

# BEADS

Journal of the Society of  
Bead Researchers



1993 Vol. 5

*Gold-Glass Bead*



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Printed in Canada: HB TechnoLith, Ottawa, Ontario

Layout and Production: Suzanne H. Rochette  
Cover Layout: Rod Won

**Cover:** *Gold-Glass:* Unusually well-preserved plaque-shaped gold-glass bead 2.4 cm long showing Harpocrates with finger on mouth and "horn of plenty" at the side; said to come from Egypt (private collection, Jerusalem).

**Back Cover:** *Mauritania:* An eclectic mix of old glass beads and Mauritanian powdered-glass Kiffa beads (photo by H. Oppen).



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KARLIS KARKLINS, editor

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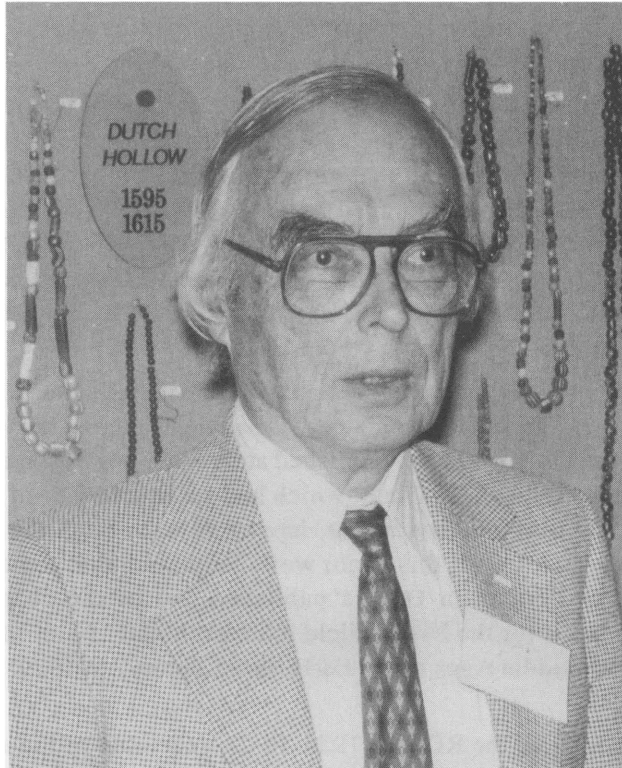
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**IN MEMORIAM  
KENNETH E. KIDD, 1906-1994**



Kenneth E. Kidd at the 1982 Glass Trade Bead Conference in Rochester, N.Y. (courtesy of the Rochester Museum and Science Center).

Pioneer bead researcher Kenneth Earl Kidd passed away peacefully in Peterborough, Ontario, on 26 February 1994, at the age of 87. He now rests with his ancestors in Cookstown, a small rural farm community in central Ontario.

Born 21 July 1906, in Barrie, Ontario, Ken grew up in Cookstown and went to public school there. He attended high school in Barrie, then studied English and History at Victoria College, University of Toronto, where he received his B.A. in 1931. A teaching certificate from the Ontario College of Education followed in 1932. He subsequently taught at the Brantford Collegiate and the Mohawk Institute in Brantford, Ontario.

In 1935, Ken joined the staff of the Department of Ethnology at the Royal Ontario Museum (ROM) in Toronto. He continued his academic work the following year, conducting research among the Blackfoot Indians of Alberta for his thesis. He received an M.A. in Anthropology and History from the University of Toronto in

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1937. Taking a leave of absence from the ROM, Ken participated in the University of New Mexico's summer field school at Chaco Canyon, his first taste of archaeology. He subsequently studied anthropology at the University of Chicago where he met his future wife, Martha Ann Maurer. He returned to the ROM in 1940, and married Martha three years later.

Ken undertook a ground-breaking project for the ROM in 1941: the archaeological investigation of Sainte-Marie I, a fortified French Jesuit mission site occupied from 1639 to 1649, near what is now Midland, Ontario. A first for Canada, this excavation pioneered field techniques and methodology in historical archaeology. Published in 1949, the resulting monograph, *The Excavation of Ste. Marie I*, remains one of the most comprehensive monographs on historical archaeology in Canada.

Ken's work in historical archaeology continued in 1947-1948, at the Ossossané Ossuary in Tiny Township, an important 17th-century Huron site which contained a large quantity of glass beads. Faced with the analysis of the recovered grave goods, Ken quickly found that very little had been written on European trade goods of the 16th to 19th centuries. Thus, in 1951, encouraged by Dr. Harcourt Brown, he successfully applied for a Guggenheim Fellowship which enabled him and Martha to begin what was to become their life-long research into North American trade goods, especially glass beads. In 1951 and 1952, they visited various institutions and private collections in the Northeast gathering relevant information. In 1956, they headed for Europe, conducting research at museums and archives in a number of key countries.

Beads had come to dominate the study by this time and Ken produced a substantial manuscript on "Glass Trade Beads in the Northeast: Their Technology, History, Classification and Archaeological Utility" in 1957. This was a truly pioneering work which, had it been published at the time, would have benefitted bead researchers immensely. As it was, The Corning Museum of Glass, which had sponsored part of the research, decided not to publish the volume. It then sat for a while, drying out, having gone through the major flood that inundated Corning, N.Y., in 1972. Realizing the value of this major work, but noting that some of the material was already dated, the National Historic Sites Service in Ottawa published two of the chapters in modified form: "A Classification System for Glass Beads for the Use of Field Archaeologists" (with Martha as co-author) in 1970, and "Glass Bead-Making from the Middle Ages to the Early 19th Century" in 1979. Both are now classics in the field.

Ken became Curator of Ethnology at the ROM in 1954. In the years that followed, he continued researching European trade goods, as well as overseeing many archaeological excavations and museum exhibitions. In addition, he also pioneered underwater archaeology in Canada, stimulated research on rock art of the Canadian Shield and initiated the ROM's Mayan archaeology program in Belize.

In 1964, Ken left the ROM to found and become chairman of the Department of Anthropology at Trent University in Peterborough, Ontario. He subsequently set up the Indian-Eskimo Studies Program at the university which is now the Department of Native Studies. During his term at Trent, Ken concentrated on historical archaeology and his course on that subject was another first for Canada. Although he "retired" from full-time teaching in 1973, he continued his involvement with students maintaining an office, teaching part-time and encouraging Native students to pursue academic careers with an emphasis on history and Native studies.

During his years at Trent University, Ken maintained a keen interest in historical trade goods studies and continued to publish. In 1985, he donated his extensive glass bead collection to Sainte-Marie among the Hurons in Midland with the hope that a repository of glass beads could be established there to further work on the subject.

In addition to his other activities, Ken was active in various archaeological organizations. He helped found the Ontario Archaeological Society in 1950, and was elected vice president of the Society for American Archaeology in 1957. He also served on the board of directors of the Society for Historical Archaeology from 1973 to 1975. He was an honorary life member of the Ontario Archaeological Society and the Society for American Archaeology, as well as the Society of Bead Researchers.

Ken's many achievements have been honored by numerous organizations and institutions. In 1970, he received the Cornplanter Medal from the Cayuga Museum of History and Art for his contributions to Native



studies, the first Canadian recipient. Both he and Martha were honored at the 1982 Glass Trade Bead Conference in Rochester for their pioneering research contributions over the years. This was followed in 1985 by the prestigious J.C. Harrington Medal in Historical Archaeology from the Society for Historical Archaeology. He is also a recipient of the Trent University Eminent Service Award and, in 1990, Ken and Martha were both awarded the degree of Doctor of Laws *Honoris Causa* by the university. In May of 1993, the Governor General of Canada presented Ken with the Commemorative Medal for the 125th Anniversary of the Confederation of Canada.

Ken is survived by his wife Martha and a circle of close friends and relatives. He will be missed as a leader and innovator in the field of historical archaeology in Canada. Just one of his many contributions in that field is the classification system for glass beads, a work still popular and in use today. In fact, it has become so entrenched among researchers in eastern North America that it has already been reprinted twice: first as an appendix to the "Proceedings of the 1982 Glass Trade Bead Conference" in 1983, and subsequently in part in Gary Fogelman's "Glass Trade Beads in the Northeast" in 1991.

Kenneth Kidd helped and inspired many people during his lengthy and illustrious career, and his accomplishments are surpassed by few. His high standards are something we should all strive to match. Let us all raise a glass and wish him a fond farewell.

Jamie Hunter and Karlis Karklins

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(Ed. note: The above bibliography lists all of Kenneth Kidd's published works but only those of his manuscript reports and conference papers that deal with beads. A full bibliography will be published in Vol. 29, No. 1 [1995] of *Historical Archaeology*).

# GOLD-GLASS BEADS: A REVIEW OF THE EVIDENCE

Maud Spaer

*The study of gold-glass beads was given a considerable boost in the 1970s by Weinberg's report on their manufacture in Hellenistic Rhodes and by Alekseeva's and Boon's studies on finds from southern Russia and Britain, respectively. Nothing comparable has been published in the intervening years, but scattered new information has appeared. This paper aims to survey and review the available data on manufacturing technique, style, provenience and chronology. An attempt is also made to fit gold-glass beads into the general framework of glass history. The main focus is on the finds of the Mediterranean and related regions in pre-Islamic times. Note is taken of the continuation of the use of gold-glass beads in Medieval Europe. Conclusions drawn are usually only tentative — if not hypothetical — as sufficiently well-documented source material is scarce.*

## INTRODUCTION

"Gold-glass" is the generic term commonly used for any bead composed of two layers of glass with metal foil between them serving as the principal ornamentation. Other terms such as "gilt-glass," "sandwich gold-glass" and "gold-in-glass" are synonymous. Early gold-glass beads were decorated with gold foil, and the various terms alluding to gold came to be used for this class as a whole, irrespective of the fact that with the passage of time, silver and various substitutes were employed as well (the term "silver-glass" is used whenever silver-colored varieties are specifically referred to). Gold-glass beads obviously copied beads of precious metals and it has been suggested that their popularity in Egypt in the Roman period led to a reduced use of gold and silver beads proper (Shiah 1944:407).

## GOLD-GLASS BEADS IN GLASS HISTORY

Basing themselves on studies made already in the 19th century, early glass historians, such as Kisa (1908:128) and Eisen (1927:8-9, 44, 194), reported on gold-glass beads, regarding them as part of the story of glass. With time, the glass historians concentrated more on vessels, and the study of gold-glass beads was largely left either to the often cursory interest of various excavators or to a few archaeologists with a special interest in beads, foremost among them Boon (1966, 1977) and Alekseeva (1978:27-32). Jewelry historians, irrespective of specialization, have primarily focussed on precious metals and, in no instance, taken an in-depth interest in glass beads.

Most kinds of ornamentation used on glass beads, such as eyes, trails and speckles, as well as molded, tooled and cut patterns, have known precursors in the second millennium B.C., but, to our present knowledge, gold-glass does not. Colorless translucent glass was known in the second millennium, as was gold and glass in combination, including glass beads covered with gold foil. However, at that time transparent stone — rather than glass, a new material, relatively speaking — was still an important medium employed to protect and enhance delicate ornamentation. A pair of elaborate gold earrings from the 14th-century-B.C. tomb of Tutankhamun are richly decorated with colored glass. However, whether the ear-stud covers, with a portrait of the Pharaoh painted on the interior surface of the frontal ones, are of quartz or glass remains uncertain. A recent British Museum catalogue of Egyptian jewelry describes the covers as being quartz (Andrews 1990:111-112, no. 92). An earlier study by Mavis



Bimson (1974) of the British Museum research laboratory identifies them as glass!

Some rock crystal ornaments with decorative gold-leaf inlay are rather close in concept to the gold-glass beads. These include specimens found in 9th- to 7th-century-B.C. contexts in Euboea, an island off the east coast of Greece, and Cyprus, and are supposedly of Phoenician origin (Higgins 1980:223, Pl. 171, no. 5.16, Pl. 186, no. 31.19, Pl. 234, e,f). It is also likely, as suggested by Barag (1990), that in some instances glass was used as a cover for gold or any other delicate ornamentation already in the 9th to 5th centuries B.C. (primarily on some of the Phoenician ivories and on Phidias' statues at Olympia). From the 4th century B.C. there are several well-documented finds of glass placed over ornamental metal. The royal tomb at Vergina in northern Greece, presumed final resting place of Philip II, father of Alexander the Great, contained examples of glass placed over patterned gold inlaid in wooden furniture and over plain gold and silver inlaid in a ceremonial shield (Andronicos 1984:123-124, 137, Figs. 75, 140). A number of finger rings found at various sites in the Greek colonies have bezels with patterned gold foil set between two layers of glass (Williams and Ogden 1994:nos. 108, 159-160).

As yet no gold-glass beads — or gold-glass vessels (bowls with a cut-out pattern of gold foil between two layers of colorless glass) — have been dated prior to the 3rd century B.C. (Harden 1968; Oliver 1969). Some written sources have been interpreted as stating that gold-glass vessels were carried in a procession of Ptolemy II Philadelphus in Alexandria in 274 B.C. (Harden 1968:41). Shiah (1944:408), when discussing gold-glass beads from Egypt, claimed that the earliest dated examples known were found with coins of the same Ptolemy. However, the bead strand referred to by Shiah (Bd. 577, now UC.40563, at the Petrie Museum, London) includes no gold-glass beads proper, only two glass beads covered with gold foil. Numerous gold-glass beads, as well as some gold-glass vessel fragments, were unearthed at Rhodes in ca. late 3rd-century-B.C. contexts (Weinberg 1971:147-148, Figs. 1-2, Pl. 82a). Although most new glass-vessel techniques have forerunners among beads and other minor objects of glass, it is not certain in this case which came first: gold-glass vessels or gold-glass beads.

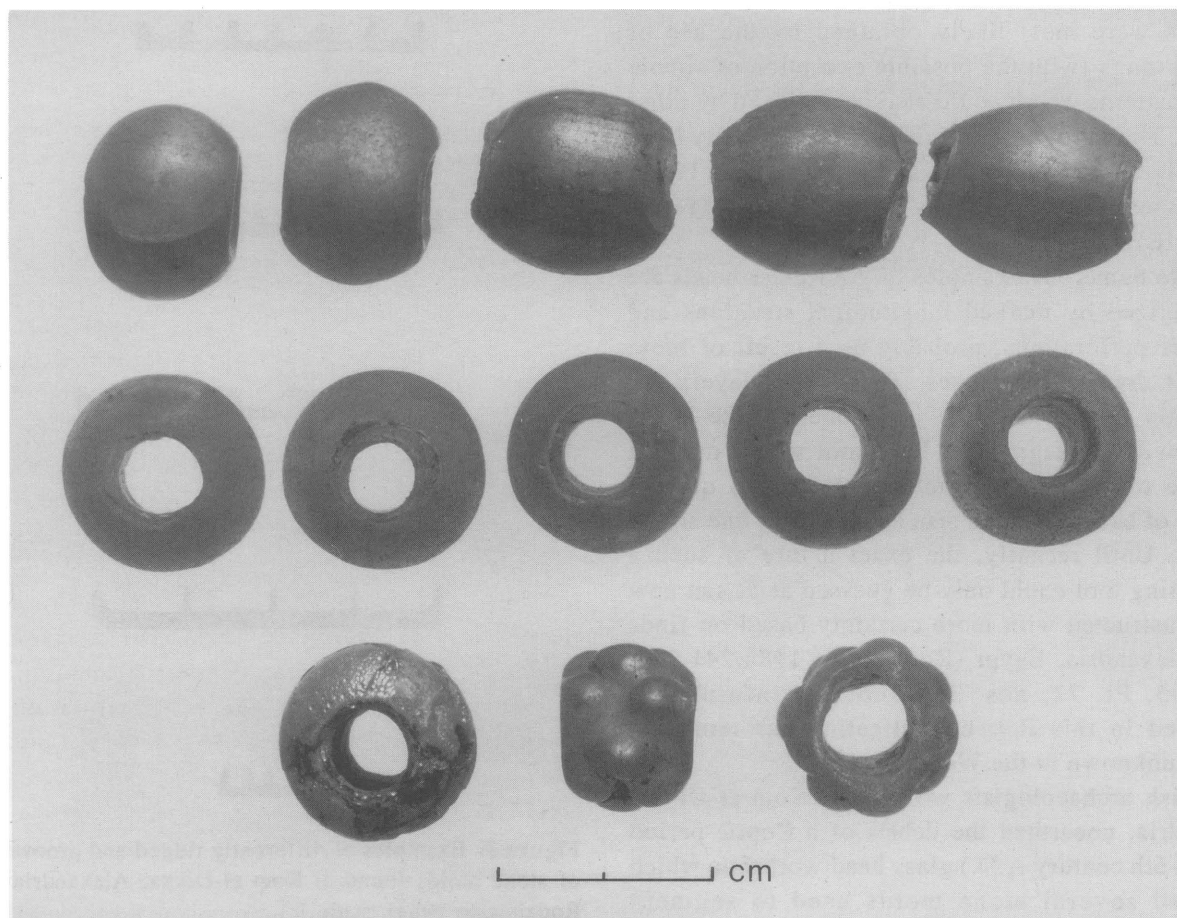
Gold-glass beads were produced over a period of some 1500 years, with only minor differences. In order to distinguish between early and late beads, one has to pay close attention to slight variations in manufacturing technique and style.

