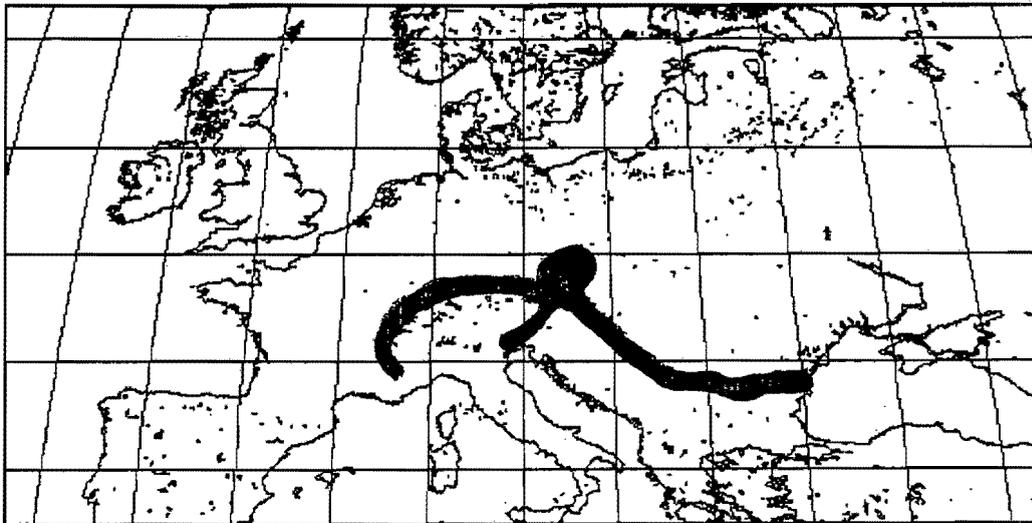


The MARGARETOLOGIST

FEATURE ARTICLE: EUROPEAN GLASS BEADS



A 45.0 by 22.5 degree view of Europe centered on the Bohemian Plateau. The darkened area is the Alpine-Danube region, including the Bohemian Plateau. Thanks to XEROX-Parc.

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A Major Change

The Center for Bead Research has served the bead community for seventeen years in as many ways as we can devise. We are in the midst of a revolution made possible by the global reach of the Internet. Soon after you receive this issue The Bead Site will be accessible to everyone connected to this new medium. The site provides many services, significantly broadening our outreach. Details on page 2.

Through the Eye of a Needle

Yes, this issue is late. I won't apologize, only explain. After returning from Europe I was consumed by preparations for Bead Expo '96. Since then, my time has been devoured by a new project.

The Information Superhighway - the Internet - the World Wide Web, whatever you call it, is amazing and enormous. It is the media of the future and the Center for Bead Research is there.

I am a true believer. We have our own Web site <http://www.thebeadsite.com>. It grows daily and will be a real adventure. It features my first electronic book, **Beads and Where They Have Taken Me**, chat rooms, a game and all sorts of interesting and helpful things to all bead people. There is also **Beadtown**, an exotic place with a library, museum, university, the Center for Research's home and shops for everything beading.

And the *Margaretologist* will change too. Aside from this, our second facelift, this will be the first issue on-line. The electronic version will sport color pictures and possibly more innovations (I had hoped to give you color in this paper issue, but that remains very expensive -- I am working on it.)

If you are on the Internet and would prefer the electronic version to the paper one, please let us know. Also, send me your e-mail address. I am working on an electronic newsletter, *the bEad-mail*. I have no idea where it's going, but it will initially report on The Bead Site's progress and related news.

If you are not on the Internet, don't despair. It is getting easier and cheaper to jump on all the time, revolutionizing our lives in ways we can't even predict. For example, look at the sources for the last two items in this issue.

Calendar

- September '96 Denver *CLW*
 - November '96 Washington D.C. *LW*
 - April-May '97 Indonesia & India Bead and Art Tours *DR*
 - May - July '97 India *CR*
 - October- December '97 Ghana *R*
 - January- February '98 Egypt *CER*
 - Late March '98 Bead Expo, Santa Fe *DLW*
- C = Consulting, D = Directing, E = Excavating, L = Lecture, R = Researching, W = Workshops*

REMEMBER!

- ✓ If the last digits on your mailing address are 9:1, it's time to renew.
- ✓ Notify us of any address change.
- ✓ Each class of membership receives free advertising space and free Bead Identification Certificates.
- ✓ Memberships make wonderful presents.
- ✓ Encourage your Bead Society, shop or institution to support us and all bead research groups.

ERRATA

Margret Carey wins the Margret Carey "Gotcha" Award again (this is getting monotonous -- is she the only careful reader out there?), but not all her "corrections" are accepted on this side of the Atlantic. Carnelian is not derived from *carne* and if it's good enough for Beck, it's good enough for me.

