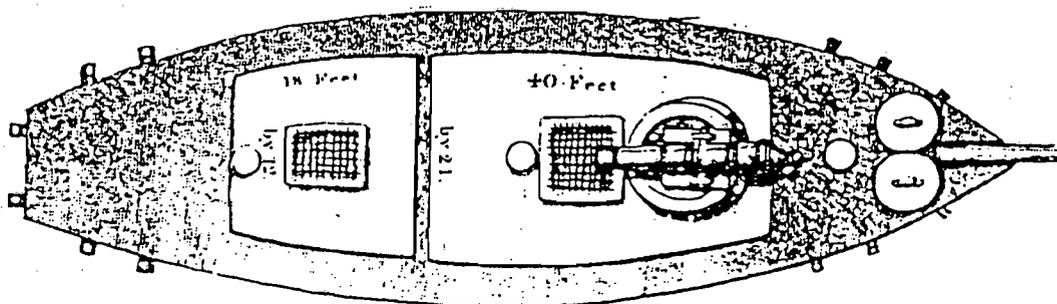
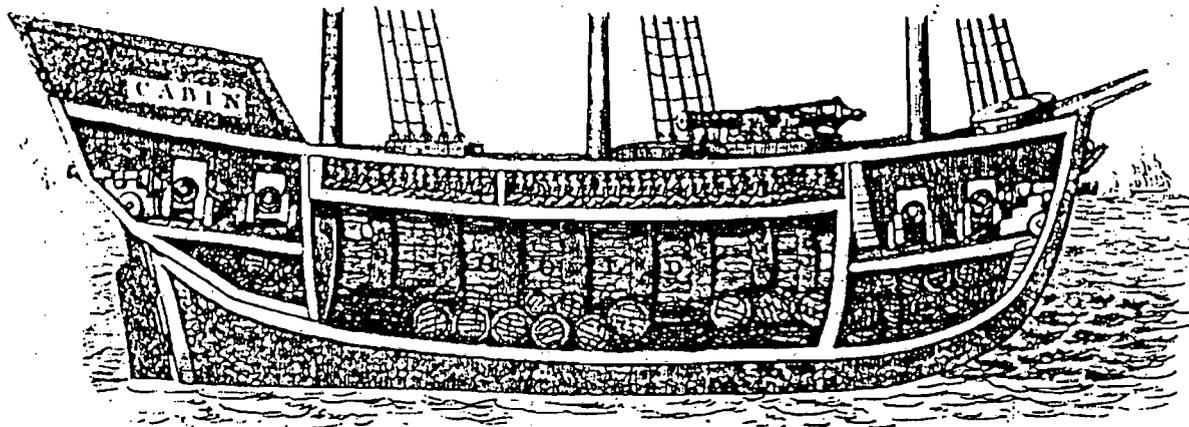
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Through the Eye of a Needle

Here it is: the rest of the story about beads from a slave ship. And, yes, Virginia, the picture of the ship on page six, which fits the description of the *Henrietta Marie* very well, is from the back of an old playing card.



Both major stories in this issue are reports of collections of beads which have not been excavated by the usual "official" archaeologists. The Mel Fisher group worked with state permission and paid close attention to the archaeology of the *Henrietta Marie*, but has also engaged in salvaging that raises eyebrows in professional circles. The Awad collection was sifted from soil by people who were using the dirt for agriculture; no claim for any sort of careful excavation can be made for it.

Some readers may hesitate. I have long campaigned against the illegal removal of artifacts, the looting of sites, the paying of diggers to find treasure, the sale and promotion of antiquities. How can I now work with such collections?

I have been engaged in a lively letter/FAX discussion with "X," a European collector who has gone to an Asian country to buy beads. X asked me where to find them, but I replied that looting for beads had not started in that country, and I hoped X's attention would not begin the process. I said an excavated bead can be made to "sing" because its context, date and location were known and its story could be learned. But a looted bead sitting in someone's collection is only a pretty bauble, dead as far as telling its life story goes.

Unfortunately, we don't live in a perfect world. There are gray areas. Collections like those highlighted here have much to tell us because they are kept together and their origins known. Even so, the contrast between these two collections is striking. The *Henrietta Marie* collection is well documented, but the Awad collection could tell us much more if it had been scientifically excavated. Where were certain beads made? Could beadmaking areas be identified? Would their locations tell us something about the beadmakers? At what time in 600 or more years were certain beads popular? And so on.

I resist working with private collections which are still adding beads from unauthorized digs. I am pleased to report that the owners of several such collections have stopped buying antiquities, including the one mentioned two issues back. Progress is progress, even if sometimes slow.

Many thanks to Virginia Le Pichon, who has been doing a lot of work around the Center in recent months. She is responsible for most of the graphics in the last two issues, and this is only a little of the great help she has been.

I think of the next column as the "bulletin board." Notice the dates and theme of Bead Expo '96. It's going to be the biggest ever, eight days, counting pre- and post-conference workshops.

Calendar 1995 - 1997

- * December '94 - February '95 Developing exhibit for Type Collection of Beads in the Philippine National Museum; lecturing to the Philippine Bead Society
- * March - May '95 Research in East and South India
- * May - June '95 Bead and Art Tour of Indonesia
- * September 7 Lecture Denver Museum of Natural History
- * September 8 Keynote Speaker Loveland Museum/Gallery
- * September 9, 10 Bead Workshop Denver Museum of Natural History
- * October - November '95 Czech Bead Conference; East European research
- * November '95 - January '96 West African research
- * March 7 - 11 '96 Bead Expo '96, San Antonio, Texas
- * Late '97 Excavation of Roman Period Egyptian Red Sea port

(starred dates are rather firm)

CORRECTIONS

In the process of putting together the last issue, a couple of errors and omissions crept into the article on BEADS IN THE CODICES. Please note them.