## TECHNIQUES OF MANUFACTURE

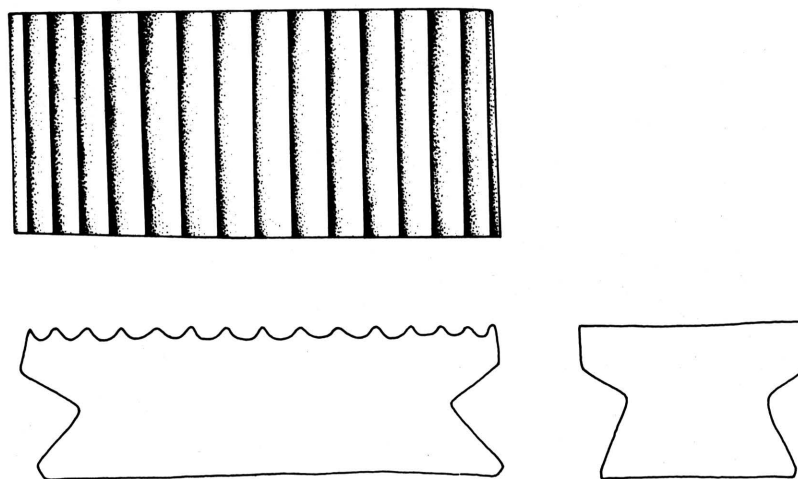
Both layers of most gold-glass beads were made by drawing. There are only some very rare exceptions to this rule (*see* "The European Epilogue" below, and the caption of Pl. IA). Some longitudinal striations can almost always be observed on the outer layer; some of them rather faint, others strong. The same is true of the interior layer, whenever it happens to be exposed. Drawing, as a common beadmaking technique, was introduced sometime prior to the introduction of gold-glass beads. The insertion of a bubble of air into the glass before the actual drawing of the tube can be accomplished by variations of either rod-forming, tooling or blowing techniques. An examination of finished beads rarely enables us to establish which of these methods was used. Gold-glass beads have sometimes been described as "blown and drawn" (e.g., Callmer 1977:51-53 *passim*). However, this can be misleading and should be avoided.

The following reconstruction of the manufacturing process is suggested: A drawn tube was, after cooling, covered with a very thin layer of metal foil, probably attached with the aid of an adhesive. Another, slightly larger, premanufactured tube was then slipped over the first (these tubes are likely to have been premanufactured in some quantity so that well-fitting examples would always be on hand). A section of the double tubing was subsequently reheated while held on a rod or wire. Some caution was needed as the gold would suffer damage if overheated. The use of the rod or wire ensured the artisan a certain distance from the heat and kept the perforation open.

When the ends of the beads are examined, one finds that they differ and it is clear that they were finished in various ways. Some beads with neatly smoothed ends were finished individually by hot-working. This does not exclude the use of some tool for dividing the tube into beads. Any patterned



**Figure 1.** Various gold-glass beads finished individually by hot-working (Israel Museum, Jerusalem)(all photos by Zev Radovan).



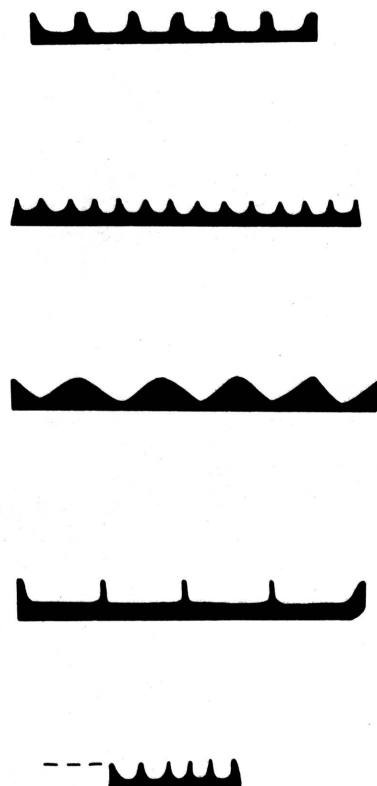
**Figure 2.** A well-preserved stone sectioning mold for the production of 14-segment bead tubes from Kom el-Dikka, Alexandria (after Rodziewicz 1984; all drawings by Pnina Arad); scale 1:1.



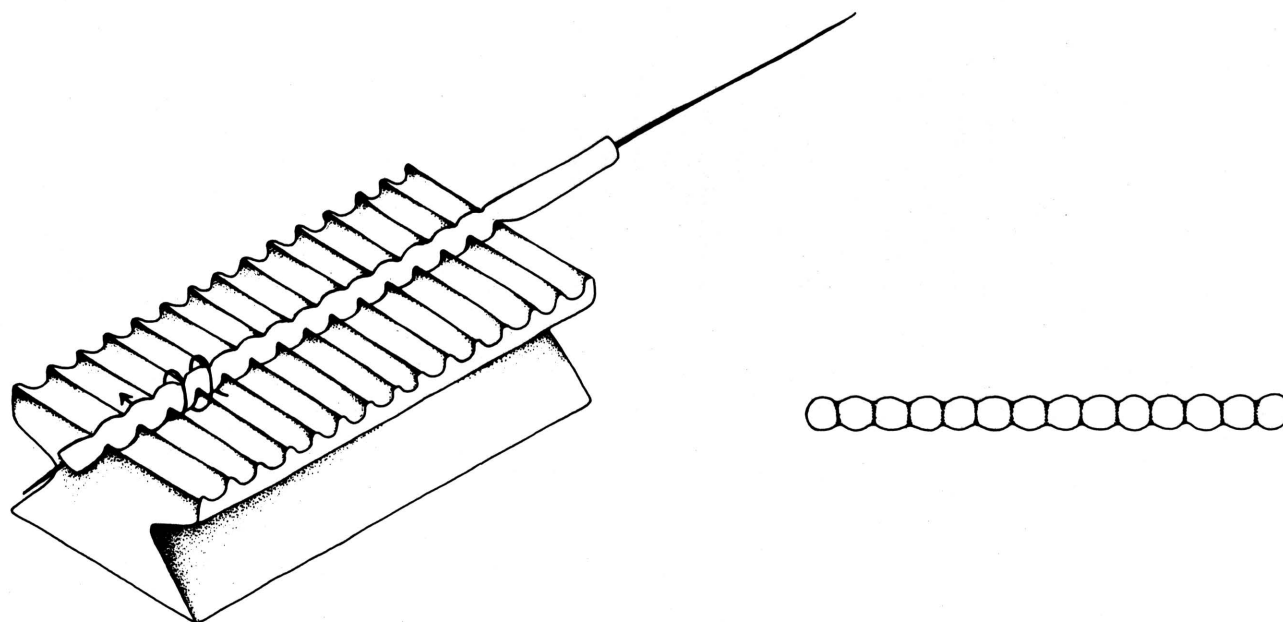
surfaces were most likely obtained by the use of shaping tongs (with the possible exception of simple ribbed patterns which could also be achieved by other means). The individually finished beads usually have relatively large perforations and the two glass layers often appear to be of roughly equal thickness (Fig. 1 and Pl. IB).

More numerous examples of gold-glass beads are characterized by marked longitudinal striations and narrower perforations, probably as a result of more efficient drawing processes. Their outer layers are frequently thinner than the inner ones. These beads were obviously segmented by a tool which made it possible to divide the combined tube into quite a number of beads of equal size and shape in one single process. Until recently, the exact nature of such a segmenting tool could only be guessed at. It can now be reconstructed with more certainty based on finds from Alexandria, Egypt (Rodziewicz 1984:241-243, Fig. 265, Pl. 72, nos. 359-366; the information contained in this Polish publication has remained largely unknown in the West).

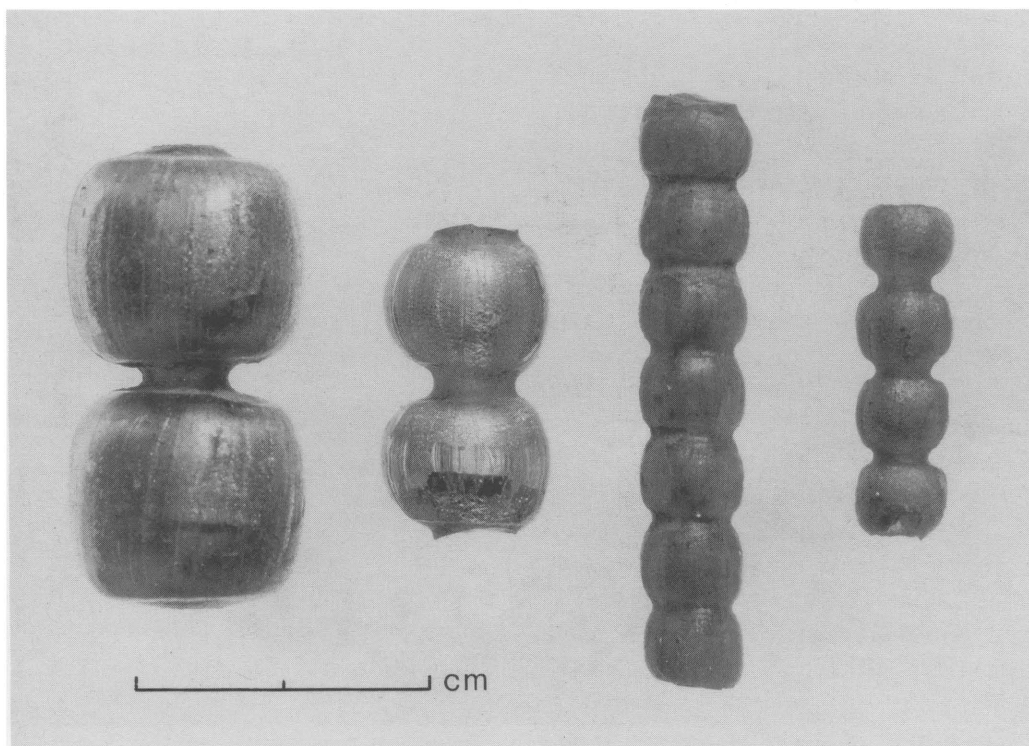
Polish archaeologists working at Kom el-Dikka, Alexandria, unearthed the debris of a Coptic-period (ca. 4th-6th century A.D.) glass bead workshop which included several stone molds used to segment "ordinary" single-layered drawn beads. The report



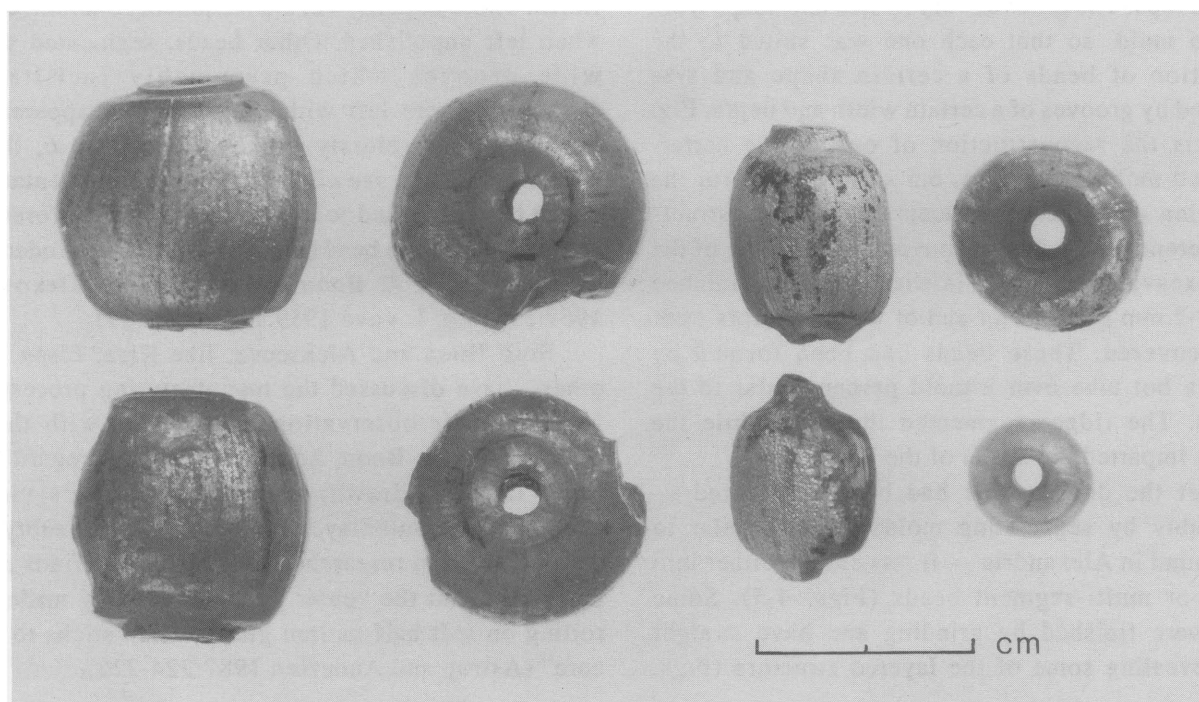
**Figure 3.** Examples of differently ridged and grooved tops of stone molds found at Kom el-Dikka, Alexandria (after Rodziewicz 1984); scale 1:1.



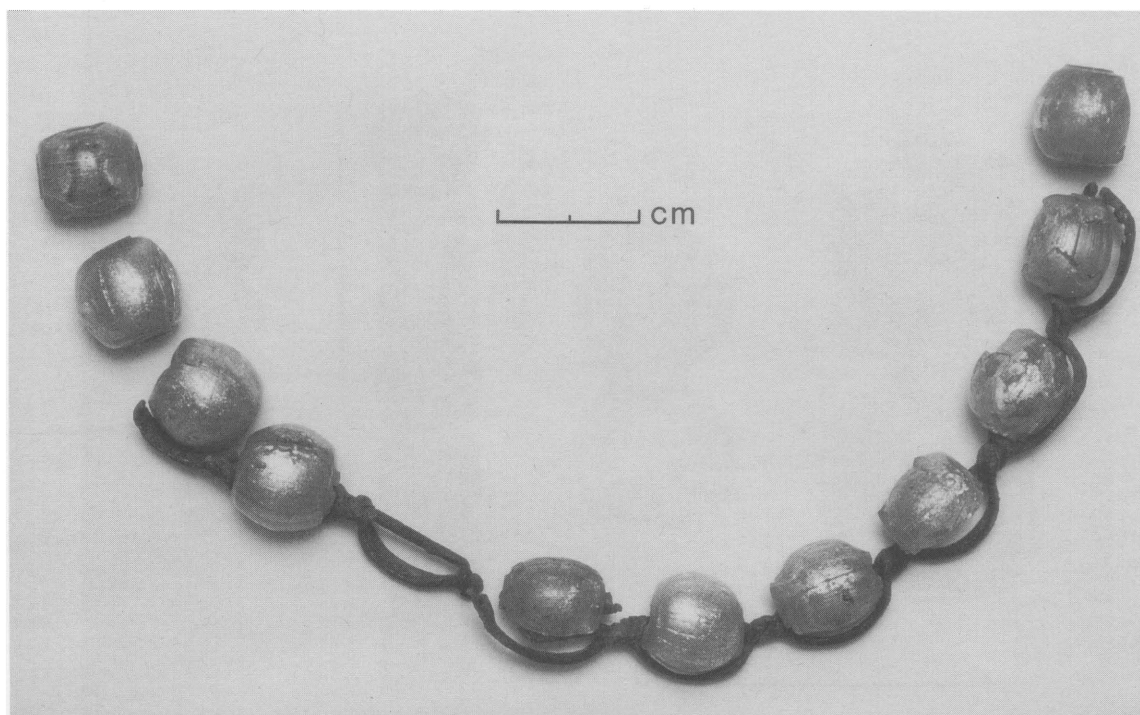
**Figure 4.** The rolling of a double gold-glass tube on a mold (left) similar to the one shown in Fig. 2 to produce the 14-segment bead tube on the right.



**Figure 5.** Segmented gold-glass beads of different sizes and shapes; the small-sized beads were very possibly used unseparated (cf. Pl. ID, small necklace in top center)(Israel Museum, Jerusalem).



**Figure 6.** Differently cold-finished gold-glass beads; note the beads with jagged edges in the third column from the left (Israel Museum, Jerusalem).



**Figure 7.** Gold-glass beads 6-8 mm long on the original decorative leather string; probably Roman (Egypt?) (IMJ 84.35.97, gift of the Meyerhoff family, Baltimore, to "American Friends of the Israel Museum").