Cover, map - some copies have Hainoi; read Hanoi

- Cover, box - Intial to Initial
- p 3, para 2 - City College, to Institute of Archaeology, University of London
- p 4, para 3 - meter to meters.
- pp. 6 & 7 - amadine to almandine
- p. 7, para 2 - "species to "species"
- p. 7, col. 2, para 2 - read Eratosthenes
- pp. 7 & 9 - Cosmos to Cosmas
- p. 8, cap. 1 - Pelengi to Pelangi
- p. 8, para 9 - hithertofore to hitherto
- p. 8, para 10 - site...have to sites...have
- p. 10, para. 13 - Octangonals to octagonals
- p. 12 para 6 - PP to pp.

The Margret A. Carey "Gotcha" Award:

Spot an error of fact and get three points, a typo and get one. The reader with the most points each issue receives a bead sample card.

European Glass Beads ca. 1000 BC to AD 1500

I doubt the whole history of beads will be revealed in our lifetimes. For over twenty years I have been working toward this goal. Much has been learned, but the work is slow: bead by bead, site by site, culture by culture, period by period. Each of us has limitations of time, resources and opportunities. For a variety of reasons my work has concentrated on the Middle East, South and East Asia, West Africa and North America.

I am struck by the interconnectedness of the bead story. In The Asian Maritime Bead Trade (for the University of Hawai'i Press), I concentrate on the Asian littoral, but this is not the end of the story. Footnotes take the reader from the West African Forest Zone to Mexico's Yucatán Peninsula, not directly across the Atlantic, but the long way around.

Except for more recent "trade beads," I have done little work in Europe. My assumption has been that European beads are well served by European scholars. Europe is now expensive (especially when I recall traveling on \$10 a day and living comfortably in Spain on \$450 a year). Some European languages, including German (I am working on it) and Slavic tongues, had not been in my repertoire, and they are keys to scholarship there.

Nor am I alone. Standard glass histories tend to ignore European products. Haynes [1959:39] concentrates on Egyptian and Roman glass and mentions Europe only briefly in the post-Roman period. Caley [1962:95-104] surveys glass analyses down to 1957, yet could report only on Roman period German glass. Weiss [1971] uses historical information and lists no European glass centers earlier than the Middle Ages. Kurinsky's [1991] summary of glass history pays no attention to

glass or glass beadmaking among the people surveyed herein.

The bead literature reflects this. There has been no major synthesis of European glass beads in any language. Only the Bead Study Trust (London) keeps up with the increasing literature. Guido's [1978] book is important to understanding beads in Britain, but only hints at what happened on the continent. Dublin's [Sherr-Dubin 1987: 64-77] chapter on European beads is perhaps the best English summary, but it is scanty, stressing Viking beads, following the pioneering work of Callmer [1977]. Liu [1992a, 1992b] notes the wealth of European beads, but brings no insights to them. Later, Liu [1995:158-9] hardly mentions European beads because they are rarely looted, not on the antiquities market and therefore not "collectible."

When I was invited to speak in Europe in November-December 1995, I visited several collections and researchers. I was looking for links with the Middle East, which I assumed provided many beads to Europe. But that was not the case.

Here is a summary of what I have learned. Very little is my research; it is drawn from the works of many others (my suspicion that Europe was well served by local scholars was right). This is by no means the last word on this subject, as work on European beads continues apace. However, considering the demographics of *Margaretologist* readers, I believe much of this will be new to you.

A Guide to this Article

As many readers know, I apply a four-fold query to any bead under discussion. I ask: 1.) Where did it come from? 2.) How did it get here? 3.) How was it used? 4.) How was it

disposed? Each of these have many sub-questions. Only when they are all answered do we have the complete story. We do not have enough data to answer all these questions. Here we shall concentrate on the first one: "Where do they come from?"

We are working over a very long period of time and a large land mass, home to a wide variety of cultures. Don't be frustrated if you are not familiar with all the names and places discussed. Keep your eye on the "big picture." I have written this in an "outline style" to make it easier to follow. The time is divided into three periods: 1.) **The pre-Roman phase, roughly 1050 to 50 B.C.**, known as Hallstatt (Late Bronze and Early Iron Age) and La Tené (Late Iron Age). 2.) **The Roman period (ca. 50 B.C. to A.D. 350).** 3.) **The post-Roman or Medieval period, ca. 350 to 1500.** In the first two periods all glassmakers will be considered, since many made beads. In the third, only known beadmakers will be noted. In the Roman period, much of Europe was tied to the traditional glass centers of the Middle East.

THE ORIGINS OF GLASS BEADMAKING

The pioneer bead researcher, Horace C. Beck [1934], wrote a paper that stands as a landmark not only in bead studies, but also in glass history, by examining the seventeen oldest glass objects known to him (pre 1500 B.C.). A few more have been found since, but his original conclusions have not been altered [Harden 1969]. Beck proposed: 1.) There were no glass vessels before 1500 B.C., only beads and similar small objects. 2.) Glassmaking began in Mesopotamia (modern Iraq) or on its borders and, contrary to what was then believed, spread to Egypt later.