On page 3, Fig. 2 is upside down. In page 7, full paragraph 3 the ornament presented in the Lienzo de Patzuara is like that on Fig. 1 D, not Fig. 1 E.

A full explanation for Fig. 1 was also omitted. A 1 is a jade bead; A 2 a pendant; A 3 a strung bead. B is a conus shell. C are three signs representing turquoise. E is an ornament. F is a necklace of flat plates. Figs. B to F were adapted from Moser [1977:132-3].

And yes, it is BEAD MUSEUM. Sorry Gai.

Bead Expo '96
From the Heart of the Earth:
Stone Beads
7 - 11 March 1996
San Antonio, Texas

REMEMBER

- * If the last digit on your mailing label reads 8:1, it's time to renew
- * Notify us before you change your address.
- * Memberships make wonderful Birthday and other gifts.
- * Encourage your bead society and bead shops to support us and all research groups.

The Margret A. Carey "Gotcha" Award

This is not a joke. Spot a typo and get a point. Spot a factual error and get 3 points. Send in your list within a year of publication (June 1996 for this issue). The most points win a bead sample card from our collection. We will print corrections as they are found.

BEADS FROM A SHIPWRECK: THE *HENRIETTA MARIE*, AN ENGLISH MERCHANT SLAVE SHIP

THE ENGLISH SLAVE SHIP, *Henrietta Marie*, sank off the Florida Keys in 1701-2.

Several salvage operations have been done on the ship, which is now being placed in a museum. The Center was asked to study the beads. One result was the article on Gooseberry beads in issue 7(1). This is the second part of our report.

Background to the Trade

One of the least glorious chapters in history was the establishment of the slave trade following the European discovery of America. While slavery is an ancient institution, its nature changed to make it a deep scar on the human psyche.

Europeans found the New World populated, in some places densely. Yet, with their superior arms they could seize the vast territory. Initially they looked for precious goods – gold, silver, diamonds, rubies, pearls and coral. Some were there; others not. New ones, such as jade, were added to their repertoire of fine things.

Soon Europeans began exploiting the land. There was real money in developing vast tracts to grow cash crops sold at tremendous profit to Europe. Familiar sugar, cotton and coffee and new tobacco and cacao (chocolate) were very profitable. But without farm machinery, enormous estates needed innumerable hands to work them.

Whose hands would they be? Europeans, but only if debtors or prisoners. Native Americans had places to run and hide and were vulnerable to common European diseases.

The great pool of labor was in Africa. Strong, able and immune to European ailments, Africans lacked the weaponry to prevent forced enslavement and the power to prevent European domination. Europeans traded with West Africa for many things, but it wasn't long before the most lucrative trade was human flesh.

The slave trade became integral to Atlantic commerce. European trinkets were traded for human beings, the lucky ones of whom went to Europe as personal slaves of the wealthy. Most poured into the American plantations, which could not operate without them.

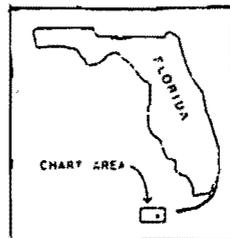
A large economic system developed. Americans took rum to West Africa for slaves they took to the Caribbean to exchange for sugar and molasses. The sugar was used as a sweetener; the molasses made more rum, which was taken to West Africa to... [Mintz 1991:126]. The English cycled manufactured goods to Africa in exchange for slaves shipped to the Caribbean for sugar, which was returned to England.

The emphasis on sugar is not misplaced. Columbus brought it to the New World on his second voyage

(1493-6) and it soon found a ready market in Europe: "from 1650 until the dawn of the twentieth century, the Caribbean region was the world epicenter for cane sugar." [Mintz 1991:119] And that meant plantations and slaves:

"The sugar plantations were infamous for their factory-like pace, their massed labor, and their ghastly working conditions." [Ibid.:124].

Thus, rhythms were established which linked four continents in a cycle demoralizing to everyone involved. But, what about beads? They were among the "manufactured goods" used in the trade. Their prime role was on the first leg of trade from Europe to West Africa to secure slaves.



Shipwrecks and the *Henrietta Marie*

Our readers know the Center has been the primary or secondary examiner of beads from several shipwrecks around the world. An advantage in studying them is that the date of the ship's sinking is often precisely known. Data from Chinese junks and Spanish Galleons have been most useful. The beads from the *Henrietta Marie* add another type of ship to our list, carrying a different sort of cargo.

The *Henrietta Marie* was a three-masted square-stern 160 ton vessel with a keel about 60 feet (18.5 m) long. She was probably captured from the French during King William's War (1689-1697) and renamed in honor of the French wife of Charles I of England. After her maiden English voyage in 1697 she was refitted in London in 1699 and sent out to West Africa with metalware, arms, cloth, indigo and liquor to trade for over 160 slaves and ivory, returning to England in July 1700 with sugar, wood, ivory and surplus trading goods. Goods on the wreck suggest that she sunk on the next voyage between October 1701 and March 1702 [MFMHS 1992:1-2].

The *Henrietta Marie* is the only complete merchant-slave ship in the Americas to be recorded, examined and preserved. It was located by a private concern in Key West, Florida in 1972. The Florida Division of Archives, History and Records Management performed the original salvage in

**The *Henrietta Marie*
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1972-3, which was resumed by Neptune Explorations from 1983-5 and 1991. Cataloguing and conservation is carried out by the Mel Fisher Maritime Heritage Society, which is building a permanent exhibit for the *Henrietta Marie* remains, and sponsoring a traveling

exhibit with lectures, films, other events, and with a comprehensive catalogue [MFMHS:2, 7-9; Moore 1987].