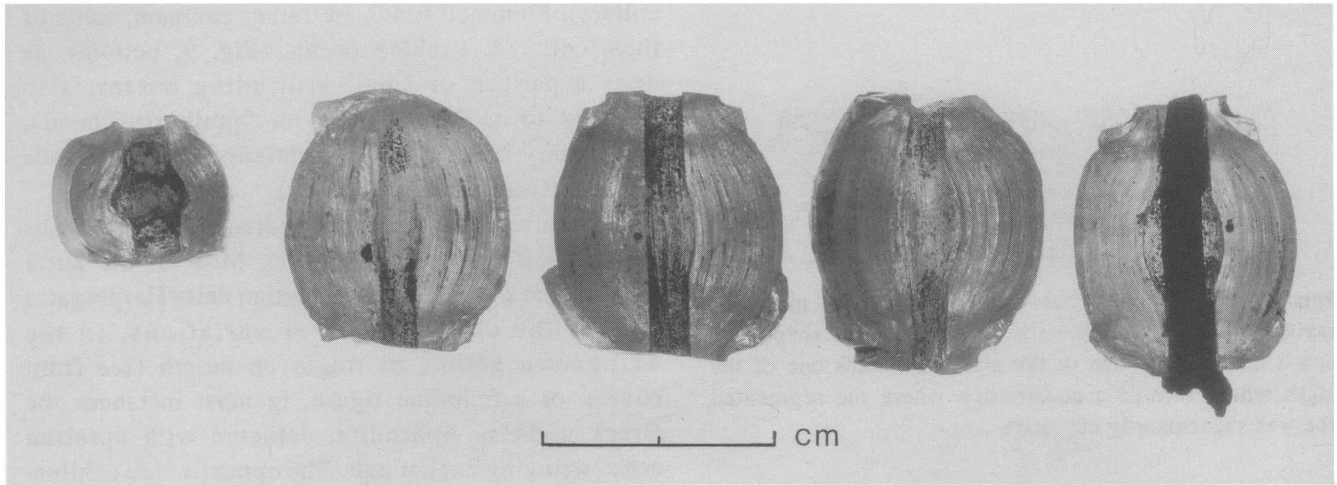
provides information on eight different freestanding molds made of granite, schist or limestone with grooved tops. The grooves vary in size and shape from mold to mold, so that each one was suited to the production of beads of a certain shape and size separated by grooves of a certain width and depth. Fig. 2 depicts the reconstruction of one of the better-preserved molds, with a ca. 6.5 x 3.0 cm top for the production of 14 bead segments. Fig. 3 reconstructs the differently ridged and grooved tops of some of the other excavated molds. Finished and semifinished beads 2-7 mm in diameter and of various colors were also recovered. These beads had been formed by rolling a hot tube over a mold perpendicular to the grooves. The ridges segmented the tube while the grooves imparted the shape of the beads.

After the double tube had been segmented — presumably by segmenting molds rather similar to those found in Alexandria — it was cut up, either into single- or multi-segment beads (Figs. 4-5). Some beads were finished by grinding and have straight ends, revealing some of the layered structure (Figs.

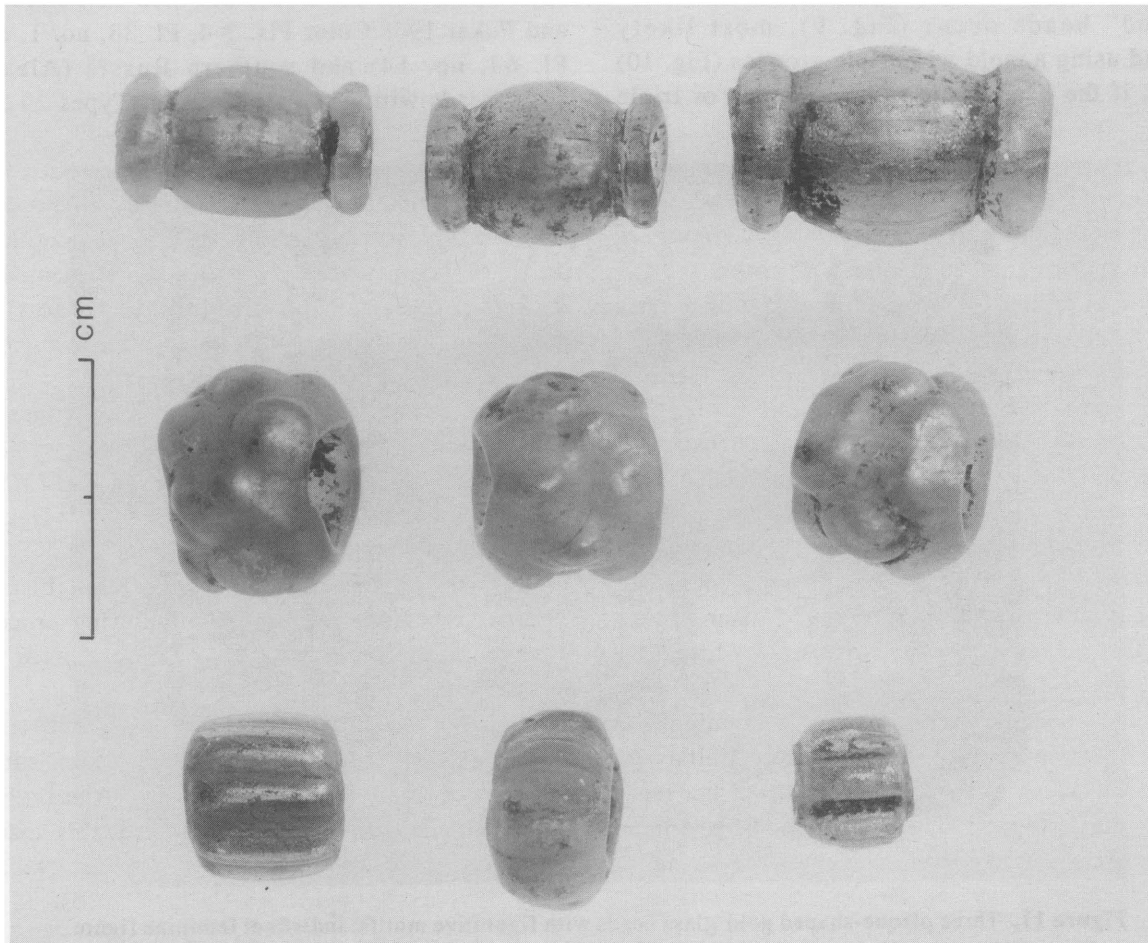
6[two left columns]-7). Some may have been lightly polished, but many more were cut without any further finish. Those expertly cut are reasonably smooth, even when left unpolished. Other beads, segmented with wide grooves which presumably facilitated separation, were left with ragged edges, apparently having been carelessly broken apart (Fig. 6, third column from left; *see also* Fig. 14). The segmentation of the tube often led to a widening of the perforation at the center of the bead (Fig. 8) (Astrup and Andersen 1987:224, Fig. 4; Boon 1977:Figs. 1-3; Dekowna 1967:Fig. 3,b; L'vova 1959:Fig. 5, no. 11).

Both Boon and Alekseeva, like Kisa, Eisen and others, have discussed the manufacturing processes. Most of their observations are in line with those outlined above. Boon, however, does not regard the outer layer as drawn; and, in Alekseeva's view, drawing of the outer layer applies only to one subtype. Two Norwegian researchers of Viking Age finds also concluded that the "outer glass is probably made by rolling on soft half-molten glass, which sticks to the core" (Astrup and Andersen 1987:224-225).

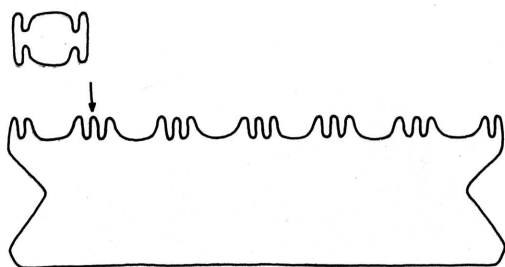




**Figure 8.** Broken gold-glass beads showing the typical widening at the center; the specimen on the right still has its original leather string (Israel Museum, Jerusalem).



**Figure 9.** Examples of collared, granulated and ribbed gold-glass beads (Israel Museum, Jerusalem).



**Figure 10.** Suggested cross-section view of a mold for making "collared" beads with a finished bead shaped on such a mold just above it; the arrow indicates one of the ridges which formed a constriction where the segmented tube was subsequently cut apart.

### SHAPES AND PATTERNS

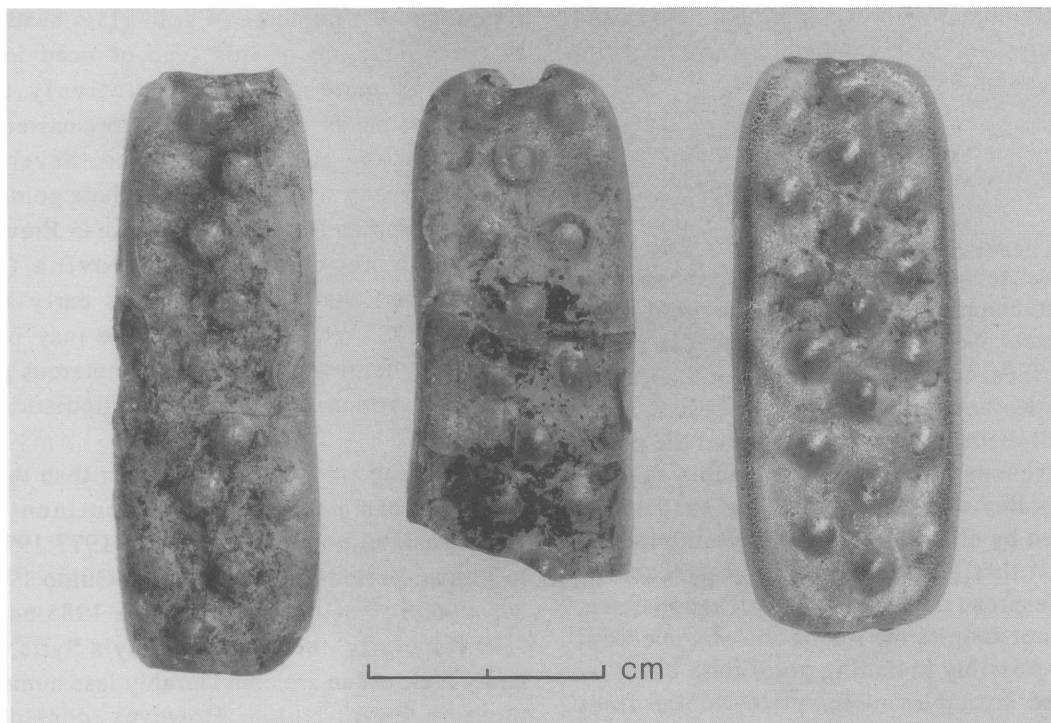
The majority of gold-glass beads are plain, without pattern, made in various spherical and cylindrical shapes. There are, however, also beads in other shapes and/or with patterned surfaces. "Collared" beads occur (Fig. 9), most likely segmented using a mold with triple grooves (Fig. 10) (or more, if the beads were to have double or triple

collars). Flattened beads are rather common, some of them collared. Ribbing occurs (Fig. 9, bottom), as does a pattern of small protruding bosses, also referred to as "granulated" or "mulberry" beads, presumably imitating true granulation on stone beads (Fig. 9, center; see also Fig. 13).

Of particular appeal are rectangular disk beads with figurative motifs (Fig. 11). Most of the latter have on one side either the Egyptian deity Harpocrates (Horus the child) in minor variations, in the well-known gesture of finger on mouth (*see* front cover), or a feminine figure, in most instances the Greek goddess Aphrodite, depicted with upraised arms, wringing out her hair. The opposite side exhibits a lattice pattern of small bosses (Fig. 12). These beads, although relatively rare, are well documented. They have been found primarily in Nubia (Dunham 1957:108, bottom, Fig. 73, Pl. 66,F; Shinnie and Bradley 1980:Item 2515, Fig. 68; Woolley and Randall-McIver 1910:75), but also in Persia (Sono and Fukai 1968:Color Pls. 3-4, Pl. 38, no. 1, center, Pl. 64, no. 14) and southern Russia (Alekseeva 1978:Beads with an inlay of metal, Types 29-30, Pl.



**Figure 11.** Three plaque-shaped gold-glass beads with figurative motifs: indistinct feminine figure and two different versions of Harpocrates with finger on mouth and "horn of plenty" at the side; said to come from Egypt (Israel Museum, Jerusalem, nos. 77.12.330 and 77.12.710, Dobkin collection; private collection, Jerusalem).



**Figure 12.** The backs of the beads in Fig. 11.

26, nos. 62-66). There are also other rare figurative representations. A disk bead depicting an animal (a dog?) is displayed in the Metropolitan Museum's Egyptian department, Study Gallery 28a, in addition to the more common representations of Harpocrates and Aphrodite. Also, some vessel-shaped pendants in the round are illustrated by Alekseeva (1978:Pl. 26, nos. 39-40).

### COLORS AND INLAYS

The two glass layers are identical in most cases: usually colorless, translucent if not transparent, often with a greenish or yellowish tinge. There are exceptions, though, and some low-quality beads with inferior foil are made of yellow glass to make them look more golden. There are some exceptional beads made in strong colors and some such pieces were found at Rhodes (Pl. IA)(Weinberg 1971:146). There are also beads of yellowish glass over inferior metal foil which appear to be copying colorless glass with gold foil. One has also to take note of the fact that there are beads decorated with gold foil under colorless glass which do not fit our definition of

gold-glass beads. Among them are the luxurious so-called "gold-band" beads — specimens with variously colored trails, including some with gold foil — and stratified eye beads with gold foil strata (e.g., Alekseeva 1975:Eye beads, Types 73, 87a, 119, 125, 133; 1978:Striped designs, Types 289, 292). One should also be aware that the Celtic or "La Tène" beads of the final centuries of the first millennium B.C. have been consistently described by their principal researchers, all writing in German, as being decorated with foil (*Folie*) when referring to a layer of yellow glass placed under colorless glass (Gebhard 1989; Haevernick 1960; Zepezauer 1993).

Gold-glass beads with patterned foil, of the kind found in vessels and inlays, are not known. Silver foil (or a substitute) was probably used not only to copy silver beads, but also pearls which came into use only during the Hellenistic period (Pl. IC). Of whatever metal, the foil was always very thin (according to Alekseeva [1978:27], it could be as thin as 0.0001 mm), and this has added to the difficulties of testing the composition of the metal foils. Their quality varies considerably and different substitutes were undoubtedly used. A study of medieval beads by Haevernick (1954:especially nos. 74, 107) showed the silver foil



to be frequently mixed with iron, and that copper and lead also figured in their composition. Some paint mixtures may also have been used.

## ORIGINS OF MANUFACTURE

Egypt has usually been considered the birth place of the gold-glass technique, and was no doubt an early and important manufacturing center for gold-glass beads and vessels. Neighboring Nubia has also provided very rich finds. Only the excavators of the Roman cemeteries at Karanog and the Coptic-period royal cemeteries at Ballana and Qustul suggested the possibility of indigenous manufacture in Nubia (Emery 1938:182; Woolley and Randall-McIver 1910:17), a view not shared by others. It is now becoming increasingly apparent that glass beadmaking was considerably more widespread than once believed and that one, therefore, cannot dismiss the likelihood of some local production — possibly including gold-glass beads — south of Egypt. Examples of Egyptian-Nubian finds appear in Brunton (1930:27, Pl. 46, nos. 144, 146-148, 153, 156, 182, 194-200), Dunham (1957:for example, 80, Fig. 51, 21.12.193a-b, Pl. 65R; 104, Fig. 71, 21-2-558, 564d; 118, Fig. 78, 22.1.22h; 1963:for example, 178, Fig. 132f, rows 4, 6, 822.2.559a-d; 184, Fig. 134a, bottom, 22.2.598k), Emery (1938:Pl. 43, Types 1, 30, 40-42, *see also* Pl. 47A), Holland (1991:113, Pl. 79), Shiah (1944:400-402, 407) and Woolley and Randall-McIver (1910:74-77, Pl. 40).

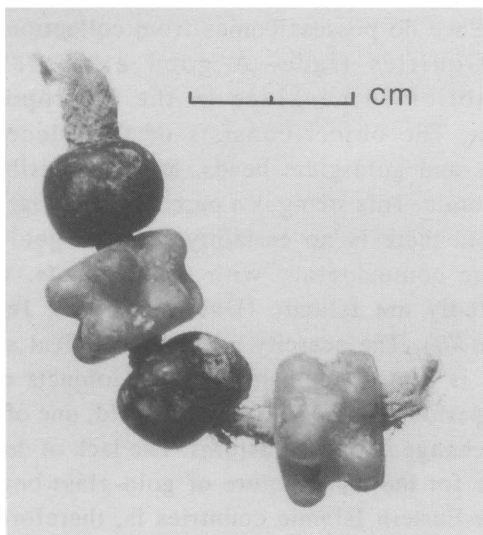
Hellenistic Rhodes is the only identified site for the early manufacture of gold-glass beads. Only a preliminary report has as yet been published, but it suffices to show the importance and scope of the finds (Weinberg 1971). Greece and the Aegean region were seen in the past as playing only a very peripheral role in glass history, but a different reality is now emerging — and not only as concerns gold-glass. However, very little is known regarding the continuation of gold-glass bead production and use in Rhodes and/or other parts of Greece.

The southern Black Sea littoral has yielded numerous gold-glass beads of Hellenistic-Roman times. More than 9500 specimens were inventoried by Alekseeva (1978:27-32), and she dates some of them as early as the 3rd century B.C. Many of these closely resemble the Egyptian finds and quite a few may well have been imported from Egypt and elsewhere. However, glass beads were certainly made in the

region and the numbers of gold-glass beads are such that a production of this type of bead in southern Russia is probable from relatively early on. Gold-glass beads also appear in more easterly regions already in the Hellenistic period. Several locally excavated bead strands, which include gold-glass, are in the Armenian Historical Museum in Erevan. Some, such as a necklace from Golovina (personal observation), have been dated as early as the 4th century B.C. While the exact date may be open to question, the presence of rather numerous gold-glass beads in Armenia during the Hellenistic period is certain.