After 1500 B.C. glassmaking spread to Egypt and then eastern Mediterranean lands [Harden 1969:46-57]. Several early glass

centers in Egypt and the Levant made beads. Beadmaking continued in this region for millennia and because of its geographical centrality, its beads were exported widely. Roman beads are found in small numbers as far east as Korea, and Early Islamic beads are found from West Africa to the eastern limits of Asia.

Of course, we must always distinguish between glassmaking and glass beadmaking. It was once supposed that beadmaking was a mere offshoot from shops making "more important" vessels, but that idea has been revised. Beadmakers are often specialists. They may or may not make their own glass, but they tend to restrict themselves to beads.

GLASS BEADMAKING IN EUROPE BEFORE ROME

Beads and ornaments have always been important to Europeans. During the last two millennia B.C. trade in locally made and Egyptian faience, gold and bronze ornaments and amber was widespread. Middle Eastern glass beads were imported from an early age, but they soon took second place to locally made beads. In some cases, glass houses were apparently manned by Middle Eastern workers. In other cases, glassmaking seems to have been independently developed.

The first known independent European glass and bead making site is in the northern Italian sub-Alpine region at **Frattesina, Italy**. The composition of the glass (low magnesium and high potassium) strongly indicates local glassmaking, perhaps also taking place nearby in the **Swiss Alps** and **Ireland** by the **tenth or eleventh century B.C.** [Henderson 1988a] Other glass compositions in Europe differing from Mediterranean ones suggest other glass centers at a comparably early age [Henderson 1988b]. Beads were the basic product of these early shops; those of Frattesina were mostly opaque turquoise oblates with zones of white or red [Henderson 1996a].

In the **eighth to sixth centuries** glassmaking has been identified at several places in Europe. **1.) The Alpine region** continued its tradition. **2.)** Glassmaking was introduced around the **northern shore of the Black Sea** in Greek colonies, offshoots of Mediterranean production. **3.) The Marne Valley** of France, east of Paris. **4.) Southern Bohemia and Moravia.** **5.) Slovenia and West Hallstatt** (Austria), where beadmaking is evident at **Stična**, though no shops have been found. **6.) The Black Forest** region of Germany between the Upper Danube and the Rhine.

The period from ca. **725 to 450 B.C.** is known as the **Hallstatt**, after a site in Austria; it marks the introduction of iron into Central Europe. The Hallstatt beadmakers, particularly in Slovenia, produced a wide and attractive group of beads [Wells 1981:105-6], the only ones among these early sites I have examined. The material excavated more than a century ago by the Duchess of Mecklenburg in the Peabody Museum, Harvard, is spectacular. The collection has stratified eye beads, both barrel shaped and triangular, beads with elaborately combed waves, and many other types in a wide variety of colors and usually a well preserved state. Some are from Stična, where many were probably made. When I first examined the collection in 1989, I assumed most beads came from the Middle East. It is now clear that they did not.

The next "chapter" in our story was written by the (Alpine) Celts. Their home was along the northern Alps and the Danube Valley, and they expanded across Europe during the **La Tené (Late Iron Age) Period (ca. 500 to 30 B.C.)**. By the fourth century B.C. they were spread over Spain and Northern Italy and migrating to the British Isles. In another century or so they had added Poland, Ukraine, Romania and Bulgaria to their domains, even attacking Delphi, Greece in 278.

Widely feared for their fighting skills and superb iron weapons, the Celts had added

glassmaking to their industrial skills by about 250 B.C., perhaps learning it in northern Italy. In the century or so before that time, there seems to have been no glassmaking in Central Europe, though it continued in the Black Forest [Venclová 1990:59, 164, 408-8].

Early Celtic glass workshops have been identified in the Middle Danube (southwest Slovakia; **Šmihel, Slovenia** being one known center), **Moravia** and around **Berne, Switzerland** [Venclová 1990:84-5, 164, 414-5]. Their principal products were characteristic bangles, and they produced a distinctive annular, torus or donut-shaped bead, best called a "ring bead," as it is in the German literature (*ringperlen*).