The Beads from the *Henrietta Marie*

The finds on the *Henrietta Marie* remind us of both Africa and Europe. Leg shackles were empty (the slaves had been sold) and elephant tusks were destined for England. Some goods were taken to West Africa but not traded there, including pewter vessels [Moore 1987].

The beads were overwhelmingly small drawn ones, principally of opaque yellowish green (65.7% of those now enumerated), with opaque and semi-opaque yellows (14.31 %) and translucent deep blue (13.33%) next. There were also about 150 Gooseberry beads [see issue 7(1)] and a few bugles of blue or clear glass.

The Origins of the Beads

Venice appears to have been the source of the beads. Bohemia had not yet begun production. Holland rivaled Venice in the 17th century, and was a major

While Venice made beads, it was England, Holland and others who exported them.

trading partner with England, but the beads on the ship are unlike Dutch beads. The small green and yellow ones are not recorded by Karklins [1974], and only the small blue "seed" beads [Ibid.:71-2] match. Holland made Gooseberry beads, but Karklins [1974:72] reported 13 to 18 lines, while those on the *Henrietta Marie* had 10 or 11.

As for England, the scant references to English beadmaking [Francis 1988:50-1] do not suggest a major export industry. The bugles could have been made in Holland or England, but the small drawn "seed" beads, were overwhelmingly Venetian. As the glass historian Dillon [1907:190] put it:

It must be remembered that the Venetians, at least in later times, did not trade directly with inland and barbarous races. Their business was to deliver their merchandise at certain seaport towns where they had factories or agencies. The goods then fell into the hands of local merchants who distributed them by caravans or sent them on coastways in their ships... In later days the merchants of Amsterdam and London, who held at times vast stores of Venetian beads, distributed them in Dutch or English ships to the very extremities of the world. The trade in beads was very active in the seventeenth and eighteenth centuries. At the present day, in the warehouses of Bevis Marks and Houndsditch, there is probably accumulated a larger stock of beads than in Venice itself.

(Bevis Marks and Houndsditch are parallel streets a block apart just off Bishopgate in London. Bevis Marks was the location of the famous Levin trading company from 1851 to 1893 [Karklins 1982:8]. I have not worked out who was in Houndsditch.)

The yellow and green "seed beads" are heavy in lead (specific gravity of yellow beads ca. 3.37, of the green 3.10). Lead was commonly used in these glasses in Venice, as a recipe book of 1847 shows [Moretti 1982:77]. As discussed in issue 7(1), the chemical composition of the Gooseberry beads also points to Venice.

From Beadmaker to Customer

We have no record of the *Henrietta Marie's* cargo or her trading activities, but we do have the next best thing: a detailed diary by John Barbot, part owner and cargo-master of the *Albion Frigate*, almost a "twin" to the *Henrietta Marie*, an English slave ship of about the same size, which sailed from London only eight months before her.

Initially Barbot [1746:459] complained about "The Black King of Great Bandy [Benin]," who demanded too much "and also objected much against our basins, tankards, yellow beads, and some other merchandize, as of little or no demand there at that time." After more than a week, most negotiations were settled, but still, "The Blacks objected much against our wrought pewter and tankards, green beads, and other goods, which they would not accept of." [Ibid.:460]

In the end, however, the English got 23 slaves (including three infants) and paid in iron and copper bars, silver coins, carnelian beads, glass beads and red cloth, valued at 271 "bars." The "bar" was the medium of exchange, nominally a bar of iron. "[A]ll the iron for Guinea [West Africa] is of the very same size and weight... and is called at London by the name of voyage-iron, and is the only sort used all over the coasts of North and South Guinea and in Ethiopia." [Barbot 1732:273]

At least in Gambia at the time, glass beads (presumably simple ones) were valued at a half a bar per pound [Curtin 1975:242]. In other words, the *Albion Frigate* was buying slaves for about ten pounds of seed beads each.

The Use of the Beads

We know who was involved in the trade and what things were (or were not) traded. But we might explore why beads were used at all. Aside from their

Beads were both essential and non-essential luxury items.

universal appeal, often noted in these pages, there were other motives. Ryder [1969:41] observed in the early trade between Benin (western Nigeria) and Europe that many goods were from India, and commented:

But perhaps the most striking thing about these trade goods and presents is that almost all could serve only for personal ornamentation; strictly utilitarian articles were conspicuously absent. Possibly there was no demand for them among those who controlled the trade; possibly the Portuguese were conscientiously observing papal prohibitions on the

sale of arms and iron to non-Christians. [Footnote 4 recalled that the Portuguese had a dispensation to trade in the goods forbidden by papal bull. Anyway, this does not seem to be the reason.] *Whatever the explanation, it is evident that none of these things was vital to the strength or survival of Benin. Consequently that state could regard its trade with the Portuguese with a high degree of indifference.*

Ryder hints at two things: 1.) The Africans recipients did not want utilitarian objects; they wanted luxuries and 2.) Beads were important expressly because they were luxuries, which could be foregone if necessary to maintain independence. We must never forget the role luxuries play in politics. They are symbols of status and prove to the hoi poloi that the leader/king/whatever has the cunning and power to extract wonderful things from strange foreigners. It has always been so, whether tribute demanded by the Emperors of Rome or China or presents given to chiefs in remote Asia, America or Africa.

At this date, the beads were mostly strung up for use. Barbot [1732:237] told his readers that the Africans, "adorn their necks, arms, legs, and waists, with strings of the finest sorts of Venice bugles, intermixt with gold, and ... corals [beads]." In time, the small seed beads were used for beadwork, but this did not become important until the late 18th century [Carey 1991:26-43].