European finds in regions other than those of the southeastern portion of the continent are less numerous and not as early (Boon 1977:197; *re finds in Roman-period Europe, see also* Guido 1978:93-94, 205-206; Tempelmann-Maczynska 1985:64-65, Type 387). Similarly, the finds in today's Syria, Lebanon, Israel and Jordan are considerably less numerous than those in Egypt-Nubia. However, considering the quality, versatility and volume of Roman-period Syrian glass production, which in all probability included high-quality beads, it would be surprising if gold-glass beads were not made there, notwithstanding the lack of published sources. Persia is another country likely to have produced gold-glass beads and the evidence, although not rich, points to a rather early date (Fukai 1977:Pl.50, top rows; Sono and Fukai 1968:Color Pls. 3-4; these few sources are boosted by evidence from the antiquities trade). India is among the countries suggested as home to gold-glass bead manufacture (Dikshit 1969: 56-58). Although indications of specific production sites are lacking, we believe that gold-glass bead production had spread to several sites in the Mediterranean region and other parts of Europe and Asia by the Roman period, if not already earlier.

It is necessary to stress that any lack of evidence is never quite so negative on closer inspection. Gold-glass beads do not weather well. The layered structure of the glass and the flimsiness of the foil are contributing factors. Many examples, on losing their original brilliance, were certainly overlooked; quite apart from the fact that excavators never paid much attention to bead finds, if not of exceptional style or date. This is especially true in those regions where there are any number of more spectacular finds to



**Figure 13.** Two of the “granulated” gold-glass beads from En Gedi, found on the original linen string (courtesy of the Israel Antiquities Authority).

focus on (note the different states of preservation of the gold-glass beads in Pl. ID).

Boon (1977:197-200) has shown Roman gold-glass bead finds in Britain to be quite numerous, contrary to what might have been expected. Likewise, a closer scrutiny of bead groups in Israel has revealed that gold-glass, although never common, was not quite as rare as once assumed. Not surprisingly, several finds are from arid zones, such as En Gedi, Massada and Moa. Other find sites include Hanita, Nahariya, Shikmona, Mishmar HaEmek, El Makr and Shubeika. Only the finds from Hanita and En Gedi have been published (Barag 1978:45, Fig. 18, nos. 113-114; Hadas 1994:11, 56, Fig. 27, Color Pl. 10). At En Gedi, an oasis on the shores of the Dead Sea, gold-glass beads were found with other beads of glass and stone (Pl. IIA) in well-preserved wooden coffins dating to around the beginning of the 1st century B.C. Among the gold-glass beads, 15 dainty pieces had a pattern of “granulation” in two or three rows. Three glass beads were decorated with gold foil without an outer layer of glass. A few of the beads, gold-glass among them, were still on the original linen string (Fig. 13). Published beads from Jerusalem, Huqoq and Ashdod are very possibly gold-glass, although not described as such (Baramki 1935:Pl. 80, no. 5; Dothan 1971:Pl. 94, nos. 17-21; Ravani and Kahane 1961:121-122, 130-132, Pl. 18, no. 6). Still, by any reckoning, the absolute numbers of gold-glass beads found in

Palestine are too small to indicate local production. However, if once the very idea of any such production was beyond consideration, this is no longer so (regarding finds in the eastern Mediterranean region, other than Palestine, *see* Baur 1938:546; Chehab 1986:Pl. 32, no. 4[?]; Negro Ponzi 1971:No. 46[?]; Smith 1973:Pl. 80, Ck; Strommenger 1980:Fig. 61).

Trade versus local production is a pertinent question at most times. The disk beads with figurative motifs discussed above are a good example of the issue. This is an easily distinguished homogenous type, which, although never common, has been rather narrowly dated. The beads have been found in regions quite distant from one another. They may all have been made in one center and exported elsewhere, or made in different locations by similar methods, possibly using imported molds. The existence of long-distance international contacts is certain, but it will always be difficult to establish when trade exchanges consisted of raw materials, implements and/or the artisans themselves, rather than finished goods.

To throw light on the origins of gold-glass beads, a compositional analysis was made of Roman period finds: one from Caerleon, Britain, one from Faras, Nubia, and one from Panticapeum, southern Russia. Test results showed the British and Nubian beads to be so close in their constituents that the glass might be from the same source (Dekowna in Boon 1977:202-206). However, it seems doubtful that even tentative conclusions can be drawn from so small a sample.

## CHRONOLOGICAL DEVELOPMENT

The gold-glass beads found at Rhodes, representing various stages of fabrication, are very significant, showing this production as an already-established craft, past the experimental stage, at a time approximately fixed by Weinberg (1983) as the late 3rd century B.C. Accordingly, gold-glass beads were first made sometime prior to this time, although they only became commonplace somewhat later.

The earliest gold-glass beads have a strong golden color and were almost certainly made with good gold foil. They have plain surfaces, without patterns, and are of slightly irregular sizes and shapes, indicating that they were shaped individually, with smooth hot-finished ends. Pattern-molded surfaces appeared relatively early. There was more diversity during the

early Roman period than at any other time, with various patterned types being produced. However, this period also saw the introduction of new techniques which, in time, would lead to increased production, but less diversity.

The luxurious beads with figurative motifs appeared for a relatively short time: from the middle of the 1st century B.C. to the middle of the 1st century A.D. The patterns of small bosses (granulation) known from the late Hellenistic and early Roman periods went out of fashion during the 1st century A.D., but cruder beads with larger bosses came into use. Some ribbed beads continued to appear. Already in the Roman period, most gold-glass beads can be described as mass-produced, being strongly striated with narrow perforations. "Collars" came into fashion and silver foil was used, but remained for a long time less common than gold foil. Many beads were left segmented, not broken or cut apart. Silver-glass, collared and segmented beads become well-known during the Roman period, but may have forerunners at the end of the Hellenistic period.

One can be rather certain that the technical differences between beads finished individually by hot-working and beads shaped in multiple numbers using segmenting molds are temporally indicative: the first type is mainly Hellenistic and early Roman; the second is mainly Roman or later. However, considering the time and space involved, there would have been some exceptions to the rule, as well as "hybrid" types, and our information is still too spotty to permit other than very general conclusions.

The production of gold-glass beads continued in the Near East during the late Roman-Byzantine period. There is not much variety and patterned surfaces are rarely seen. Quality is frequently low with an increasing number of beads carelessly broken apart. However, there are reasonably well-made beads as well, as exemplified by the finds at Ballana and Qustul in Nubia (Emery 1938). It is interesting to note that some of these particular gold-glass beads were used as part of elaborate trappings for buried horses! (Emery 1938:201, cat. no. 84).

### THE ISLAMIC NEAR EAST

There is no definite information on gold-glass beads in the Near East during the Islamic period. The

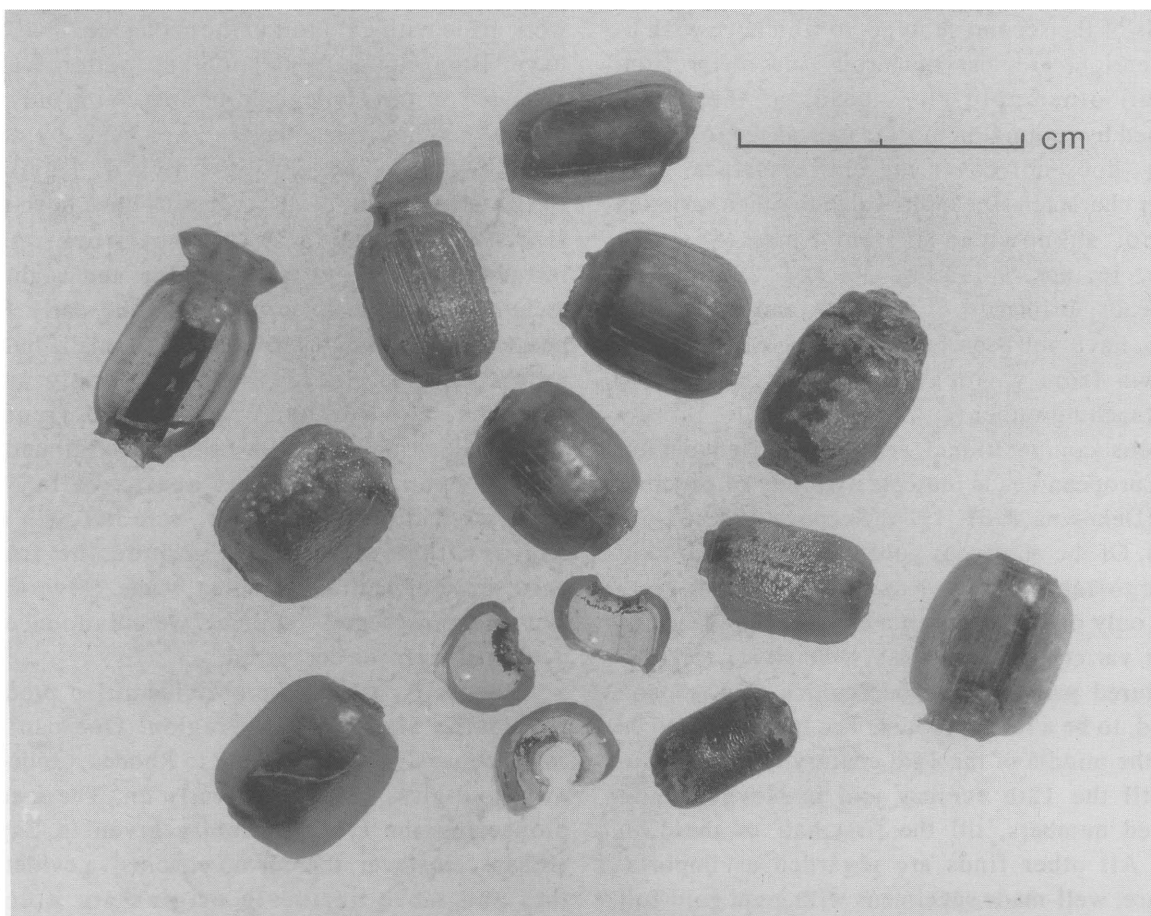
evidence we do possess comes from collections and the antiquities trade. A good example is a well-publicized necklace in the Metropolitan Museum. The object consists of trail-decorated pendants and gold-glass beads, and is described as early Islamic. This string is a purchase (Pfeiffer Fund 1973) and there is no certainty that the gold-glass beads are contemporary with the pendants, which undoubtedly are Islamic (Dubin 1987:92; Jenkins 1986:no. 77). The scarcity of archaeological source material is typical of many kinds of objects of the Islamic period. The reasons are manifold, one of them being a change in burial customs. The lack of definite evidence for the manufacture of gold-glass beads in the Near-Eastern Islamic countries is, therefore, not decisive. Egypt and Syria are likely to have continued their gold-glass bead production during the early Islamic period. Even so, it seems safe to assume that the majority of the gold-glass bead-producing centers were located outside the eastern Mediterranean countries during this time.

### THE EUROPEAN EPILOGUE

The medieval European gold-glass bead finds are extremely numerous when compared to the contemporary eastern Mediterranean ones. This rich material, a continuation and outgrowth of the Greco-Roman beads, reached regions that previously had hardly been associated with this type of bead.

The Migration-period graves (primarily 5th-7th centuries A.D.), known for their abundance of glass beads generally, contained gold-glass beads (there is no synthesizing study of Migration-period beads, but, as they figure in every relevant excavation report, albeit with few details, there exists a vast fund of data which cannot be detailed here; *see* Boon 1977:201-202). From the 6th century onward, silver-colored foil became very common, often outnumbering gold. The finds from parts of Germany, northern France and Belgium are so numerous that Boon (1977:201) sees local production as "certain." Gold-glass beads are by no means restricted to northwestern Europe, being found in various parts of central and eastern Europe as well. They are well-known from Viking-Age Scandinavia, primarily the 9th-10th centuries (Callmer 1977: Bead group E, "drawn multibeads;" the distinction between





**Figure 14.** Hollow gold-glass beads: brownish-yellow outer tube over a narrow inner tube covered with a dark metallic layer (right); a deliberately broken bead (left)(Israel Museum, Jerusalem, no. 86.67.22).

segmented beads with and without foil is not always clear in this publication). The beads were very popular in Russia and some other eastern European countries, from the Baltic to the Black Sea, with a quantitative edge to the south. A peak was reached in the 11th century. Numbers decreased thereafter, but in some regions the beads continued into the 13th century. Quality is often inferior, rarely reaching above the mediocre. Patterned surfaces are rare.

Two subtypes can be distinguished from the others on technical grounds. The first, "hollow" gold-glass beads, consists of two tubes, as is commonly the case, but the interior tube is narrower than usual and the two tubes touch only at the point of segmentation. The glass is brownish yellow and the metal foil is silver colored (Fig. 14). These are some kind of "economy" beads which achieve a reasonably good simulation of true gold-glass. It is an ubiquitous variation seen occasion-

ally in the Near East, but better known among European finds. Crude examples of this subtype were uncovered at Staraja Ladoga, Sarkel-Belaia Bezha (L'vova 1959:326-327) and the Varninsky burial site (L'vova 1983:especially groups 204, 207), all dating to the 8th-11th centuries (see also Haevernick 1954:nos. 128-131). Earlier beads of this subtype have also been reported. Many were found at Panticapeum; they were attributed by Alekseeva (1978:Glass with a layer of metal, Types 31-33, Pl. 26, nos. 72-78) to the early centuries of the Roman period in spite of the fact that she described them as "undocumented." One seemingly similar bead, found at Vitodurum, Switzerland, was also recorded in an early Roman context (Rütti 1988:94-95, no. 1920). There is, accordingly, a definite possibility that this subtype, best known from Medieval times, but with earlier forerunners, was already present in the early Roman period.

Beads of the second subtype, to which we wish to draw attention, are less numerous and differ from almost all other gold-glass beads as they were rod-formed by folding. In most instances the foil, gold or silver, does not cover the entire surface. This particular characteristic applies also to other varieties and is not unknown in ancient times (Scapova 1972:Fig. 16, nos. 9-11, Fig. 33, nos. 29-30). The folded beads, primarily of the 11th and early 12th centuries, have not been found in the Near East, but are known from various excavations in Eastern Europe, reaching rather far north.

Various compositional analyses carried out on eastern European beads indicate a variety of possible sources (Dekowna 1967, 1980; Scapova 1972:82-88, 176-180). Of the numerous gold-glass beads found in pre-Mongolian Russia, Russian archaeologists consider only one type, albeit a common one made of a certain variety of lead glass with silver foil and manufactured primarily in the regions of Kiev and Novgorod, to be a local product. The type began to be made in the middle of the 11th century, continuing in Kiev until the 12th century and in Novgorod, in diminished numbers, till the first half of the 13th century. All other finds are regarded as imports. Rather rare, well-made specimens with good gold-foil are believed to have been imported from one of the Islamic eastern-Mediterranean countries until the 11th century. As for the rest, including the folded beads, "Byzantium," famous for its gold-glass mosaics, is frequently suggested as the most likely source. Byzantine Corinth and Sardis, among the very few sites with published beads, have not provided any confirmation.

Eastern European gold-glass beads have been the subject of considerable interest on the local level and there is a large amount of literature in the Slavic languages, often difficult to come by in the West (on the major sources, *see* Callmer 1977, especially note 190). It is important to realize the scope of the European finds. Comprehensive studies of the European gold-glass beads and of those of Southeast Asia would be very welcome.

## CONCLUSION

We estimate that the gold-glass bead industry was introduced in the early 3rd century B.C. Early beads

were made with gold foil to the exclusion of silver and have plain surfaces, but molded patterns already appeared in the Hellenistic period. With only a few exceptions, both glass layers were made by drawing from the very beginning onward. During the Hellenistic period, beads appear to have been mainly finished individually by hot-working. The introduction of improved drawing and segmenting techniques, at some point during the early Roman period, subsequently led to certain small, but often unmistakable, changes: more strongly striated surfaces, smaller perforations and frequently cold-finished ends. A few beads have ground ends, having been skilfully cut apart, while others, carelessly cut or broken apart, were left with ragged edges. Other differences include the frequent occurrence of multi-segmented beads. Silver-colored foil and ornamental "collars" were introduced, but patterned surfaces decreased.

Rhodes is, as yet, the only identified production site in the Mediterranean region. One can safely assume that Egypt, in addition to Rhodes, produced its own gold-glass beads from early on. The credit for pioneering the type is usually given to Egyptian artisans. However, there is no conclusive evidence for this and more northerly origins are a definite possibility. Regions estimated as being home to gold-glass bead manufacture by the early Roman period, and possibly well before, include the Black Sea littoral, Persia and Syria. A further spread of the industry is likely to have occurred during the Roman period.

Gold-glass bead production continued in the eastern Mediterranean and related regions during the late Roman and Byzantine periods, and is likely to have lasted sometime into the Islamic period. However, the medieval European finds are considerably more numerous. This is especially true in Eastern Europe where gold-glass beads lasted into the first half of the 13th century in some regions.

## ACKNOWLEDGEMENTS

My thanks to Gladys Davidson Weinberg for giving me the opportunity to see the Rhodian finds, to Yael Israeli of the Israel Museum and Dan Barag of the Hebrew University for drawing my attention respectively to the finds of Kom el-Dikka, Alexandria, and to some gold-glass ring bezels in a recent British

Museum catalogue, to Yael Gurin-Rosen of the Israel Antiquities Authority for assistance in tracing gold-glass bead finds in Israel, and to Gideon Hadas of Kibbutz En Gedi, Rosalind Janssen of the Petrie Museum, University College, London, and Iveta Mkrtshjan of the Armenian Historical Museum, Erevan, for their help. I am grateful to Zlata L'vova of the Hermitage Museum, St. Petersburg, for making it possible for me to see the bead finds of Staraja Ladoga and Sarkel Belaia Bezha. My special thanks to Julia Scapova of Moscow University for much helpful information. I am indebted to Natasha Katznelson for translations from the Russian, permitting a glimpse into Russian bead literature. Photos are by Zev Radovan, when not otherwise stated, and the drawings by Pnina Arad.