In the **second and first centuries B.C.** Central Europe reached a peak of glass production. Celtic oppida ("oppida" is Latin for "town," and was applied to the fortified Celtic cities the Romans encountered) and other sites worked glass. These included **Stredonice oppida, Bohemia; Staré Hradisko oppida, Moravia; Manching oppida, Germany; perhaps Dürnbürg, Austria; Breisach-Hechstetten, Germany;** non-specified site(s) in the **Netherlands; Lacost in southwest France; the mid-Rhine and Black Forest region, Mandeure, France,** just west of the Jura mountains, neighboring **Meare and Glastonbury, England,** and several places in **Scotland** such as the **Colben Sands** [Venclová 1990:143-53, 164, 414-5; Henderson 1981; Guido 1978:32-7]. Of these, Stredonice, Bohemia, and Meare, England, made beads. Meare, in fact, has bead types named after it [Guido 1978: 79-84], though how the spiral decorations were added remains an issue [Lierke, Birkhill and Molnar 1996; Henderson 1996b].

In sum, during the Hallstatt and La Tené periods, much of Europe was furnished with glass beads made locally, with concentrations in Hallstatt and Celtic sites.

I think it is striking that so many of the early glassmaking sites in Europe are located in the very areas known in recent times as important glass or beadmaking locations. These include Bohemia and Moravia, the Netherlands, the Black Forest and the Jura Mountain area. Evidence for these industries surviving intact from this remote period is not available. It may have been a matter of re-establishing glassmaking where there are suitable raw materials, though more investigation may change that idea.

THE ROMAN PERIOD

The Roman Empire occupies a central place in Western thought. This is not the forum to discuss either its contributions to humanity or the cruelty of some of its policies. The assumption that nearly any interesting old bead is Roman [see "Middle Eastern Glass Beads" 1994 7(1):11] is widespread. Until recently, it was standard practice in the bead literature to call any old bead "Roman," unless it was thought to be even older, in which case it was labeled "Phoenician."

Roman expansion in Europe was at the expense of the Celts. Despite Celtic ferocity and courage, Rome conquered much of their world. Celtic beadmaking declined. The glass workshops of the Mediterranean (**Alexandria and Fustat [Old Cairo] Egypt; Tyre, Lebanon and the Greek island of Rhodes**) supplied the great bulk of glass products, including beads to all Europe, whether within or without the Roman frontier. The Romans spread glassworking, particularly along the Rhine, an old glassmaking area, now using Roman techniques and recipes in newly established glasshouses, most notably at **Köln (Cologne, Germany)**. Pliny (died 79 A.D.) [Eichholz 1962:153] reported on glassmaking in **Italy, Spain and Gaul**, but did not mention Germany nor beadmaking.

By the **third century A.D.** two beadmaking sites have been identified within **Roman**

Gaul. Mosaic beads were made in the **Argonne** region of **France**, near the Belgium border. **Trier (Trèves), Germany**, has been called a beadmaker, but there are doubts about that [Tempelmann-Maczyńska 1985: 133; Thompsen 1996:22].

In the province of **Dacia**, at **Tibiscum, Romania**, a glass house has recently been excavated by Doina Benea and clear traces of beadmaking have been found [Dekówna 1995; personal comm.].

Contemporary glassworking sites outside of Roman control include: **1.) Sieldlung; Belarus.** **2.) The Tschernjackow (or Cernjacov or any number of other transliterations) culture in Ukraine.** **3.) On the Baltic Islands of Fuen and Gotland.** **4.) and at Komarov on the Dniester**, the latter with no evidence of beadmaking [Tempelmann-Maczyńska 1985: 133-4; Bezborodov and Abdulrazakov 1964: 64-5]. **5.) Material from Klein Köris and Mühlberg**, both in the former East Germany during the **third to fourth centuries** strongly suggest beadmaking [Thompsen 1996:20-1].

In sum, during the centuries when a unified Roman empire dominated Europe, glass beads were supplied mostly from the Middle Eastern domains of the Empire. The Romans did not establish much beadmaking within Europe. Outside the borders there was beadmaking; unfortunately, there is little evidence for the types of beads made.

POST-ROMAN EUROPEAN GLASS BEADMAKING

The Roman Empire did not fall as much as it melted away. After the death of Constantine (A.D. 337), it was split into two parts. The East (Byzantium) survived for a thousand years. The West was buffeted by barbarian Germanic peoples (some sent west by Byzantium), some invited into the Empire and others invading it. This great movement, the *Völkerwanderung*, resulted by the **sixth century** in Britain being in Angles and Saxon

hands, Gaul ruled by the Franks, Spain by the Visigoths, North Africa by the Vandals and Italy by the Ostogoths, soon to be replaced by the Lombards. The Slavs moved out from their forests and spread along the eastern edge of the old Empire. Asiatic nomads -- the Huns, Bulgars, Avars and Magyars -- were driven into Europe most likely by population pressures. There were constant outpourings of northerners, now called Goths, now Vikings, now Norsemen.

In some parts of Europe, such as Spain under the Visigoths, glass beads were imported from the Middle East and the Frankish kingdom, and apparently none were made locally [Mańczyńska 1991]. However, several post-Roman kingdoms adopted or borrowed bead-making. Enough evidence has come to light to describe some of their industries. At least four had their own beadmaking, and I shall examine each in turn.