How Beads Ended Up in the Wreck

The last stage in the "life" of a bead is getting deposited either purposely or otherwise where it is no longer used. How is it that these beads ended up in the wreck of the ship? There are several possibilities:

1.) They Were Rejected in Africa. We know the right bead in the right place is a key to trade. As

The right bead at the right time is crucial.

noted above, Barbot's ship had trouble with both yellow and green beads, though they were eventually accepted. Africans are selective about their beads. In the Kingdom of Benin (western Nigeria), historical records show no green beads traded. Ryder [1969:37, 55-6] noted only coris (aggreys) and yellow and "gray" (blue?) ones. Excavations show a similar pattern; at Benin 137 yellow beads (of 241 glass ones) but only 13 of green were found [Connah 1975:178]. Among the Yoruba today, beads for ceremonies and magic are rarely green; Pokornowski [1975] cited only three among the 35 types documented.

In western Cameroon small drawn seed beads are, "of opaque glass, most often of red, white or black... Local chromatic symbolism is responsible for the particular success of these three colors and the lesser interest in other hues." [Harter 1981:10] The preference of color is, of course, not limited to West Africa.

As trade developed, an increased sophistication evolved among the Africans so that by the mid 17th century they chose only those goods they truly wanted. Of course, styles changed, and around 1650,

new beads were accepted or rejected on aesthetic grounds [Ryder 1969:85-96].

Another phenomenon was operating in this trade: fierce competition among the Europeans. For example, in 1715 the Dutch in Benin had sold only a few of the 2,000 pounds of beads they imported because the Portuguese were bringing in the same beads and underselling the Dutch [Ryder 1969:144]. The English did the same thing in 1724 by paying more goods for each slave than the Dutch did [Ibid.:171].

2. The Beads Were Lost in the Hold. Beads are small things and are often lost, especially where concentrated at a beadmaker's or bead dealer's location. Some from the wreck were widely scattered, while

Even tens of thousands of beads may not be very many.

others were found in two concentrated "pockets." The scattered ones may have been dropped in the hold and lost between the boards. But what about the more numerous ones?

At the time of writing, not all the beads have been extracted from the lime formation in which they are embedded. Thus, there is no exact count of them, but the Office of the Registrar at the Mel Fisher Maritime Heritage Society reports that there are "perhaps tens of thousands of them."

While this sounds like a lot, it is actually not when considering such small seed beads. They were and still are often sold in "bunches." A bunch can vary widely, but Barbot [1746:405] in 1698 on the *Dragon* reported that a bunch weighed four pounds. A bunch of beads in the Center's collection from Papanaidupet, India, weighs one pound and has an estimated 43,650 beads on it. Thus, Barbot's bunch could have as many as 172,000 individual beads (or 137,000 to allow for the weight of the lead glass). "Tens of thousands" pale in comparison; we may be looking at only a few broken strands lying at the bottom of a keg or box.

3.) The Beads Were Used on the Middle Passage. Beads were not only worn by the people who remained in Africa, but by those taken to America as well. There is evidence for beads used or given to slaves while en route. Willyams commented on slaves brought into Barbados in 1794, "some of them were decorated with beads, given to them by their captors, and bracelets round their waists and ancles [sic]."

Beads were used on slave ships during passage.

Two years later on the same island, Dyott said of an English slaver, "I observed the females had all a number of different coloured glass beads hung around their necks. The master of the ship told me the chief employment, and indeed amusement, they had was in new-stringing their beads, and that very frequently [he] broke the string on purpose to set them to work." [Handler and Lange 1978:147; emphasis mine].

While the first thought of the excavators of the *Henrietta Marie* was that with so many beads, they must have been rejected in the Africa trade, it appears that the numbers are not so large as to assume that. They were either overlooked or perhaps even kept on the ship to distract the women of the flesh cargo.

Summary

The beads uncovered from the *Henrietta Marie* speak eloquently of the complexities of the trade in slaves. The great majority, perhaps all, were made in Venice, from which they were sold, perhaps through Holland, to England.

Their next stop was West Africa where they were exchanged to the elite for slaves and ivory (itself destined to be made partly into beads). These, in turn, were often redistributed to retain the power of the elite. The prosaic small monochrome beads were staples; in the case of the *Albion Frigate* they were 40% of the goods used in the trade. The Gooseberry bead was highly valued, and found on many slave-related sites and could buy a slave even in the last century for a palmful [1994, 7(1):5-7].

The final chapter in the story of beads (before the CBR saw them) was their loss and recovery. The numbers do not justify suggesting that they were rejected in the trade. Rather, they seem to represent a remnant of the trade, either lost or overlooked or used on the ship during the Middle Passage. They have survived, and as often the case with beads, allow us to reconstruct a little of their history and that of the people whose lives were connected with them.

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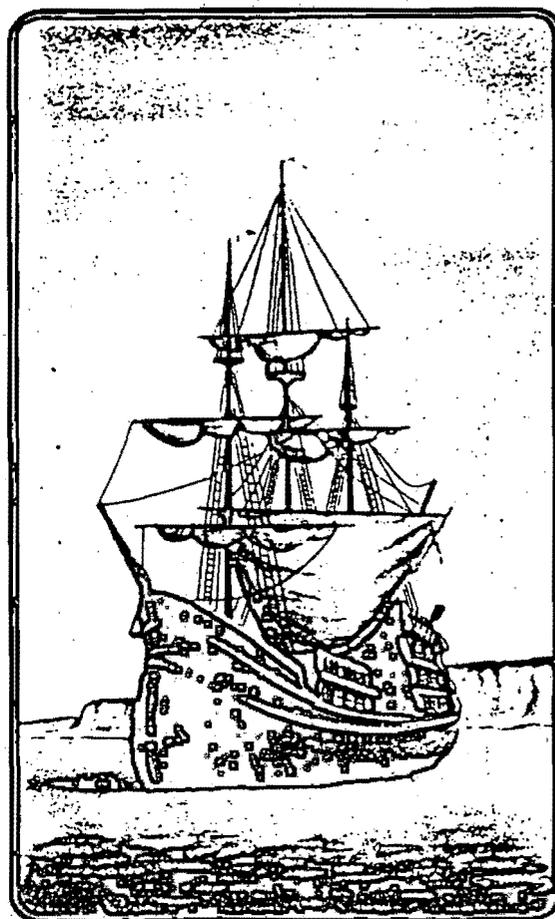
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A three-masted square-rigged vessel with a stepped deck. This may be something like the original appearance of the *Henrietta Marie*, though I am not a nautical historian.