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# THE A SPEO METHOD OF HEAT ROUNDING DRAWN GLASS BEADS AND ITS ARCHAEOLOGICAL MANIFESTATIONS

Karlis Karklins

*From at least the early 17th century to the latter part of the 18th century, drawn glass beads over about 4 mm in diameter were generally rounded in European glasshouses using a method called a speo by the Italians who apparently invented it. The little-known process involved mounting a number of tube segments on the tines of a multi-pronged iron implement which was then inserted in a furnace and turned until the tubes were rounded to the desired degree. Beads produced in this manner often exhibit distinctive characteristics and are easily identified in archaeological collections.*

## INTRODUCTION

In the manufacture of European hand-drawn beads, a long tube was drawn out from a hollow gather of molten glass by two men. When cool, the tube was cut or, more precisely, chopped into bead lengths. These could be marketed as is as tubular or "bugle" beads, or their forms might be altered by heat rounding.

Starting in 1817, this was accomplished using a technique that was invented by the Italian Luigi Pusinich and perfected in 1864 by Antonio Frigo (Gasparetto 1958:198). In this process, the tube segments were placed in a copper or iron drum with a mixture of lime, powdered charcoal and sand. The drum was then heated and revolved in a furnace until the segments became soft and their ends became rounded. The packing mixture in the drum kept the beads from sticking together and prevented their perforations from collapsing as the glass became viscid. Depending on how hot the fire was and how long the tubes were treated in this manner, they could range from practically unaltered tube segments to almost perfectly globular. Additional details concerning this method may be found in such reliable

first-hand accounts as Anonymous (1835), Carroll (1917) and Karklins and Adams (1990).

Prior to 1817, a less efficient method was used to round the tube segments. In this process, the tubes were placed in a large copper pan with a mixture of powdered charcoal or ash and sand. The pan was placed in a *ferraccia* (*ferrazza*) furnace and the contents stirred until the tube segments were sufficiently rounded (Karklins and Adams 1990:72-73; Karklins and Jordan 1990:6). Although this method was used to round large and very large beads as well (Karklins and Adams 1990:73), it was a time-consuming operation as it took a long time for the thick tube segments to soften and become rounded.

Consequently, another process was utilized to round tubes larger than about 4 mm in diameter. Called *a speo*, this method, unlike the ones described above, is not well documented. However, data derived from written accounts, contemporary paintings and archaeological specimens allows us to reconstruct the process and its approximate temporal range. Conversely, a knowledge of the process allows us to identify the beads rounded in this manner.

## THE A SPEO HEAT-ROUNDING PROCESS

Astone Gasparetto (1958:186) appears to be the first researcher to have described the process: "With the [*a speo* method], pieces of very thick hollow cane were softened, threaded on a sort of spit [*spiedo*], in the fire of a furnace, thus obtaining rather large beads which were the 'paternosters' proper." The spit was made of iron.

In Venice/Murano, the work was performed by the *paternostrieri*, a guild distinct from the *margariteri* who made the smaller *marguerites* or seed beads. At



**Figure 1.** Detail from “The Glass and Coral Factory,” by Jacob van Loo (1614-1670), showing three bead-rounding spits in the upper center (courtesy of The Royal Museum of Fine Arts, Copenhagen; Inv. no. Sp. 291).

the beginning of the 17th century, the two guilds, each governed by its own laws since 1604, had 251 members between them. These two guilds replaced the *cristalleri*, the original guild of beadmakers, which continued for a while, though in name only. Each *paternostri* master was restricted to a single furnace with only one opening, but could employ up to 14 workers. To become a master, a member of the *paternostri* had to pass several tests. In 1613, a new test was added to several established in 1581: "The *speo* masters must produce two spits, one of round paternosters, the other of olive-shaped examples" (Gasparetto 1958:186).

While the technique was probably developed in Venice/Murano, it spread to other bead-producing centers as part of the technology brought there by expatriate Venetians. Thus, we find examples of the spits depicted in a painting of the interior of a 17th-century glass bead factory,<sup>1</sup> apparently in Amsterdam (Pl. IIB). Executed by Jacob van Loo (1614-1670), a portrait and genre painter influenced by Rembrandt and Van der Helst (Oosthoek's Encyclopedie 1968:396), the painting shows three bead spits leaning against a box behind a lad who is chopping canes into bead lengths (Fig. 1). The implements are about a meter long and the handle appears to be composed of two stout iron wires probably wired or welded together. Protruding from the upper end of the handle are six prongs about 20-25 cm in length. The tines, which are roughly parallel to one another and appear to angle in at their bases, seem to be arranged in a circular configuration, rather than in a single plane like a fork. The painting depicts the spits in each stage of the production process: one is devoid of beads, one is arrayed with tube segments ready for rounding, and the third spit holds finished barrel-shaped beads. Each of the tines holds three beads which are about 2.0 cm in diameter revealing that only about 18 beads of this size could be manipulated at one time.

The detail of the painting is such that it may be accepted as an accurate representation of the spits, though it is likely that they varied somewhat through time and from factory to factory. The detail even allows us to determine the Kidd variety of the beads being produced: IIa1, opaque brick red, and IVb35-36 which have a translucent dark navy blue exterior with 8-12 white stripes, an opaque white middle layer, and

a translucent dark navy blue core (Kidd and Kidd 1970:70, 80). These varieties, in the sizes shown, are attributable to the late 16th and 17th centuries (Kent 1983; Rumrill 1991; Wray 1983). The striped beads are definitely known to have been made by the Dutch (Karklins 1974:77).

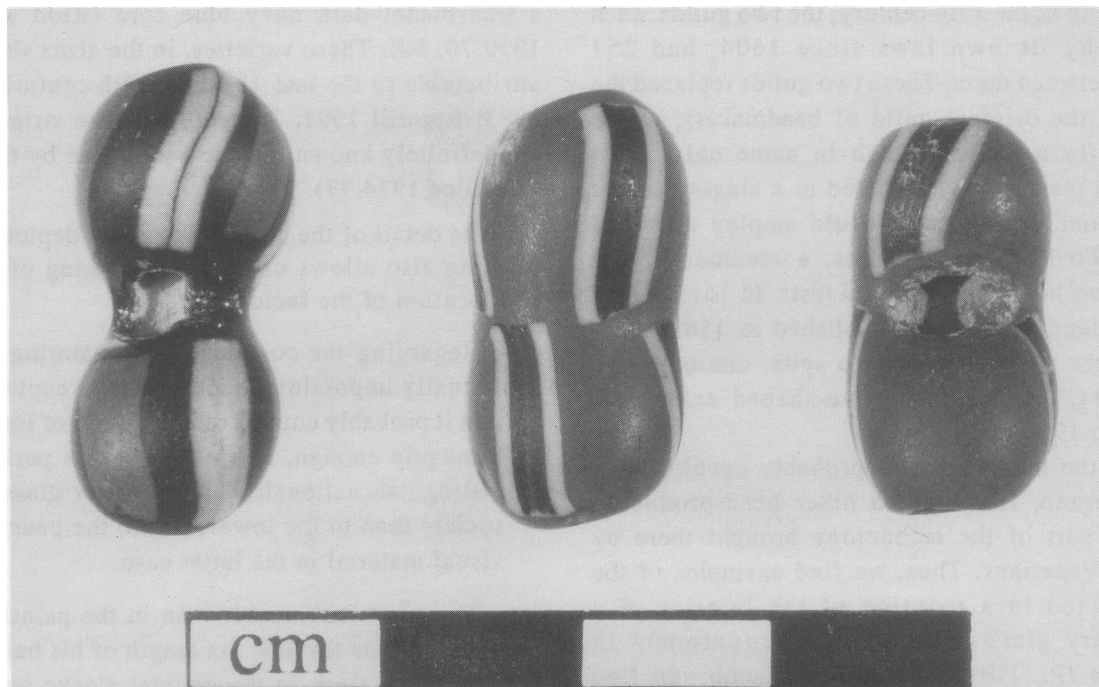
The detail of the clothing of those depicted in the painting also allows us to say something of the date and location of the factory:

Regarding the costume in the painting, it is virtually impossible to identify it, except to say that it probably comes from the north of Europe. Strangely enough, it is easier at this period to distinguish nationality in the upper classes of society than in the lower, due to the paucity of visual material in the latter case.

The most fashionable man in the painting is seated on the far left; the length of his hair, the collar, the slash in the doublet sleeve and the square-toed ?boots indicate a date of the early 1640s. The others are twenty or more years behind in their dress with no pretensions to fashion; the large shoulder wings and baggy breeches were fashionable in the early 1620s, so that there is a considerable time lag here. This is probably to be expected in terms of their class in society, but it is interesting to note that the master glassworker on the right (if that is who he is) is wearing uncompromising working clothing even down to the short jacket which was widely worn by sailors and artisans in the Netherlands in the first half of the 17th century. His clothing in fact seems to be either Dutch or Flemish; if he is Venetian, he may very well have adopted the clothing of the country in which he is working (Aileen Ribeiro 1983: pers. comm.).

However, based on the stylistic influence from the Le Nain brothers which is apparent in the painting, Eduard Plietzsch (1960:77, 104) believes that the painting was produced in Paris after van Loo departed from Amsterdam. In any event, the evidence suggests that the painting portrays an Amsterdam bead factory of the 1640s, quite likely part of the grand glassworks established on the Keizersgracht canal by Claes Rochusz Jacquet in 1621 (Baart 1988:69). The





**Figure 2.** Several examples of two beads fused end to end, partly (left and right) and completely (center). Specimens are from the Factory Hollow site (1615-1625), New York; Rochester Museum and Science Center (photo by Brian D. Fox).

presence of a very large chevron bead on a thick iron wire in the bead manufacturing wasters at site Kg10 (ca. 1601-1610; Jan Baart 1988:70) in Amsterdam confirms that the *speo* process was in use there during the very early 17th century.

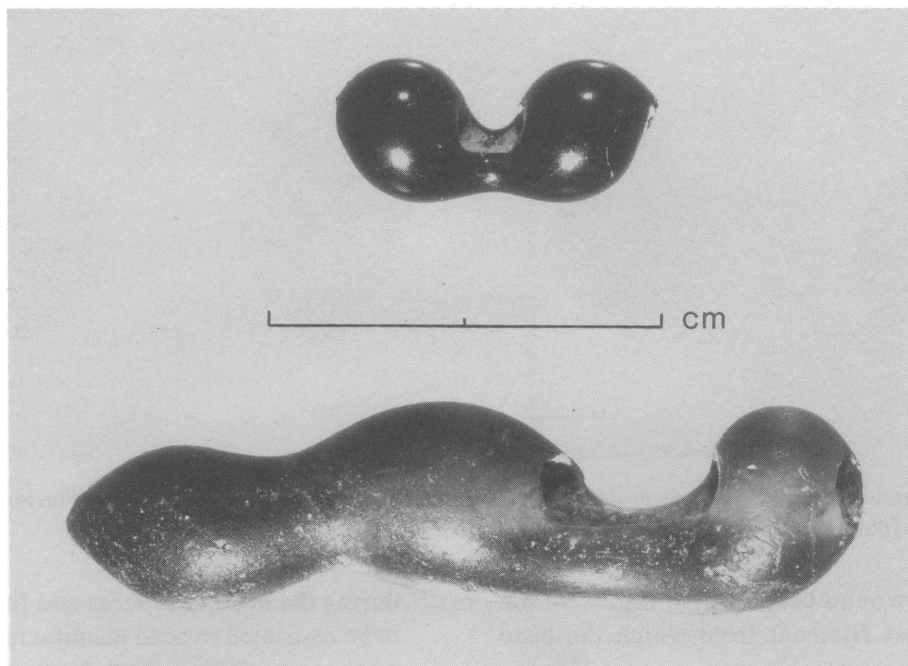
Once the tube segments were pushed onto the tines, it is likely that the spit was inserted into a furnace through a glory hole and slowly rotated to keep the beads from sagging or melting off the spit. The implement was doubtless inclined upward so that the beads would not slip off the tines. When the beads were sufficiently rounded, the spit was removed from the glory hole and probably continued to be rotated until the beads hardened. Based on the van Loo painting, the spits were then simply leaned against convenient objects until the beads were cool enough to remove from the tines.

#### THE CHARACTERISTICS OF BEADS ROUNDED A *SPEO*

If the rounding procedure was carried out perfectly, the beads bore no evidence of the process. However, things did not always go the way they should (e.g., beads

slipped down the tines or the glass was still viscid when the spit stopped being rotated) and many beads exhibit characteristics that identify the error:

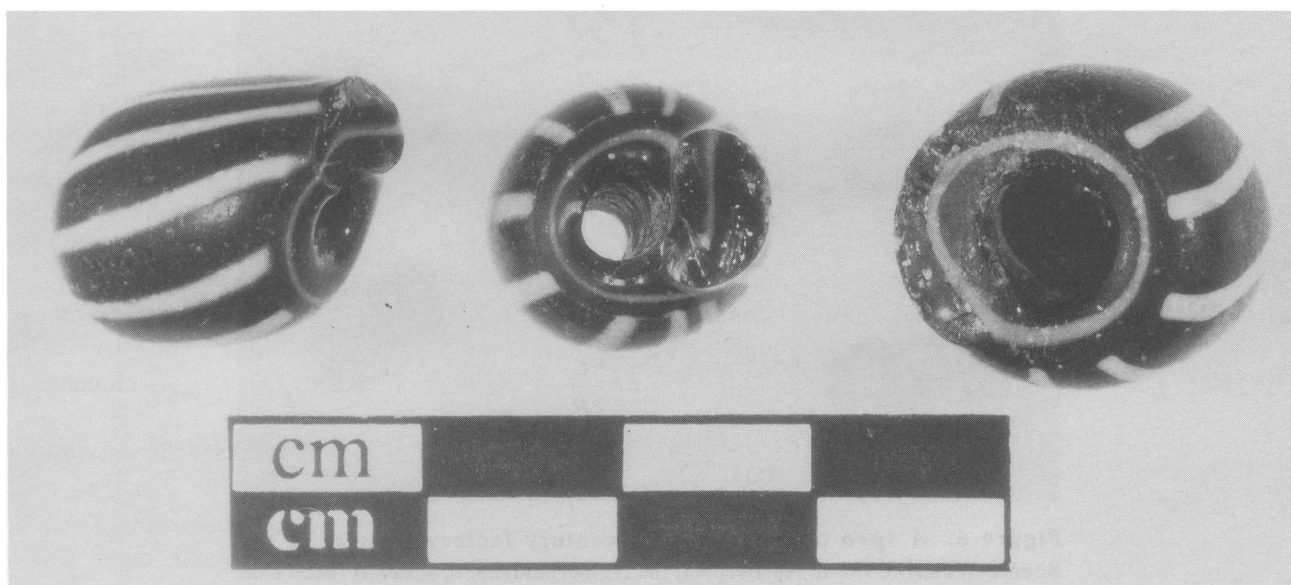
1. Two or, occasionally, three beads fused partly or completely at the ends with the perforations perfectly aligned. In some cases, a bead simply slipped down a tine and fused to the one below it. This is clearly what happened to the specimens illustrated in Fig. 2 (these should not to be confused with beads of *wound* manufacture which also appear in this configuration). However, more often than not, two beads apparently touched but one subsequently pulled away from the other as the spit was manipulated (or, perhaps, they were pushed apart by the worker on periodic inspections), leaving the beads connected by a slight "bridge" (Fig. 3). The fact that a number of such manufacturing errors have been found at various 17th- and 18th-century Indian sites across the eastern United States reveals that they were acceptable to both European entrepreneurs, as well as the Native Peoples they encountered.
2. A distinct broken projection or conchoidal scar, sometimes quite large, on one or (infrequently)



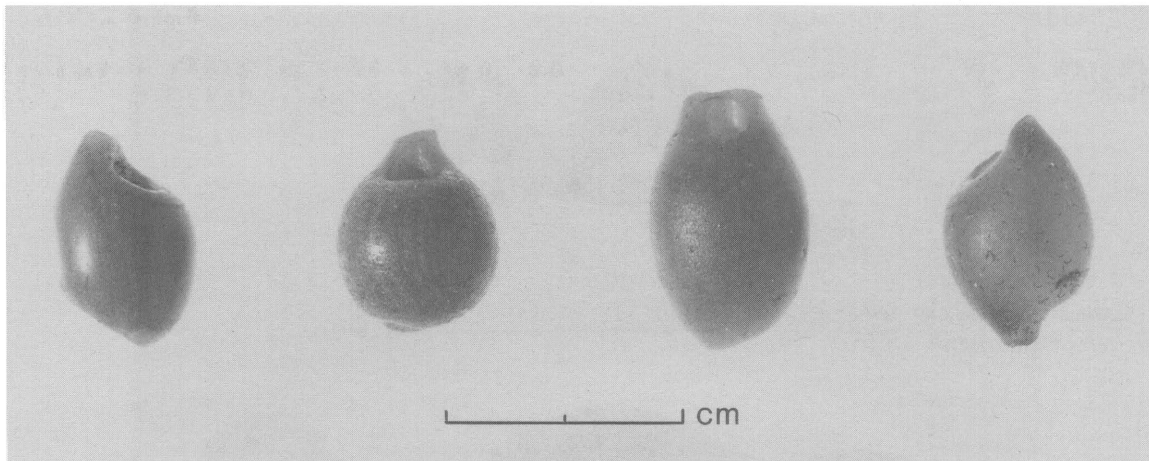
**Figure 3.** Two to three *a speo* beads partially fused at the ends from factory wasters at site Kg10 (1601-1610) in Amsterdam, the Netherlands. It is interesting to note that the left-hand bead of the lower specimen differs in color from its two neighbors (photo by Rock Chan).

both ends of a bead (Figs. 4-5). This marks the spot where two or three beads had partly fused but could be broken apart, either by the manufacturer or the purchaser. Beads

exhibiting these projections are quite common and found on many Indian sites in eastern North America. The projections are not to be confused with those occasionally encountered



**Figure 4.** Very large beads exhibiting blunt broken projections and conchoidal scars on their ends. From the Dutch Hollow (1612-1623) and Power House (1645-1655) sites, New York; Rochester Museum and Science Center (photo by Brian D. Fox).