The Vikings

There was beadmaking in Scandinavia from late Roman times. **Lundeborg on Fuen (Fyn) island, Denmark**, was a key trading post from ca. 200 to 550 A.D. There is evidence for beadmaking there in translucent blue and green and various opaque glasses [Thompson 1996]. **Valhager on Gotland** seems to have evidence of glassworking in the fifth century. Most important Scandinavian centers made glass beads from about the fifth to the eleventh centuries, beginning with **Helgö** near Stockholm, then **Paviken (Gotland)**; **Ribe (Denmark)**; **Hedeby (Germany)**, just south of the Danish-German border; **Birka (Sweden)**; and **Kaupang (Norway)** [Lundström 1976; 1978].

Outside Scandinavia, some Viking settlements made beads. **Staraja Ladoga, Russia**, from about the eighth to the early eleventh century used imported raw materials, based on Middle Eastern recipes. Its products included black and blue eye beads, segmented

beads and cut drawn beads; it apparently catered to the Finnish (then very barbaric) trade [L'Vova 1970; Rajabinin and Galibin 1996]. **Wollin (Wolin), Poland**, at the mouth of the Oder with connections to the Baltic Sea ca. 950-1050 A.D. was a Viking period bead-maker [Dekówna 1973:157]. Several sites along the Irish Sea (**Lagore Crannog, Garranes, Brough of Birsay, Dina Pows and the Mote of Mark**) were beadmakers [Lundström 1976:17]. There was ringmaking with a lime-potassium glass at the Anglo-Scandinavian site of **Lincoln, England** [Graham-Campbell and Kydd 1980:136].

Viking territory was very prolific in bead-making. Of all these sites, only Ribe [Bencard *et al.* 1979, Bencard 1983, Jensen 1991] and Hedeby made beads of much sophistication, Ribe even making mosaic beads. Both sites have wonderful Viking Museums, with impressive bead displays.

The Frankish Kingdom

During the **Merovingian** dynasty (418-754) the only known beadmaking workplace is at **Maastricht, the Netherlands**, from the late 5th to the early 6th centuries [Sablerolles, Henderson and Dijkman n.d.]. Although there is a variety of Merovingian beads, opaque red with yellow trailed decorations are most common. They were both round and faceted; pentagonal tubes being a distinguishing type [Koch 1977].

Callmer [1996] has called attention to the influx of **Middle Eastern** beads into the Frankish kingdom during the **Carolingian** dynasty (and Russia as well) during the period 750 to 850. The impetus for the trade came from the growing outreach of the newly established Islamic Empire, and its decrease was probably related to internal matters.

The Avars

The powerful but short-lived Avar kingdom, defeated by Charlemagne (founder of the

Frankish Carolingian dynasty) had its own particular beads, known as "melon-seed beads." They are black (sometimes blue or green) flattened and oval shaped, apparently made on bronze tubes, some of which remain in the beads. It may well be that they were made in the **eighth century** at **Nitra** the old capital, near Bratislavia, **Slovakia** [Hetteš 1974:8-9; Chropovský 1978: pl. 30, pp. 56-7]. The source of the unusual manufacturing method has not been identified; it may have been a local invention.

East Central Europe

South of Scandinavia in territory occupied by the Slavs, but often controlled by the Vikings, were other beadmaking sites. **Szczecin, Poland**, on the Baltic was a glassmaker, and beads might have been one of its products in the **early ninth century** [Dekówna 1973].

Sometime toward the **end of the tenth century**, a new glass recipe that called for potassium and lead was introduced to Baltic and early Russian towns. Three glassmaking shops have been excavated at **Kiev, Ukraine**, spanning the **tenth to the twelfth centuries**; beads were made by at least two of them, and lead glass was one of the products made [Besborodov and Zadneprovsky 1965]. A number of other Viking-Slavic towns, including **Novgorod, Russia**, may also have been glassmakers at about this time [Ibid.]; Novgorod was an important amber processor [Yanine 1969:52].

Beads, mostly small opaque yellow annulars (82%; the rest were green), were made at Germanic **Riga, Latvia** at the **end of the thirteenth century** [Mugurēvich 1996].

A Few Others

In the **ninth to ten centuries** **Glastonbury, England** continued making beads, and, while not well studied, **Cordel, France** near Tréves (Trier, Germany), and **Macquenoise, Bel-**

gium were likely beadmakers as well [Dekówna 1973:152].

DISCUSSION

Now that we have gathered the evidence for European glass beadmaking from ca. 1000 B.C. to A.D. 1500 we can apply it to the questions we ask of beads. The first, "Where do they come from?" has been answered only in part. So far, this survey, only tells us where beads were made. Two other important sub-questions can now be addressed: 1.) **Who were the beadmakers?** and 2.) **Who made the glass and where?**

Who Were the Beadmakers?