THE BEADS FROM FUSTAT IN THE AWAD COLLECTION

IT WAS CALLED BABYLON (the colored door) when the Muslims captured it from the Copts in A.D. 641. They renamed it Fustat and built a huge tent city that became the focus of Egyptian social and commercial life. Next to it was built the walled fortress of Cairo.

Fustat was renowned as a glassmaker. The Persian Nassari Khosrau said in the 11th century, "They also make a transparent and very pure glass which resembles an emerald which they sell by weight" [Schefer 1970:151-2]. Glassmaking and beadmaking were carried out by Muslims, Jews and Christians [Goitein 1961].

But it came to an end in 1168 as the Crusaders approached, Vizir Shawar ordered 20,000 vessels of oil poured into Fustat and set ablaze. The populace sought the protection of walled Cairo. The fire burned for 54 days and smoldered for months. Glassmaking survived. Ibn Douqmak saw furnaces about 1400 [Clerget 1934:270] and one was excavated [Scanlon 1981:60-1]. But there was no beadmaking, and by the time Napoleon entered Egypt "The glass of Cairo...[was] as imperfect as the pottery..." [France 1829: Vol. 18, 387].

It was the beginning of the end for the long, mighty tradition of glass beadmaking in the Middle East, where glass was likely invented some 4500 years ago. In the days of the Phoenicians, beads from this region were spread around the Mediterranean and into Europe. In Hellenistic and Roman times beautiful and complex beads were made, some of which reached as far as Korea. The succeeding Byzantine and Coptic (Egyptian) periods saw the continuation of old techniques and designs, which persisted when much of the Middle East converted to Islam.

The Muslim World provided a "common market," which spread from northwest Africa and Spain through to India. Beads made in the Middle East joined those from India and were traded around the known globe. Middle Eastern beadmakers or their Malay apprentices took some techniques into Southeast Asia.

The Middle Eastern glass beadmaking world was then turned upside down. The Crusades destroyed not only Fustat but Tyre as well, and what was left was raped by the Mongols (for example, Damascus). Little remained, save the remnant of Tyre beadmakers in Hebron and transplanted ones at Samarkand. From Hebron, beadmaking spread back to Cairo and over to western Turkey, and from Samarkand to Bokhara, Tashkent and Herat. None of these beadmakers reached the heights of excellence or the strength of international markets achieved in the 7th to 12th centuries in the Middle East.

Beads in Fustat

Fustat has long been an important Middle Eastern beadmaker. Discovering information about it has been a slow process. Only one limited excavation has been conducted under George T. Scanlon. The beads he found and those from private collections in the Islamic Museum, Cairo, have given us a glimpse of what Fustat may have produced [Francis 1989].

We have now had the opportunity to study another collection of beads from Fustat. They were not scientifically excavated, so no hint of location or stratification exists. Rather, they were recovered by people mining the rich soil of the ancient city. Before they used the soil, they sifted it and when they found something, kept it aside. Some people finding these artifacts were patients of Dr. Henri Amin Awad. In

part payment, they gave him what they found in Fustat's soil. After amassing a large collection of antiquities, Dr. Awad has decided to publish them in a catalogue, The Center was asked to produce a chapter on the beads.

Although the beads were gathered by unscientific

means, the collection is fairly coherent. There are a few older Roman period beads and a handful of 19th-20th century European one, but most fit comfortably in the Early Islamic Period and compare with beads from other sites from the 7th to the 12th century. They add significantly to what we know about Fustat's role in beadmaking and the bead trade. We shall not discuss every bead in the Awad collection here, but only some highlights.

Glass Beads Made at Fustat

Two types of beads had already been recorded as being made at Fustat. One, the "Fustat Fused Rod Bead" was uncovered by Scanlon [Pinder-Wilson and Scanlon 1987:17; Francis 1989:29]. These were made by fusing eight candy-striped glass canes around a (red clay?) core. The rods were set alternately so the exterior looked like it had been combed into a herringbone pattern. Pinder-Wilson and Scanlon pointed out a parallel to a bead from Sweden, but this may have been somewhat different [Spaer 1993; Francis 1993a]. Nonetheless, I have seen such beads from the West African antiquities market and in the Seligman collection of Chinese beads in the British Museum.

The other bead confirmed made at Fustat is a type of segmented bead (see page 8 for explanation of segmented beads). It is made of a wide tube, V-scored and spaced to make discs left in series. They have been found in Sungai Mas, Malaysia.

Now some other types of beads can be said to have been made at Fustat because their wasters are found

**Fustat (Old Cairo)
was a glassmaking
center of renown;
now we are learning
about the beads
made there.**

SEGMENTED BEADS

A segmented bead is divided along its length into sections. It may be made of many materials by various means. However, as a technical term, a "segmented bead" is a glass bead made by heating a drawn tube and constricting it along its length to make bulges. Each bulge is a potential bead. After cooling, the bulges are cut as single or multiple beads and may or may not be further worked to smooth off sharp edges. The technique is first recorded in the 3rd-2nd century B.C. [Davidson Weinberg 1969] and ceased being used in the 12th century A.D.