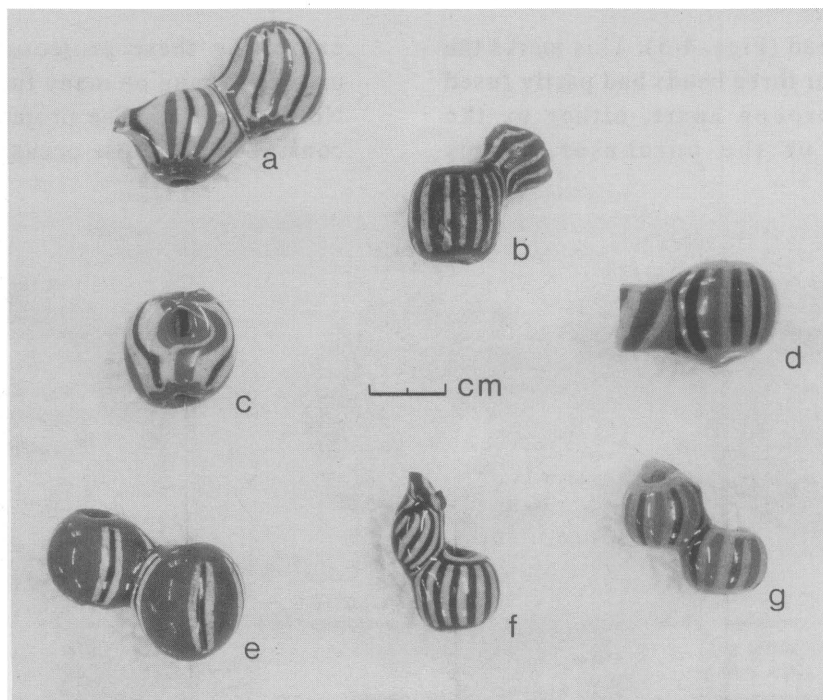


**Figure 5.** Smaller beads with broken projections on one or both (right) ends. Philip Mound, Florida; probably 17th century (photo by Rock Chan).

on the ends of wound beads which represent the end of the glass filament from which the bead was formed.

3. Two beads fused side by side with the perforations parallel to each other (Fig. 6,a,e,g). In this case, two beads on adjacent tines touched

during the heating process and fused. These seem to be restricted to bead manufacturing wasters and were apparently culled from production runs. Occasionally, the beads could be snapped apart, leaving a slightly raised, circular scar on the side (Fig. 7).



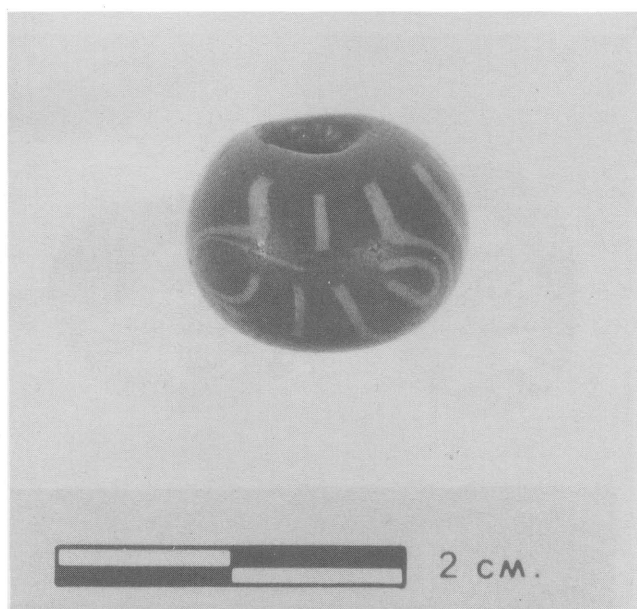
**Figure 6.** *A speo* beads from 17th-century factory wasters at the Boeren-Wetering site in Amsterdam, the Netherlands: a, e, g, beads fused side to side with parallel perforations; b, d, f, distorted beads fused to intact ones; c, bead with a hole in its side. Van der Sleen collection, Amsterdam (photo by K. Karklins).



**Figure 7.** A very large bead with a slightly raised, circular scar on its side. From the Carley site (1635-1650), New York; Rochester Museum and Science Center (photo by Brian D. Fox).

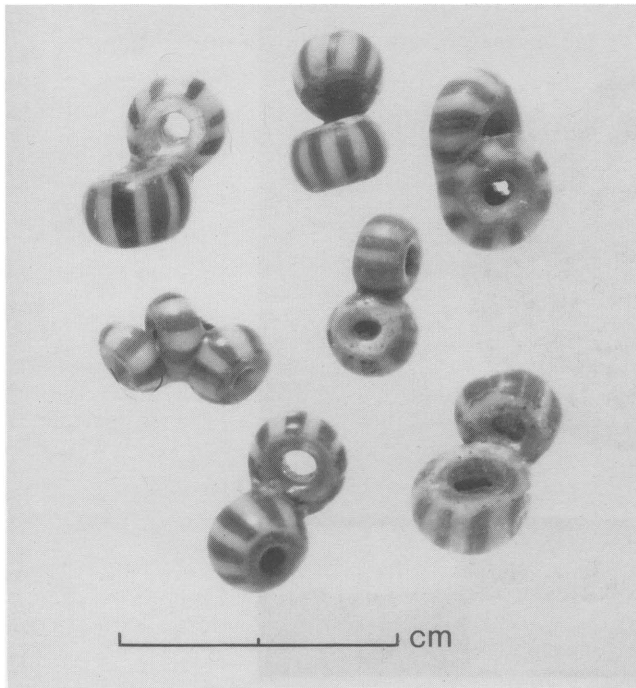
4. Occasionally, two beads on adjacent tines touched but were separated and continued to be rounded in the furnace. Such beads sometimes exhibit a rounded protrusion or some other irregularity on one side (Fig. 6,c), or a distortion of the surface decoration (Fig. 8). They are found both in factory wasters and at Indian sites in small numbers.
5. In a similar configuration, a large malformed bead is fused to the side of a perfect bead (Fig. 6,b,d,f). This may represent an instance where a bead melted off its tine and fell onto a bead on another tine. However, it is also quite possible that these beads are products of the *ferraccia* (pan) method. Beads rounded in this manner are frequently found fused together in factory wasters but the fusing is haphazard and the perforations are rarely parallel (Fig. 9).
6. Lopsided beads where one wall is substantially thicker than the one opposite it and the perforation is sometimes distinctly distorted (Fig. 10). This configuration was apparently caused when the spit ceased to be rotated while the glass was still in a viscid state or was not sufficiently rotated at some point, allowing the beads to sag.

An examination of the beads exhibiting the above characteristics from a wide range of sites, but



**Figure 8.** Bead with distorted stripes. From the Snyder-McClure site (1687-1710), New York; Rochester Museum and Science Center (photo by K. Karklins).





**Figure 9.** Haphazardly fused beads indicative of the *ferraccia* heat-rounding process from factory wasters at site Kg10 (1601-1610) in Amsterdam (photo by Rock Chan).

especially the Seneca sequence at the Rochester Museum and Science Center, reveals that beads with

diameters as small as 3.6 mm were rounded using the *a speo* method.

#### TEMPORAL RANGE OF THE *A SPEO* METHOD

When the *a speo* method began to be used has yet to be determined. However, it was certainly in use by the early 17th century as revealed by historical documentation (Gasparetto 1958:187) and a very large bead with a spit tine in its perforation at site Kg10 (ca. 1601-1610) in Amsterdam (personal observation). This site also produced examples of beads with broken projections at one end and at least one specimen where two large beads were fused side by side with their perforations in a parallel configuration.

A survey of sundry archaeological reports and bead collections reveals that beads exhibiting the *a speo* traits described above occur over much of eastern North America from around 1612 to the 1770s (this is based on specimens found at the Feugle site [ca. 1612-1622], and the Pen [ca. 1720-1779] and Sand Hill [ca. 1750-1770] sites in western New York). It is interesting to note that the large and very large beads that characterize the 1610-1760 period have pretty much faded from the scene by this time (Quimby 1966:83-90), possibly because they had become too costly to



**Figure 10.** Lopsided beads from several 17th-century Seneca sites. The second specimen from the right is an excellent example of a bead that sagged during *a speo* rounding. Rochester Museum and Science Center (photo by Brian D. Fox).

produce. This is also about the time that the large and very large fancy wound beads come on the scene in relative abundance, apparently as a cheaper substitute for the drawn versions. It is likely that the process was extinct by the advent of the rotating-drum method of heat-rounding beads.

## CONCLUSION

The *a speo* method was apparently developed as a more efficient alternative to the pan or *ferraccia* method for heat rounding medium-sized and larger glass beads, though it was also employed to round beads as small as 3.6 mm in diameter.

Archaeological evidence reveals that the process was definitely in use by the early 17th century. It was subsequently commonly employed until around 1760, when the large and very large beads that characterize Quimby's (1966:83-87) Early and Middle Historic periods fell from popularity. If the process continued in use thereafter for beads at the smaller end of the *a speo* size range, it is likely that it did not survive the introduction of the much more efficient rotating-drum method in 1817. Thus, beads that exhibit the characteristics enumerated above may be attributed to the period from around 1600 to 1817. While tighter dates may generally be ascribed to beads of this period on the basis of their other physical attributes — namely shape, color and decoration — the presence of *a speo* characteristics on stylistically nondescript beads or on beads of varieties with extremely long temporal ranges will help to differentiate the earlier examples from the more recent ones.

## ACKNOWLEDGEMENTS

I am indebted to Charles F. Hayes III of the Rochester Museum and Science Center for allowing me to examine the beads in the Seneca sequence collection and for providing photographs of them. My thanks also to The Royal Museum of Fine Arts in Copenhagen, Denmark, for permission to reproduce the van Loo painting, which was initially brought to my attention by Dr. Kenneth E. Kidd. Wiard Krook of the Archaeology Division of the Department of Public Works in Amsterdam was subsequently instrumental in providing initial information on van Loo. Aileen

Ribeiro, Department of the History of Dress, Courtauld Institute of Art, University of London, is thanked for her informative comments regarding the costume of those depicted in the van Loo painting. Last but certainly not least, I am grateful to Jamey D. Allen and Robert H. Brill for a chance to exchange information and ideas concerning the *a speo* technique.

## ENDNOTE

1. Although the painting is presently called "The Glass and Coral Factory," its original title was "*Einer Korallen Machery*" (H. Jönsson 1983:pers. comm.). This effectively translates as "A Glass Bead Factory," the word *Korallen* not meaning "coral" in this instance but "glass bead" (van der Sleen 1967:56).

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**Plate IA.** *Gold-Glass:* Rare spindle-shaped gold-glass bead 4.8 cm long of the Hellenistic period; gold foil applied spirally to blue glass, covered with colorless glass (Israel Museum, Jerusalem [IMJ], no. 77.12.841, Dobkin collection; all photos by Z. Radovan).

**Plate IC.** *Gold-Glass:* Two well-preserved pairs of segmented gold- and silver-glass beads (both Egypt?)(IMJ 93.29.40, gift of Lennie Wolfe, Jerusalem; IMJ 93.26.54); the lower pair is 1.6 cm long.



**Plate IB.** *Gold-Glass:* String of matching gold-glass beads 6-9 mm long, finished individually by hot-working; probably Hellenistic (Egypt?)(IMJ 77.12.455, Dobkin collection).

**Plate ID.** *Gold-Glass:* Gold-glass and other interspersed glass beads (left to right: from Persia(?), private collection, Jerusalem; IMJ 77.12.455, 77.12.687 and 77.12.672, Dobkin collection).







**Plate IIA.** *Gold-Glass:* Stone, glass and gold-glass beads found at En Gedi on the Dead Sea (Tomb 1); late Hellenistic period, ca. early 1st century B.C. (courtesy of the Israel Museum, Jerusalem); the largest bead is 2.5 cm long.

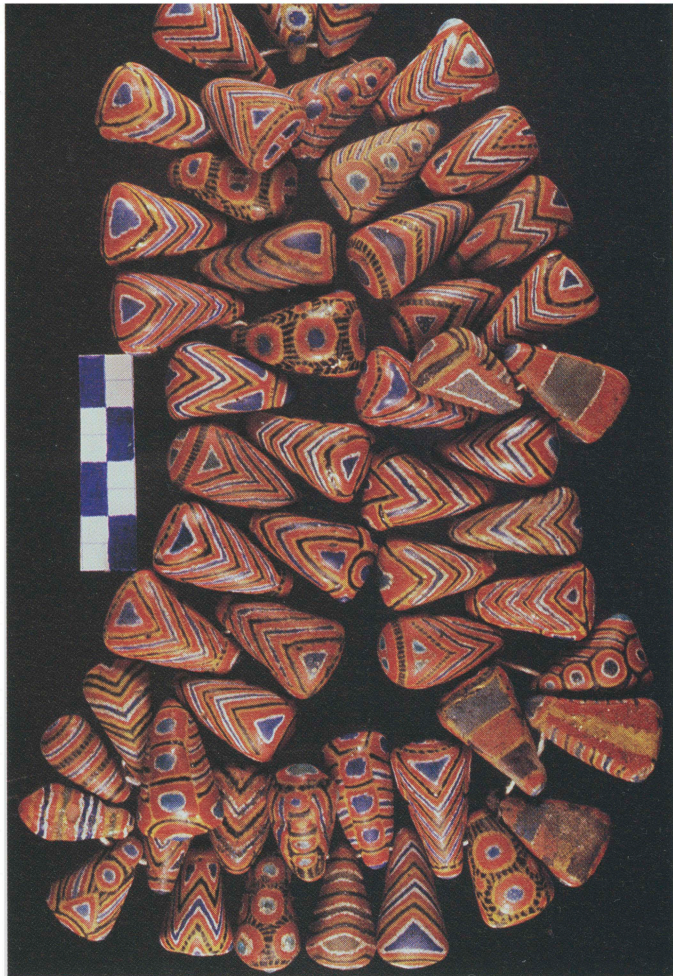
**Plate IIB.** *A Speo:* "The Glass and Coral Factory," by Jacob van Loo (1614-1670)(courtesy of The Royal Museum of Fine Arts, Copenhagen; Inv. no. Sp. 291).







**Plate IIIA.** *Mauritania*: Ancient *nila* beads (all photos by H. Opper).



**Plate IIIB.** *Mauritania*: Polychrome triangular Kiffa beads, probably the most exotic of Mauritanian powdered-glass beads.

**Plate IIIC.** *Mauritania*: Ancient glass beads (left) and similar Kiffa powdered-glass examples (right).



**Plate IIID.** *Mauritania*: Kiffa beads with paste cores (top), and cores formed of "greenheart" beads and bottle-glass (bottom).







**Plate IVA.** *Mauritania:* Powdered-glass beads made in Oualata, Mauritania.



**Plate IVB.** *Mauritania:* Old (left) and new (right) Kiffa beads.



**Plate IVC.** *Lun Bawang:* Rear view of an 11-strand bead cap worn by Mdm. Yamu Pengiran of Ba Kelalan (all photos by H. Munan).



**Plate IVD.** *Lun Bawang:* Belt of yellow *bengin birar* with string spacers and wire fasteners; considered old.





# POWDERED-GLASS BEADS AND BEAD TRADE IN MAURITANIA

Marie-José Opper and Howard Opper

*Artisans in Kiffa and several other towns in southern Mauritania have produced a unique kind of powdered-glass bead for several generations. Commonly called "Kiffa beads," they generally copy the designs and forms of ancient beads, as well as more recent European examples. This article discusses their history, manufacture and relevance in Mauritanian culture. While production of the beads recently ceased for a time, several women have again begun to make them though the new varieties are not as inspiring as their predecessors.*

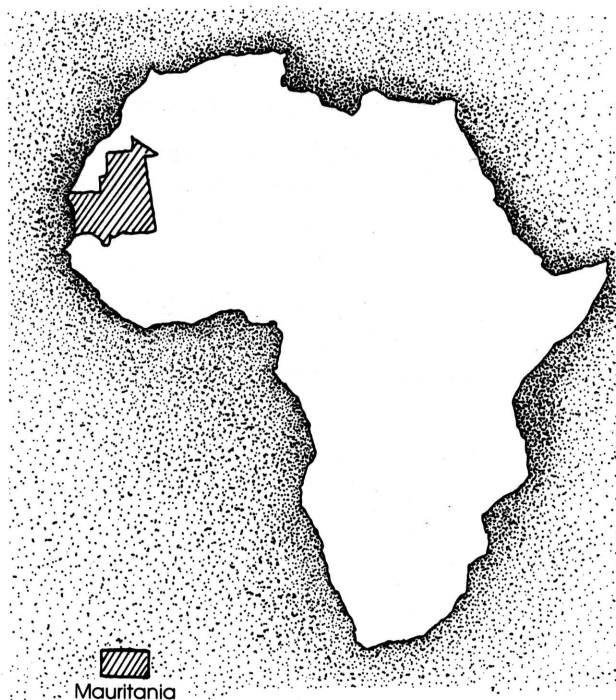
## INTRODUCTION

The Islamic Republic of Mauritania is located in northwest Africa (Fig. 1), bordered on the west by the Atlantic Ocean, on the north by Morocco and Algeria, on the east by Mali, and on the south by Senegal. It is a resource-poor Saharan nation with a population of about 2.3 million, its only notable export being iron ore. Mauritania is one of the poorest countries in the world, with a per-capita income of less than \$500 a year. It is currently somewhat isolated and unknown in the international community, in part caused by troubles in the north where local independence fighters (the Polisario) once used it as a staging ground for incursions into land claimed by Morocco, and also in the south where ethnic strife and competition with the Senegalese for ever-diminishing natural resources has recently caused a great amount of friction. A lack of infrastructure makes Mauritania a challenging place to visit for the rare tourist.