We know beadmakers move around a lot. We also know that there are several ways to learn to make beads. There are cases of bead industries that are self-taught. Someone may go abroad and learn the craft or a foreigner may bring it in. It may be handed down through the family or apprenticeship or it may last only a generation or so. The craft may pass from village to village, diffusing over a wide area and across ethnic boundaries.

The origin of the first European glassmakers at Frattesina, Italy, is unknown. It is likely they came from the Middle East and altered their formula (the differences are in the alkali and lime sources). But, from there it is not much of a stretch to see a European continuation through Hallstatt and La Tené times. Some beads (stratified eyes and knobbed beads) were probably inspired by Phoenician models, but were locally made. The Celts added glassworking to their industrial skills. During this long period, only the Greek-introduced glassworks along the northern Black Sea were really intrusive. They may have influenced cultures to their north, including Scandinavia.

In Roman times, glassmaking and glass products were imported into much of Europe. There were independent glassworks along the

edges of the Empire, and others emerged as the Empire collapsed.

The players in the post-Roman period are a mixed lot. The Vikings learned to make beads in Late Roman times, but the sudden sophistication of beads at Ribe and Hedeby and the beads at Staraja Ladoga suggest at least some itinerant beadmakers from the Middle East.

The Franks occupied old beadmaking territory and in Merovingian times satisfied the local market. In Carolingian times, beadmaking declined because of the availability of Middle Eastern beads.

The Avars would have been in touch with several beadmakers, and seem to have worked out an innovative way to make beads themselves.

Slavic beadmakers could have been allied with either the Vikings or Byzantium/the Islamic World, as their territory connected these two centers.

Many post-Roman beadmaking sites now documented did not make beads for very long, only a generation or two, if not less. This suggests the beadmakers were itinerant. This is no surprise, as the movements of beadmakers either from a bad situation or toward a place that welcomed them is historically common [Francis 1994].

In sum, there was much variation and each situation must be studied in detail by itself.

The Origin of the Glass

Glass beadmakers are not always glassmakers. Where did the glass come from? The likely sources are: 1.) The glass was made by the beadmakers, either from a.) local or b.) imported raw materials. 2.) Scrap glass was gathered or bought and recycled into beads. 3.) Prepared glass was imported from a glassmaker. All of these sources and combinations thereof were used by European beadmakers at different times.

1.) Beadmakers who apparently a.) made their own glass include the early Alpine shops and Frattesina, the Black Forest region, possibly the Bohemia - Moravia - Slovakia - Hallstatt complex, Meare and related sites in England and Scotland, Roman established glassworks, possibly the Merovingian workshop at Maastricht and the Baltic and Early Russian sites from the tenth century making lead glass. b.) At Staraja Ladoga raw materials were imported to make the glass locally.

2.) Among those who relied heavily on remelting glass scrap were the Celts, the non-Roman glassworkers of Roman times and the Vikings.

3.) The Vikings also added prepared glass in the form of tesserae. Tesserae are small glass cubes produced for mosaics in churches. The only place known to make these during early Viking times was **Torcello**, an island in the Lagoon of Venice. From the **sixth to the eighth century** glass was made there, both for tableware and mosaics for the Torcello cathedral [Gasparetto 1967; Tabaczyńska 1968]. Torcello was slowly eclipsed by **Rialto** (the heart of modern Venice), where glassmaking and mosaic production continued until moved to **Murano** in 1291.

These mosaic cubes were brightly colored, small and portable. The Viking beadmakers used them not for basic raw glass, but to color glass they melted from glass scrap. The work of **Theophilus** Presbyter (probably Roger of Helmarschhausen), written around 1110-40 is the only decent Medieval work on glass. He mentions, "Different kinds of glass, namely white, black, green, yellow, blue, red, and purple, are found in mosaic work used in ancient pagan buildings." [Hawthorne and Smith 1979:59] and "They [the Byzantines] also make glass sheets in the same way that windows are made, out of the clear white glass, a finger thick. They split them with a hot iron into tiny square pieces..." [Ibid.:60]. While Theophilus was less than specific, he suggests

the use of these tesserae as coloring materials. He said the **French** were especially good at gathering scrap glass to color [Ibid.:59-60].

The Trade in the Beads

There seems to have been little external trade in most of these beads. They are generally found in rather restricted areas, serving local, regional or neighboring markets (Merovingian beads to Visigoth Spain). In fact, the distinctive beads in each area first lead some investigators to conclude there was a possibility of local manufacture.

Of the industries surveyed above, only Straja Ladoga was set up for trade outside the region. The assumption is that the "cheap" segmented and "cut" beads were made to trade with the (then) barbarous Finns.