How were the beads constricted? While several devices have been suggested, two seem most likely. It is known from recent excavations that in Early Islamic Alexandria stones were grooved along the tops so a heated tube could be rolled along to segment it. Another likely device is a wire bent into a pincer which could be held in the hand to make grooves one at a time; this has proven satisfactory experimentally.

A problem is how to describe segmented beads. Thick-walled and thin-walled, hollow or not hollow have been tried, but these do not convey enough information. I have worked out the following system, which will no doubt need revision. Here it is for now.

The description assumes that three elements combine to make segmented beads what they are. One is the tube itself. Another is the process of constricting the tube along its length; this incision is referred to as "scoring." The third is the treatment of the beads after being created along the tube.

1. The tube. It is either wide (over 1.0 cm in diameter), medium (0.5 to 1.0 cm) or small (less than 0.5 cm). It is either thick (wall 25% or more of diameter) or thin (wall less than 25% of diameter); in practice, this measurement is very difficult to take unless one has a broken bead.

2. The scoring. It is either V shaped, leaving little room between each bead or U shaped (often squared off), leaving a wide distance between beads.

3. The "scoring pitch" (how close each incision is to the next). Depending on the scoring pitch, the bead (bulges) will be disc shaped, suboblates, oblates (scoring pitch equals diameter of the tube), short cylinders or tubes. Other effects such as a melon (the tube gadrooned beforehand) or collar (complex scoring) may be produced.

4. The finishing. Segments may be cut individually or left in series. Beads may be reheated to round off the cut edges or not; grinding is another possible finishing technique.

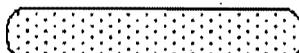
Several types of segmented beads were found at Fustat. Those confirmed as made there are wide-tubed V-scored disc beads left in series and medium-tubed, U-scored short cylinders cut apart and reheated.

PROPOSED CLASSIFICATION FOR SEGMENTED BEADS

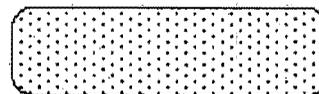
TUBE DIAMETERS



SMALL < 0.5 cm



MEDIUM 0.5 - 1.0 cm



LARGE 1.0 cm +

TUBE THICKNESS



THICK; WALL
25%+ OF
DIAMETER



THIN; WALL
< 25% OF DIAM-
ETER

**SCORING
SHAPE AND
PITCH**



*



*

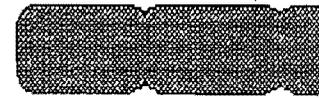
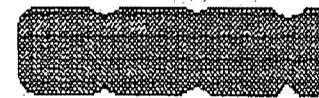


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*

U-SHAPED SCORING AT DIF-
FERENT PITCHES FORMS BEADS
OF DIFFERENT SHAPES



V-SHAPED SCORING AT DIF-
FERENT PITCHES FORMS
BEADS OF
DIFFERENT SHAPES

* STARRED BEADS ARE FOUND AT FUSTAT; ** DOUBLE STARRED WERE MADE THERE

in the Awad collection. Another segmented bead is among them. These beads are made from medium sized tubes, U-scored and spaced to make short cylinders. They were always cut apart and reheated to smooth off the ends. Some tubes of the right diameter and two-bead clumps (apparently from overheating, rather than caught in the fire) were found; the only colors being yellow and a bluish-green. Similar beads (though corroded and no color visible) were found in Siraf, Iran.

Beads from Fustat and West African Sites

An interesting connection exists between some beads found at Fustat and those found in West Africa. Much of the West African material has been looted from various sites, and so dates and precise locations are not known. However, several kinds of beads not on the antiquities market from this region have counterparts in Fustat and at least two were Fustat-made.

Many beads found at Fustat are similar to those found in West African sites.

Small diameter tubular beads were made at Fustat, judging from waste tubes found there. Some have hexagonal, square, lozenge and rectangular cross sections. These may be the tubular beads of odd cross sections found at Tegdaoust (ancient Aoudaghost) in Mauritania [Vanacker 1984:34, 41], an old center with early Arab trade connections [Al-Bakri 1913:317 ff.]. The most numerous tubes at Tegdaoust were oval in section, which might simply be round beads which have slumped slightly; 8 of the 35 beads from Fustat had such a section.

Another bead apparently made at Fustat is cut into discs from wide, thick tubes of bluish or greenish glass. The discs were placed on a flat plate and heated (perhaps in a furnace), making their upper surfaces run, round off and become shiny and their lower surfaces to stay flat and become pitted. They technically resemble the blue "nila" beads found in West Africa and are found along with them. The glass has a distinctive faint yellow fluorescence under a short-wave UV lamp, indicating the presence of some trace element which may help us find their origin. No Indo-Pacific beads have such a trace, nor do the smaller "nila" beads.

One class of beads is rather puzzling. They are some color of blue, ranging from pale to deep. They are ovoid in profile and flattened in section. It is not easy to see how they were made. They may have been formed by dropping hot glass onto a plate. Afterwards, however, they were drilled, as though they were stones. Why this was done is a mystery, unless these are what Nassari Khosrau meant when he wrote of Fustat's wonderfully transparent glass that looked like emeralds and were sold by weight. If by "emeralds" he meant beryl, the pale beads in this group might fit the bill and these beads may have been imitation gems.