The drought-plagued land within Mauritania's borders was not always as inhospitable as it is now. Intense palaeolithic and neolithic activity has been well documented, and is plainly evidenced by the widespread surface scatter of stone tools and other artifacts, including beads made from shell, stone and ostrich-egg shell (Vernet 1983:395). This indication of prehistoric human occupation attests to a time when the

area had more of a savannah-like topography, when the climate was less harsh, and sufficient flora and fauna existed to support larger human populations.

Important north-south trade routes were already well established before the great cities of the Ghana Empire reached their zenith somewhere between the 8th and 11th centuries. Goods coming from the Near East and North Africa left by caravan from Sijilmassa, Morocco, terminating at the trading towns of southern Mauritania (Elfasi 1988:375). The promise of vast amounts of gold, coming from south of the Senegal River, attracted traders to the area where it was exchanged for salt and other goods, such as glass beads.



**Figure 1.** The location of the Islamic Republic of Mauritania within Africa (all drawings by M-J. Opper).

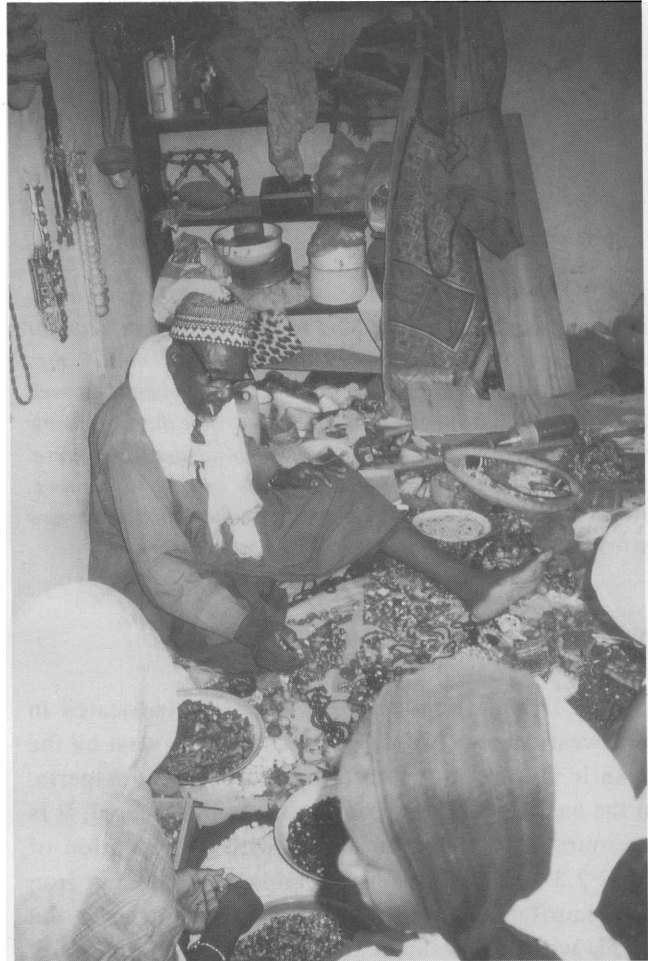


In the past, a much larger number of the inhabitants followed a nomadic way of life. Groups moved from place to place in the desert following seasonal forage for their goats and camels, and to conduct agricultural activities in oases where water was accessible on or near the surface. Today, the widespread traditional nomadic way of life, as well as the days of trading caravans, are things of the past as long-standing drought has caused many people to seek a more sedentary life in existing towns.

### GLASS BEADS, TRADE AND FOLK TALES

The Mauritians' love affair with glass beads began in pre-Islamic times when the great cities of the Ghana Empire flourished. Located along major trade routes, these towns were settled by indigenous pastoral Berbers, Arab traders and local black populations. The barter of gold and, to a lesser extent, slaves for imported goods made this area home to the first of three great Empires that eventually expanded to beyond the Niger River situated further east. Market towns such as Tegdaoust, Kumbi Saleh and Walata, all located in the southern part of Mauritania, became home to traders, craftsmen and scholars.

Although many of the glass bead types recovered at these ancient sites can be assumed to have been imported from glassmaking centers in the Near East and Egypt, there is also compelling evidence for local glass beadmaking. Metallurgy was perfected at an early date within the Ghana Empire, including the use of the lost wax technique for making jewelry (Elfasi 1988:377), thus indicating a technical capacity that easily could have lent itself to glassworking. More specifically, bead molds and glass fragments dating to the 8th century have been discovered at Tegdaoust (Vanacker 1984:49). Among the beads that may have been locally made are small, drawn, monochrome specimens that often display a plano-convex form (flat on one side, rounded on the other). The cobalt blue variety, called *nila* (Pl. IIIA) in Mauritania, is found in great numbers at these sites. The beads are not uniform in size, the perforations are constricted, and most of them are flat on one side. It has recently been suggested that these and similar beads of different colors are actually



**Figure 2.** Bead merchant, Nouakchott market, Mauritania (all photos by H. Opper).

“re-cooked” versions of what are referred to as “Indo-Pacific trade beads,” dating to the same period (Peter Francis, Jr. 1994:pers. comm.). Whether remade or produced from imported glass stock, it would appear that the art of working glass into beads in Mauritania has its roots in very ancient times.

Despite the later importation of European glass trade beads, those found at sites dating to the heyday of the Ghana Empire (8th-11th centuries) are the most cherished by Mauritanian women. Internal trade in these and prehistoric stone beads — such as amazonite, which was mined and worked in Mauritania (Vernet 1983:395) — is both lively and intensive. Every market in Mauritania has at least one bead dealer (Fig. 2) whose merchandise attracts women both rich and poor. The beads are recognized locally as very ancient,

indeed, and stories attest to the reverence and esteem with which they are held.

One of these stories tells us that some 50 or 60 million years ago, before Adam, there existed entire mountains made of colored stones: "It must have been an atomic bomb that turned the world topsy-turvy, thus creating the sand and the dunes where one can now find souvenirs of these wonderfully colored stones.... these are the purest of all beads ..." (Delarozière 1985:72).

Another story gives the name *koust el arf*, or "imitation of the unique," to certain ancient glass beads. According to legend, the secret of making these beads was confided originally to the prophet Souleiman (Solomon). He was given the right to make only one of these beads, which became the mother bead, the noble bead, from which all others would be patterned (Oppen and Oppen 1989a:9).

There is a time-honored custom called *il-chmar* or "imitation" among Mauritanian women. It is a contest of honor among women whereby they compete with each other to establish who is the prettiest and richest as determined by their individual wealth in clothing and adornment, including ancient glass beads. One tale recounting this ceremony tells of a contest between two wealthy women, each one aided by her sister. Among the riches displayed by the sisters were gold, silver, ancient beads, sumptuous clothing, camels and maidservants. One of the women possessed a large chest full of gold jewelry and rare beads. The chest was said to have been so large that a woman could fit into it, and it was renowned throughout the country. Yet another tale mentions a competition between two other women who, to demonstrate their riches, dressed up their seven young and pure maidservants as princesses, resplendently adorned in gold jewelry and rare old beads completely covering their bodies from head to toe (Leriche and Hamidoun 1952:345-346).

According to Mauritanian women, there is undeniably strong magic contained in certain ancient glass beads. They are instrumental in protecting the owner from the evil eye, and many of them also contain curative properties. It is believed that the magic can be more quickly and effectively transmitted to the body by holding the bead under the tongue (Khadi Mint Ouma 1989:pers. comm.). Those beads considered to be the most precious are also placed in

camel butter, then into curdled sugar milk (a national delicacy) to maintain them and enhance their luster (Delarozière 1985:73).

## MAURITANIAN POWDERED-GLASS BEADS

It is most important to keep the preceding information in mind when describing what are now commonly referred to as "Kiffa beads" (Pl. IIIB). Located in the south-central part of the country, the town of Kiffa has been recognized historically as the principal center, though not the only one, for the fabrication of these unique powdered-glass beads (Fig. 3). Noted among the beadmakers in this area are women of the Ehel Sidi Mahmoud tribe (Oppen and Oppen 1989b:33). Appropriately, the town of Kiffa is located near the ruins of Kumbi Saleh, a major medieval city believed by many scholars to have been the capital of the Ghana Empire, and one of many sites where women go to search for ancient treasures.

Using visual comparisons, there is no doubt that Kiffa beads emulate the patterns and colors of ancient glass beads recovered from the area (Pl. IIIC, *see also* back cover). Examples of many of the ancient glass beads recovered and traded in Mauritania have been found at sites throughout what used to be the civilized world. A striking example appears in Callmer's work on 8th-10th-century glass beads in Scandinavia where

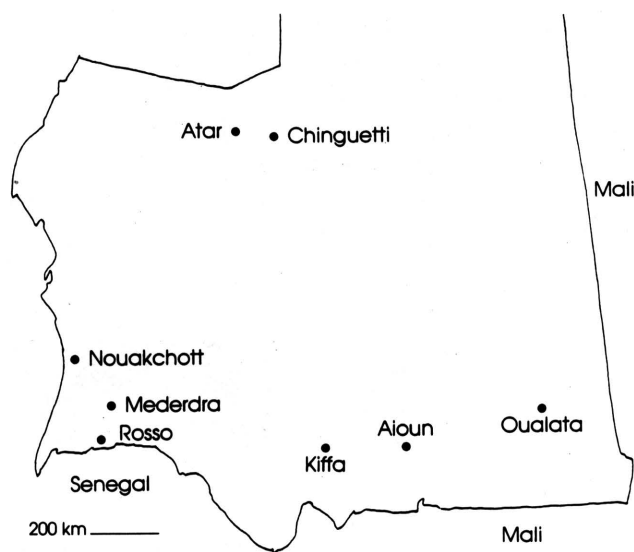
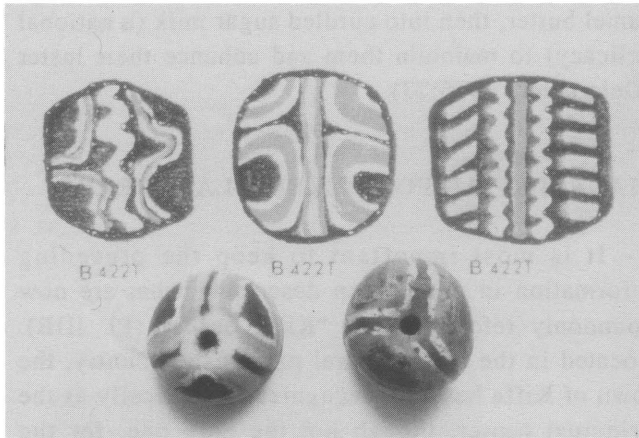


Figure 3. Known centers of powdered-glass beadmaking in Mauritania.

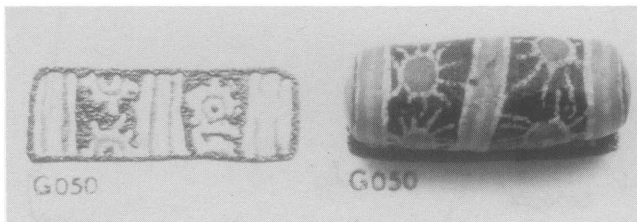


**Figure 4.** An ancient glass bead illustrated by Callmer (1977) which was surely the inspiration for the two similar Kiffa beads below it.

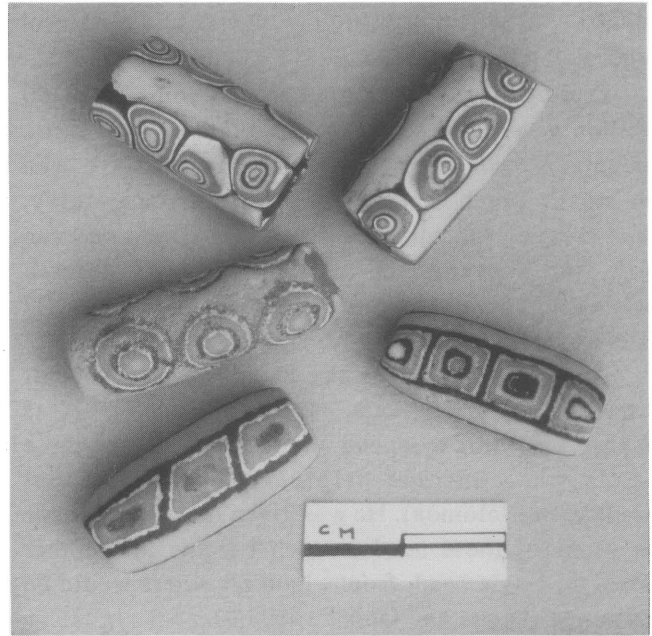
two beads in particular (Callmer 1977:90, 96, color plates II and IV) bear unmistakable likenesses to certain forms and motifs found among many Kiffa beads. One, which is actually of Scandinavian origin, is round with compound symmetrical designs and compound eyes (Fig. 4). The other is found throughout Europe, North Africa and even on routes heading toward China. It is cylindrical, opaque dark blue with yellow-red-white-blue striped ends and middle, and compound blue-yellow-red-white eyes with rectilinear rays, exactly resembling its Kiffa bead counterpart (Fig. 5).

Mauritanian powdered-glass beadmakers have also borrowed from other sources, most notably older Italian millefiori beads. The resemblance between the imported “trade beads” and Kiffa copies is striking (Fig. 6), indicating a high regard for millefiori which goes back several generations.

Kiffa beads were first brought to the attention of the general public by the noted French archaeologist,



**Figure 5.** An ancient glass bead illustrated by Callmer (1977) and its Kiffa powdered-glass equivalent.



**Figure 6.** Two Italian millefiori beads (top) and their Kiffa powdered-glass equivalents (bottom).

Raymond Mauny, in 1949. Subsequent books by Gabus (1976) and Delarozière (1985) shed further light on this remarkable beadmaking industry. Although derived from what is said to be an ancient tradition, fabrication of Kiffa beads probably began sometime in the 19th century, continuing into the 1970s. To our knowledge, no beads of this type have been reported from an archaeological context, nor have there been any reports of Kiffa beads being recovered from ancient sites. Only a handful of Mauritanian women currently carry on the tradition of making powdered-glass beads, and the shapes and techniques have changed somewhat. The industry was actually spread throughout southern Mauritania, and it is said that the technique originally came from Tichitt, a village near the ancient site of Tegdaoust which existed during the 8th-15th centuries (Gabus 1982:121). In the past, Kiffa beads were traditionally made for and worn by lower caste women who could not afford to buy the very expensive ancient beads.

The classical method of making a triangular, polychrome, powdered-glass bead, as reported by Mauny (1949:116-117), demonstrates the mastery of a relatively simple technique, using a minimum of materials. These include pieces of common colored

glass or monochrome beads; a stone mortar and pestle; mollusc shells or other objects serving as containers; stiff grass or twigs; saliva; gum arabic; a tin sheet and can; sand; firewood or charcoal; a razor blade; and a needle.

With these materials, the bead is made thus:

1. Pound any ordinary glass into a fine grayish powder in a stone mortar. This will become the core of the bead upon which colors will be applied (Pl. IIID, top).
2. Select common monochrome glass beads or other glass of the desired colors. Pound this into a fine powder and place each color in its own container.
3. Wash each powder separately with water and allow to dry.
4. Make a support for the future bead by fastening two blades of stiff grass together in the form of a cross (Fig. 7). The longer blade forms the perforation and also acts as a handle during the fabrication process.
5. Moisten a small quantity of the grayish powder formed in step 1 with saliva and, occasionally, a bit of gum arabic. Place the resulting paste onto the grass support and work it into a triangular form.
6. Smooth the paste with a razor blade and let it dry.
7. Use saliva and gum arabic to create pastes of different colors. Apply these to the grayish core using a needle.
8. Place a small amount of cleaned, moistened sand on a thin flat piece of metal (usually from a tin can), and allow it to dry.
9. Prepare a fire and wait until it consists of glowing embers.
10. Delicately place the bead on the bed of dried sand and set it on the embers. Because of this, the side resting on the sand will come out flatter, less brilliant and not as smooth as the rest of the bead.
11. Cover the bead with another piece of metal, such as an empty sardine can, to create an enclosed oven. Cover it with embers.
12. Bake for about 40 minutes, tending the fire to keep it consistently hot. In this way, a beadmaker could produce up to three beads a day.