Viking beads are the only ones known traded outwardly. The Vikings were great traders and explorers. They literally surrounded Europe by using the Russian river-land routes to reach the Black Sea and sailed around West Europe to establish themselves (as Norsemen) throughout the Mediterranean Sea. They also settled Iceland, Greenland and Vinland, where a glass bead has been recovered. Only Slavic and Viking bead assemblages have very many Middle Eastern beads. I now wonder if the two most important beads in Borneo -- the twisted ring eye design **Luket Sekala** and the chequer mosaic **Luket Kong Ba** -- might be Viking, rather than Venetian and Early Islamic as I had once tentatively assumed [Francis 1989:14-5]. The Vikings need not have taken them there; Muslim traders could have been intermediaries. Such a remote origin might mean only one string was imported on one occasion, accounting for their great scarcity (it is said there are only twenty to forty **Luket Sekala** on Borneo).

Use and Disposal

The apparent principal use for these beads was human decoration. Several may have had

amuletic uses, especially the eye beads. Others, such as the unparalleled Celtic ring beads (and bangles), distinctive Merovingian colors or the unique Avar melon seed beads, may have been regarded as ethnic or national markers.

How ancient people regarded beads is much more problematical than how they wore them. Most were worn in single or multiple strands around the neck, but Viking women developed an interesting style. Small, monochrome beads were worn around the neck, while larger polychrome beads were put on a string suspended between two hollow circular bronze brooches pinned to their woolen tunics high on the chest near the shoulder.

Much of what we know of these beads comes from cemeteries. Disposal with the dead is a common way for beads to leave circulation. There are also several cases in Europe in which older beads were dug out of tombs of earlier people or otherwise scavenged to be reused.

SUMMARY

Glass beads were invented in the Middle East, and the beads of this region are scattered far and wide through the Eastern Hemisphere. Despite geographic proximity, only during the Roman dispensation and a few other cases (the Slavs and Vikings and the Carolingian period) have Middle Eastern beads been important in Europe. Europe has made most of its own glass beads since about 1000 B.C.

While it is premature to discuss glassmaking schools or beadmaking traditions, a geographic and chronological view of the sites we have discussed indicate two important glass beadmaking regions in Europe.

1.) **The Alps and Danube Valley.** European beadmaking began in the southern Alps and continued along the periphery of the mountains and along the river valley until Roman times. This is the Celtic homeland, and they spread glass technology far. It may

also be argued that from here the two great modern beadmaking traditions arose. The products made suggest that Torcello - Venice - Murano glassmakers may have come from here rather than the Middle East. It is known that glassmakers on the adjacent Bohemian plateau came from the Danube basin.

In Roman times, the Celts were defeated. There were a few Roman beadmakes, but most beads came from the Middle East. However, east of the Roman frontier lay an important beadmaking area:

2.) **The Baltic to the Black Sea.** Glassmakers were set up on the northern shore of the Black Sea by Greeks in the sixth century B.C. While it is 875 air miles (1400 km) between the seas, the land is flat and fertile and served by long, navigable rivers, especially the Dvina flowing north and the Dnieper and Don flowing south. On the shores of these seas (Scandinavia is on the Baltic) and along these rivers, nearly all non-Roman and post-Roman glass beadmakes are found.

There are a few other beadmaking centers not connected to these: France (Gaul, the Frankish kingdom) and Britain (Ireland, England and Scotland), though in some cases the Celtic connection is clear. How they fit into the general picture and how homogeneous these two beadmaking regions were will be a goal of further research.

I went to Europe expecting to find many parallels with Middle Eastern beads, but returned with a different story. It will continue to grow, because new information is being exchanged at an accelerating pace. In time, a continent-wide picture will emerge of how glassmakers and beadmakes interacted.

I hope this paper makes a small contribution toward that goal, if only by pointing out the possibilities of such a study, focusing attention on it and providing an abbreviated reading list. And, again, many, many thanks to all the people who were so kind to me during this remarkable trip.

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BEAD FAKE ALERT

In 1992 [see 5(2):1] I issued two Bead Identification Certificates for what were sold as "very old Venetian trade beads." "French Ambassadors" and "Skull and Crossbones." My investigations showed they were made of lead glass with distinctive colors, had been etched in acid to give them a matte surface and had traces of a light pink perforation deposit. I judged them as modern, perhaps European or American. On the basis of the Certificates, the buyers received their payment back from the dealers.

The next year [6(1):10] I reported that I was told by a London dealer that another London dealer had found these beads as "old

stock" in Jablonec nad Nisou, made between the two World Wars.

I am generally skeptical about "old stock" beads, and here is an example of why. Now I have the story from the source:

These beads (and a couple of other kinds, including the misnamed "Ghost Bead") are Czech made, but very recent. They were commissioned by a German firm that retails them for around \$13 each. They are relatively expensive because of the cost of making such beads these days. This information is from the people who ordered and sell (still have in stock) these beads. They were horrified to hear of their prices and the apparent intent to commit fraud with them in the United States.