We cannot leave this discussion without some thought of the most famous West African bead, the Aggrey. Tubular beads which look blue by reflected light and green by transmitted light, they were important elements in the bead trade before and just after Europeans arrived in West Africa [1993, (2):3-8; Francis 1993b:6-7]. Along with Aggrey beads are found tubular beads with rough longitudinal sides, called "corded" beads. These have been found to be chemically similar to Aggrey [Davison *et al.* 1971; Davison 1972:249-58]. No dichoric (two colors, as an Aggrey) beads are in the Awad collection, but four corded ones are, including some wasters. This is not enough to draw any conclusions, but might help point us in the direction of manufacture of these beads.

Faience

Faience is a ceramic made of quartz and an alkali. Unlike glass, the quartz never melts but sticks to itself only where the particles touch. At the surface, with a concentration of alkali flux, the quartz melts into a glaze of true glass. There are several ways to make faience, but the one used for most of these beads was to form pierced cores, pack them into a glazing powder and fire them in a large pot. The results were brightly colored crude beads of disc, suboblate and oblate shapes.

These beads resemble faience from Iran. Their manufacturing is similar, but the Iranian faience has a much thinner glaze, while the Egyptian faience is far more glassy. It may have been fired at a higher temperatures or for longer.

In both cases, these faience beads are so crude that one would not expect them to be worn by people. It is much more likely they were made for domestic animals (they are currently called "donkey beads" in Iran) as a protection against the Evil Eye. Whether they were made in Fustat or some other part of Egypt remains to be learned.

Beads Imported from Asia

A significant number (33) of Chinese beads are in the Awad collection. Most common (20) are small coil beads. Some have no or little lead, while most test positive for small to moderate amounts. Additionally, copper-ruby glass beads and short opaque bicones are in the collection. All three types are known as East African coastal sites. The short bicones are most common, recorded at Kitwa, Manda, Zanzibar, Pemba and Zimbabwe. These beads are also common

A surprise was the number of Chinese beads in Egypt, similar to those in East Africa.

in Southeast Asia, and the dates for both the Asian and African finds are the 10th to the 14th centuries.

As for Indian imported beads, there is one possible collar bead and several which might be Indo-Pacific beads. The most common stone beads are more easily pinpointed.

There were 13 white striped Babaghoria agate beads, no doubt from the Gujarat industry. Their ellipsoid or barrel shape has had a long life. An interesting aspect of these beads is that 11 of them contain some stringing material. Two are strung on iron wire and one on copper. One is on mercerized cotton and must postdate 1851. The other seven are on hemp, a common cordage before New World cotton was introduced. Scanlon [personal comm.] also found beads strung on hemp. This is probably the widest range of stringing materials reported from anywhere.

There were also 13 multifaceted carnelian oblates. There has been some discussion about the ages of these beads. Van der Sleen [1973:56] writing in the 1960s then in his 70s said "nearly all great-grandmothers" had them, putting their date to the early 1800s. A painting of Mme. Panchouke by Ingres in the Lourve shows her wearing these beads and is dated to 1811. They appear to be early 19th century.

Early European Trade Beads

Five beads in the Awad collection indicate trade with Europe in the 1500s. One is an unusual chevron with a clear blue-green core, surmounted by white/opaque blue-green/white/red/white. Between the corrugations of the last white layer are dark blue, red and opaque blue-green stripes, the whole covered with clear glass. It is thus a 7-layered chevron with stripes, faceted like other 7-layered examples. It is unusual for the period, though two are reported from Peru [Smith and Good 1982:36]. It might be transitional to the striped, clear coated chevrons (harlequins) which became popular in the 17th century [Francis 1988:25].

Additionally, there were four small Nueva Cadiz beads. They have dark blue cores, a thin white layer and a blue coat, are small (ca. 5 mm diameter, 6.5 mm in length) and square in section. Their life-span is about the same as 7-layered chevrons, from ca. 1500 to 1575 or 1600 [Smith 1983].

Nueva Cadiz and small 7-layered chevrons are nearly always found together in early Spanish sites in Venezuela, Peru, Mexico, Florida and the Philippines. No one argues that chevrons are not Venetian, but there has been much speculation on the origin of Nueva Cadiz beads. Their presence in 16th century Cairo suggests -- but does not prove -- a Venetian origin. Spain had hardly anything to do with Egypt at the time, but the Venetians, despite conflicts with the Turks, who controlled Egypt, were always anxious to continue their profitable trade with Turkey and Egypt.

Summary

The beads from the Awad collection are not entirely homogeneous, but for the most part can be attributed to the Fustat or Early Islamic Period, 7th to 12th century. They give us added information about beadmaking and importing at this time.

Three types of glass beads can now be added to the two previously identified as being made in Fustat. The new ones -- medium sized U-scored short cylin-

dricl segmented beads, tubular beads of both round and unusual cross sections, and thick, wide drawn disc beads heated to slump them -- join the Fustat Fused Rod Bead and the wide V-scored disc segmented beads.

Imported Indian stone beads are not much of a surprise, but two other imported categories are most interesting. The fair number of Chinese beads -- coils, copper ruby glass and short bicones -- match Chinese beads found on the East Coast of Africa (and also Southeast Asia) at this time. The Venetian 7-layered chevron accompanied by four small Nueva Cadiz beads shows trading with Venice in the 1500s and suggests that the Nueva Cadiz beads might themselves be Venetian.

Questions remain: 1.) What was the role of the drilled glass beads and where were they made? 2.) Are the small drawn beads at Fustat Indo-Pacific beads or locally made? 3.) While there is no evidence for Aggrey beads, there were suggestions of the related corded beads; what exactly is their connection?

Well, there will always be questions: that is the nature of our search. Fortunately, some of them have been answered and others can be raised more effectively.

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WHAT'S IN A NAME?

ONE OF THE MOST POPULAR BEADS around the world for the last two centuries is made from a hexagonal tube with the twelve corners ground off to give it a faceted appearance; it is usually blue. The only exception to its popularity seems to be the Kalinga of the Philippines, who grind them again to make them round [1993, 6(1):7-8].

Their Origin

These beads are often called "Russian," perhaps first by collectors in Alaska and the Pacific Northwest. Woodward [1965:9] and Jenkins [1972], both used this name, and thought they were "probably of Venetian origin" [Ibid.:35]. Archaeologists have long known they were not markers of the Russian trade in Alaska [Oswalt and Van Stone 1967:60; Ketz 1983:227], because they are rare and late. Ethnographically, the Crossroads of Continents exhibit had 14 occurrences of the beads, only two from Siberia, both in the early 20th century [Francis 1994:289].

When I discovered the Czechs made them [Francis 1979:11], I first thought they were imitations of Venetian beads, since that is what everyone else said. Ross [1990:38] suggested some were Viking or even Roman in age, but his Roman example is a ground but not cornerless hexagonal [Davidson 1952:pl. 122], and the Viking bead he noted [Klindt-Jensen 1970:170-1] is pictured so small that nothing can be discerned; no other accounts of Viking beads have anything like them.

The "Russian" name is persistent, common in the literature, even when acknowledging a Bohemian origin [e.g. Harris 1985, 1989; Dubin 1987:274-5]. After it was learned that a glass factory in Irkutsk, Siberia, made beads, it was asserted that these beads were made there [Bychkov 1994], but without any evidence. Bychkov also suggested there was little selling of beads in Russia from central Europe.

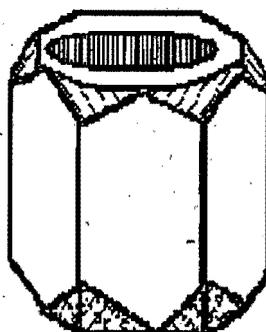
But the Czech/Bohemian origin is certain. Small examples with white cores actually seem to precede the large cobalt blue ones, and are documented on

sample cards in Jablonec [Francis 1988:39-40]. Vladislav Chvalina [1994] had this to say at Bead Expo '94:

Sawing glass sticks into individual beads and cutting them was a field where the Jablonec region was known to be the principal, if not the exclusive supplier. Extant records attesting to business trips by Bohemian glass merchants to Russia in the late 17th and the 18th centuries offer an explanation of how these beads got to Russia and through the intermediary of Russian fur traders to the American continent.

His remarks were made in the context of Atlas beads (Americans sometimes call them "satin," not to

be confused with wound satin glass beads of Venice). These are made from pentagonal tubes with many tiny parallel bubbles to give them a sheen and the ten corners ground off. They are found on the "manilla" wreck, a slave ship that sank off Bermuda around 1750 [Karklins 1984:34; Peterson 1977:724-7]. Except for the pentagonal rather than hexagonal section and the satin effect, they are technically the same as the blue beads we are discussing.



THE BEAD IN QUESTION
Drawn as a hexagonal tube, cut
into beads and ground flat at
each corner.

What to Call Them?

Even if we have confirmed the origin of these beads, we still have a problem: what do we call them? Here are the candidates.

1. Russians/Russian blues. If hard evidence turns up that these beads were made there, I'll eat crow. But I doubt it; the Bohemian evidence is very strong and they are in Alaska and Siberia only when most Russian trade goods were from elsewhere. They were well established elsewhere in the world where there was no Russian influence. I have long campaigned against this name because it is inaccurate and misleading.

2. Ambassador. Van der Sleen [1974:85] asserted they were called this by "the Rhodesians" because, "they were given by the chiefs to witch-doctors, who were sent...to ask advice from the great god of the Matabele." If this bit of ethnographic observation is

correct (I have never seen it anywhere else), it would be a preferable name. I used it for some time, but it never caught on, and being unsure of its authenticity, have dropped it.

3. Cornerless Hexagonals. Drawing a parallel from "cornerless cubes," Karklins coined this term. It's acceptable, but not widely accepted. It is too much of a mouthful (let alone to write). I have no objection to it, but I don't see it replacing "Russian blues" in the public domain.

4. Cut Blues. Frustrated, I did what I had to do with "Indo-Pacific beads" (which, by the way, is catching on very nicely): coin a new term. I took the old American trade term "cut beads" [Good 1983:165] and, since so many are blue, added this. The term has historical validity, is unique, descriptive and simple.

I brought this up at Bead Expo '94. Alice Scherer, obviously goaded by Karlis Karklins sitting next to her, asked why, when there was already an accurate, descriptive term, I would want to introduce a new one. Of course "cornerless hexagonal" is not completely accurate, since some have more than six sides, but my answer was this: After making a fuss about "Russian" in Bead Identification Workshops (I threaten to lower the final grade by a point), the question is what to call them. When I suggest "cornerless hexagonals" eyes roll up to the backs of heads. But when I mention "Cut Blues" there is a collective sigh of relief.

"Ya pays yer money and ya takes yer cherce."

Seriously, let me know your thoughts on this.

ADDENDUM

In the mid-1980s Henri and Jo-Ann Merke had the La Paloma factory in Zapopan, just outside Guadalajara, Mexico, make imitation Cut Blues. They were soon persuaded to put clear centers in the drawn tubes to help distinguish them from the originals. But many were made without these centers. They are nonetheless distinguishable from the Czech products because of how they were faceted.

Both were made from drawn hexagonal tubes. The Czechs cut the beads apart and ground the corners against a wheel, making flat facets. The Mexicans ground the tubes with the rounded edge of a wheel, then cut the beads apart. The facets are thus slightly concave. The ends also commonly show that the beads were broken apart after grinding. Production has apparently stopped.

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BEAD EXPO '96
FROM THE HEART OF THE EARTH:
STONE BEADS