TECALI AGAIN

The identification in the ancient Mexican painted manuscript, *Codex Nuttall*, of Tecali village, the source of tecali stone (alabaster) has been verified [see 1994 7(2):10-1]. Tecali means "stone house;" the stone is named after the village.

The stone was an important decorative material in pre- and post-conquest times. Today the industry makes knickknacks for tourists, including many beads. The village can be traced back to pre-contact times in Spanish histories, but how long has it been there?

As discussed in 1994, the glyph in the *Codex Nuttall* was translated in Nahuatl, the language of the Aztecs. But the codex is most likely a Mixtec work. The Mixteca equivalent for the glyph is *huahiyuu*, a combination of *huahi* (house) and *yuu* (stone) [Smith 1973]. Thus, it reads the same name in both languages, relatively uncommon for place names. There seems to be no other place with that name.

Hence, the Mixtec ruler-hero named 8-Deer Tiger Claw, conquered or won over Tecali in the year 6-flint or A.D. 1044 (as I calculate

it). Tecali was at the northern extent of the "Mixteca-Puebla" region, which Castillo-Tejero [1994:176] shows included Tepeaca, the closest "big city" to Tecali and the ancient regional "capital."

Tecali was also important enough to have had a pyramid. *Mapa de Cuauhtinchan No. 2* and *No. 4* both have "Tecalli" written in where the village is. *Mapa No. 2* was declared an historical monument in 1963. "Tecalli" is written under two seated men at a house in front of a pyramid [Glass 1964].

The *Florentine Codex*, by Bernardino de Sahagún in the late 1500s, described Teccalli as two court rooms in the palace of the Aztec Emperor in Tenochtitlan (México). In one, judges and noblemen heard complaints from the common people daily and in the other princes and lords were tried. The rooms were important enough to have a guard posted all night [Anderson and Dibble 1979:42, 54-5, 58]. Teccalco (taken to be a synonym [Ibid.:42, n.5]) was also described: "There was casting [of men] into the fire there; they cast captives into the fire there. This also was done at the time of Teotl*eco, also yearly. And when there had been the casting into the fire, thereupon the offering priests came down there. Thereupon [the ceremony called] amatlauitzoa was performed [Anderson and Dibble 1981:182]. However, the Teccalli and Teccalco may not have been identical; their functions seem quite different.

Teccalli is simply "stone house," and this may have been just a stone building in the palace complex. But the whole palace was built of stone. I wonder if the rooms were named after tecali stone decorating the walls as they do many public buildings in modern Mexico City.

The interest in these stone beads have caused me to trace the history of this obscure Mexican village back more than 1000 years. I wonder what is to be learned next.

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Interestingly, "belt" was defined, but not bugle. In any case, it is an early reference to beadwork. Dark green or black bugles were made by the first modern English beadmaker, operating by 1579, the date of Spenser's work [Thorpe 1935:119-20]. Both poets were likely singing about local products, quite new in Spenser's day.

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**BEADWORK IN EUROPE:
THE EARLIEST
REFERENCE?**

While working on the etymology of words associated with seed beads, "bugle" came up. I have long quoted the passage in Shakespeare's *As You Like It*, first produced in 1599 (III, v, 46-8):

**'Tis not your inky brows, your black silk hair
Your bugle eyeballs nor your cheeks of cream
That can entame my spirits to your worship**

Wiener (1922:247-8) noted another early reference to "bugle," when discussing its French origin (inexplicably in his chapter on Aggrey beads). He said it was in Edmund Spenser's *The Shephaerdes Calender*, published in 1579, not so easily found.

But it is on the Internet (thanks to Richard Bear), and it didn't take me too long to find the passage, as it is in *Febuaire*. Cuddie says:

**But Phyllis is mine for many days
I wonne her with a girdle of gilt,
Embossed with buegle around the belt.**

**HIDDEN BEAD WEB SITES
NUMBER ONE**
(Internet talk; send us your e-mail address)

I call these "hidden" because they are not brought up on browsers asking for "beads," or at least not easily. Here is the first one:

No. 1: Go to the Canadian Museum of Civilization. You must register (free and confidential). In the elevator (this is a virtual museum) go to Level 1 – the Lobby. Go to the Archaeology Hall and "Mothers of Time." The exhibit features 7 figurines recovered by Jullien at Balzi Rossi (Grimaldi Cave) on the French/Italian border between 1883-95. They have never been published before.

At least four of the 20,000 year old figurines are stone pendants. A two headed lady and a woman and animal intertwined are examples. Hair styles or hats are shown. Stunning art never seen before. Don't miss it; the Museum has other beads, too.

BEAD DETECTIVES

This is another call for bead detectives. There is (yet another) fraud being perpetrated on the bead world. Let me know if you would like to help out.