Variations of this method exist. Beadmakers are increasingly using inexpensive European beads of monochrome glass to serve as the core onto which the other colors and designs are applied. Old trade beads,

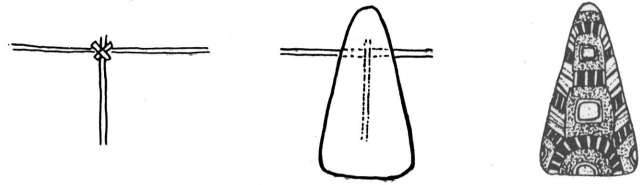


Figure 7. The grass support for a triangular Kiffa bead.

such as compound 18th- or 19th-century "green-hearts" with a brick red exterior and a transparent green core, have also been used on occasion, as have ground and smoothed pieces of bottle glass (Mauny 1949:116)(Pl. IIID, bottom).

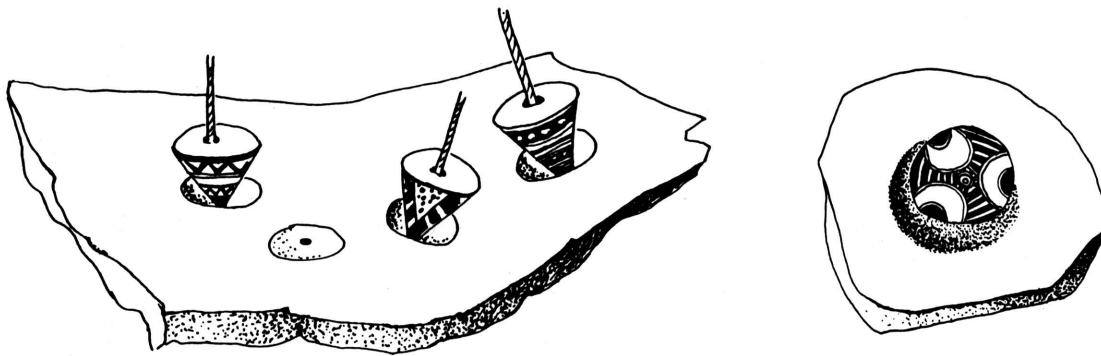
Pottery sherds with appropriately shaped holes drilled into them, very similar to examples excavated at Tegdaoust, have been employed to hold several beads during baking (Fig. 8, left). Certain beadmakers used a smaller sherd with only a single concave depression in it to bake round Kiffa beads. A small ball of decorated powdered-glass paste is placed in the depression (Fig. 8, right) and, as the glass begins to fuse, the ball is removed from the oven and pierced with the aid of a strong sharp needle fashioned from wire. The bead is removed and replaced several times during the process, the beadmaker taking care to cover the oven with embers each time (Gabus 1982:121-124). Once baked and cooled, the bead exhibits a smooth and lustrous appearance.

Erroneously lumped with what are referred to as Kiffa beads is a distinct group of powdered-glass beads (Fig. 9, Pl. IVA) made in the town of Oualata. Inhabited continuously since the medieval period, it is located to the east of Kiffa near the border with Mali (Fig. 3). The modern beadmakers of this town have created a style that is simpler, yet no less striking, than the actual Kiffa style. Made using the same techniques, beads from Oualata are small and always round or cylindrical. They are rarer than Kiffa beads.

## SYMBOLS AND MOTIFS

A little bit of Saharan magic is incorporated into every powdered-glass bead made in Mauritania. Each beadmaker employs her own interpretations of the great themes of life when designing a bead. Every line, dot, circle, square and triangle contains symbolic references to man and his place in the universe. It is said that glass, in and of itself, is a great protector,





**Figure 8.** Pottery sherds with drilled depressions used in the production of multiple (left) and individual (right) Kiffa beads.

warding off evil with its reflective properties (Ouma 1989:pers. comm.).

Triangular Kiffa beads are stylized representations of the eye. Coupled with decorative dots or “eyes,” they provide a double dose of protection against bad luck and evil. Patterns, as well as shapes, can also be symbolically important. For example, the zigzag or chevron pattern of the different colored stripes found on many Kiffa beads indicates the path of running water or “the path of life.” One ethnic group in what is now extreme southern

Morocco uses the chevron pattern to symbolize the path of camel urine, in turn symbolizing fertility (Oppen and Oppen 1989b:34).

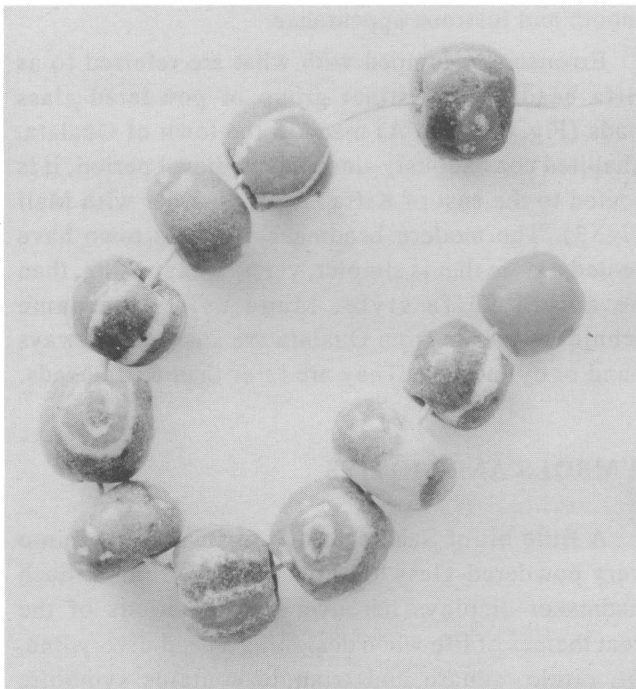
Colors alone on Kiffa beads have the following symbolic meanings:

- gray (core): the molar of a maid servant
- white: a pure young girl
- green: ostrich bile
- yellow: termite eggs, symbol of affability
- blue: benediction of heaven
- red: color of Mediterranean coral (Delarozière 1985:85).

Colors combined with certain geometric forms other than lines symbolize the following:

- light blue circle: the infinite universe
- green circle: hope (of riches)
- red circle: a great love
- yellow circle: the sun
- different colored squares: site chosen for a camp
- small triangles: tents of a camp
- zigzag lines: water
- dot on superior end of bead: the north star
- cross on inferior end of bead: the four rivers of paradise
- large triangle: the grand tent of God, herder of the universe (Delarozière 1985:8).

Given or traded as bringers of joy and tenderness, individual beads are often bestowed with special names by their makers such as: tender (bead), sweet, happy, song, wind, tea foam, clear water, flower of the dunes, turtle shell, bright star and bird song (Delarozière 1985:10; Ouma 1989:pers. comm.). Magic and happiness are the most important non-physical ingredients incorporated into a bead during the fabrication process. Through these beads,



**Figure 9.** Powdered-glass beads made in Oualata, Mauritania.

considered by many to be among the most alluring and beautiful of all known beads, female Mauritanian artists have left for posterity little pieces of their Saharan heritage.

## CURRENT REFLECTIONS

It was around the end of the 1980s that Kiffa beads became highly desirable collector's items outside Mauritania. As this wave of popularity grew, more and more beads began to appear for sale in the U.S., Europe and Japan. Most of them were brought out of Mauritania, one by one, by African dealers, although several full strands have appeared over the years. Prices for these beads have skyrocketed to the point where a polychrome triangular specimen (seemingly the type most sought by collectors) in excellent condition can fetch up to \$60 U.S. Because of the beauty and rarity of these beads, and because the number produced is relatively small, it can be assumed that the older classical forms will continue to realize relatively high prices in the foreseeable future.

As far back as the 1970s, Gabus (1976:52) bemoaned the fact that he was interviewing women who were among the last of the great powdered-glass beadmakers of Mauritania. Until just recently it appeared that no new apprentices were learning the technique from an aging generation of artists, and that working powdered glass was fast becoming a dying art form (It should be remembered that Kiffa beads represent an industry uniquely internal to Mauritania, and that the style was beginning to fall out of favor at the time when their popularity was growing elsewhere in the world).

However, undisputed evidence points to a revival of the powdered-glass technique in Mauritania over the past year or so. "New" Kiffa beads (Pl. IVB) have mysteriously begun to appear on the international market. These are markedly different in appearance from the older ones, indicating the use of less-perfected techniques by beadmakers whose experience is not as profound as their predecessors. An examination of the new beads, as well as reports from dealers and collectors alike, reveals that they do not meet the standards of beauty and perfection that collectors have come to expect. The surfaces of the new beads are often mottled and lumpy, and the colors are not nearly as vibrant and striking as those of the

older ones. The minute attention to detail is lacking, and the flow of forms and colors is not nearly as inspiring.

It can now be reported that a newly revived group of six beadmakers (one is experienced, the other five are apprentices), realizing the potential for external trade and profit, is currently working together in the town of Kiffa, producing beads for sale outside the country. This "cooperative" was started by and is currently being managed by a non-Mauritanian entrepreneur/bead enthusiast residing in Senegal. A strand of 20 newly made round beads was recently offered for sale in Dakar for \$275 (Kirk Stanfield 1994:pers. comm.).

In addition to the new powdered-glass beads now being made in Kiffa, others of even lesser quality have been observed coming from Mali. It is altogether possible that beads are being made in this neighboring country as a branch of the Ehel Sidi Mahmoud tribe, originally from Kiffa and known for its beadmakers, is situated in western Mali (Gabus 1982:121). Most, if not all, examples of this type are small, round and even "lumpier" and less appealing than those being made in Kiffa.

This new evidence points to the revival of a unique form of self expression, this time for monetary rather than personal reasons. Whether or not this for-profit approach will influence the amount of love and magic woven into each bead remains to be seen.

## CONCLUSION

The powdered-glass technique of making beads in West Africa is not unique to Mauritania. Both Nigeria and Ghana also boast similar industries. As is the case in Mauritania, recent archaeological evidence points to current practices in the region being based on traditions that are many hundreds of years old, raising the possibility that Mauritanian powdered-glass beadmaking is a recently revived activity. Historical and technical similarities among the different regional industries are compelling enough to suggest that powdered-glass beadmaking is an ancient and widespread art. Only intensive systematic research will reveal if there is a common heritage, and pinpoint the time when glass beadmaking actually began in Mauritania and, more generally, in West Africa.

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# LUN BAWANG BEADS

Heidi Munan

*The Lun Bawang and related peoples of east Sarawak, west Sabah and Brunei have a long tradition of using beads for personal ornamentation and as value objects. They share in the general Borneo bead heritage, but follow their own tastes and fashions. Some Lun Bawang have started reproducing their favorite opaque beads from clay to sell as well as to wear on informal occasions. This new cottage industry brings a satisfactory income to the beadmakers, and helps to preserve their heirloom property.*

## THE LUN BAWANG

### Their Name

The Lun Bawang of Sarawak were referred to as "Murut" in the past, this being "... a name given by the people of the coast to any upriver heathen race, whether ethnologically the same or not" (Pollard 1933:139). Elsewhere in Borneo, "Dayak" was applied in an equally haphazard fashion. In older anthropological texts, confusion reigns; there *are* a people called Murut who live in the western portion of Sarawak's neighbor, Sabah. (There was never any confusion for the bead researcher; until quite recently the "Sabah Murut" wore different beads.)

As recently as 1972, a then-retired curator of the Sarawak Museum referred to the people settled in various areas of Lawas and Limbang between the headwaters of the Trusan and Limbang rivers as the "Muruts;" a group "larger than any other racial group of people in the area today" (Sandin 1972:50). The Lun Bawang, the Lun Dayeh (upriver) and the Lun Lod (downriver) live in adjacent regions of Sarawak, Sabah and Brunei. One early writer linked the Kelabit and Lun Bawang (or Murut) on sartorial terms: "the short skirt and bead headdress are common to both"

(Pollard 1935:225). J.B. Crain (1978:124ff.) prefers "Lun Dayeh" ("we people of the interior"), generally used in Sabah, to cover not only Lun Bawang, Lun Dayeh and Lun Lod, but also the Kelabit and related people of central Borneo.

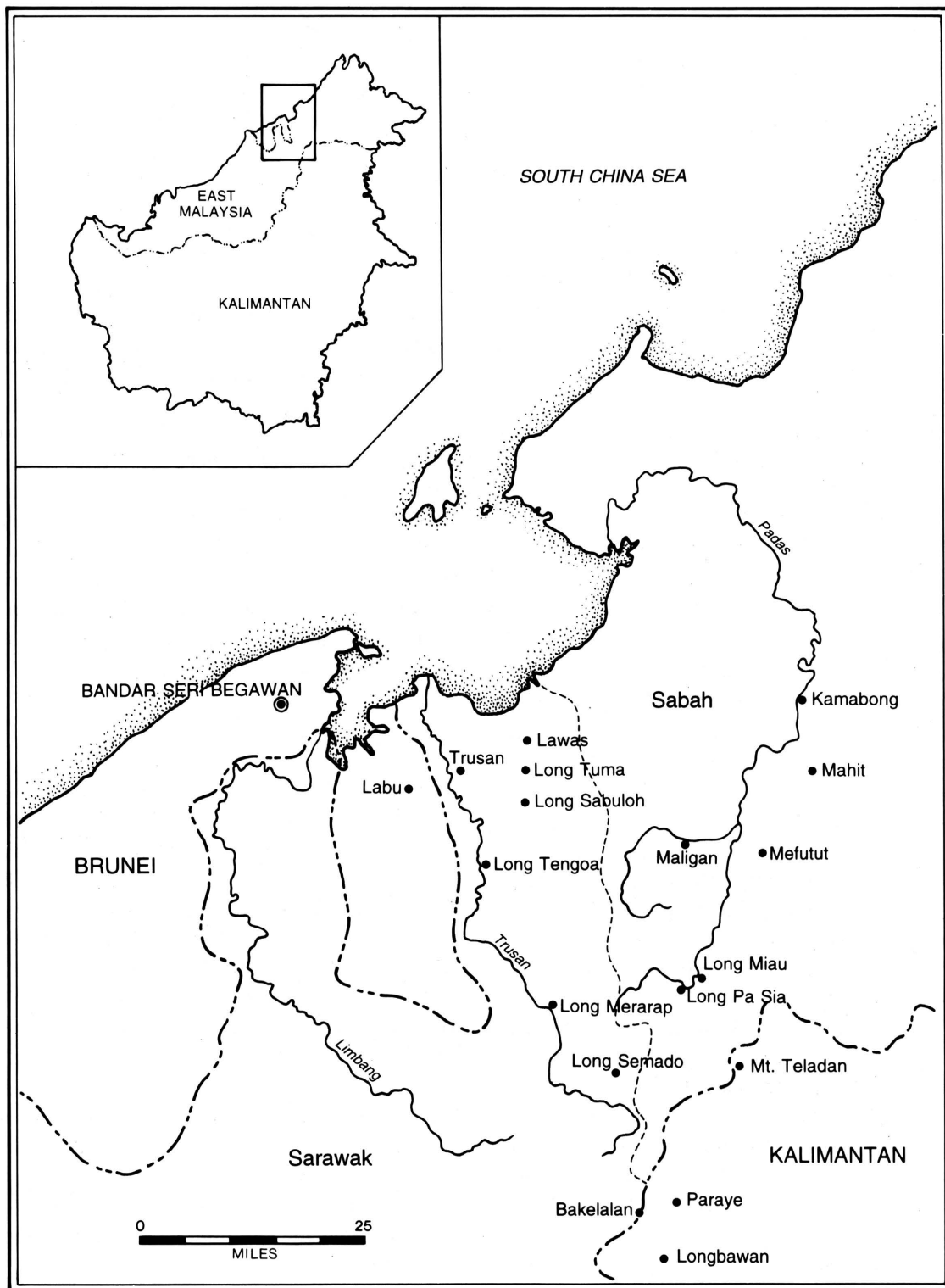
"Lun Bawang", now generally used in Sarawak, means "people of the land" or "people of this place." It is in its way a question-begging term, like "person of the house," implying permanency of occupation and undisputed property status. In this paper, *Lun Bawang* refers to the people living in Sarawak who call themselves thus; *Lun Dayeh* to their fellows in Sabah, Brunei and Kalimantan. "Muruts" in quotation marks is used when quoting historical sources which refer to the same people.

### Their Territory

The majority of the people on the island of Borneo who call themselves Lun Bawang live in the Lawas District of the Limbang Division of Sarawak and in the Temburong District of Brunei (Fig. 1). Their oral tradition, confirmed by approximately 200 years of recorded history, indicates that they originated in the central Borneo highlands which now lie in the Indonesian part of Kalimantan where the bulk of this group, variously called Lun Bawang or Lun Dayeh, still lives.

Sarawak's Lun Bawang are aware of their origins and maintain contact with their relations to the south. There is much pedestrian and motorcycle traffic across the shallow watershed; consumer goods from Tarakan on the Kalimantan coast find their way into the highlands of Sarawak and Sabah by this route.





**Figure 1.** Map showing the principal settlements of the Lun Bawang in East Malaysia, Brunei and East Kalimantan (drawing by Carol Pillar).

## Their History

In the last century, the Lun Bawang were known throughout the highlands and down to Brunei Bay as fearless warriors, raiders and headhunters. Mountain lore and physical stamina gave them the edge over enemies from the lowlands. As they spread down river towards the sea, they learned to handle boats but are not expert sailors.

The Rajah of Sarawak acquired the Trusan district in 1885. A fort was built, and a few Chinese and Malay traders' shops sprang up in its shelter. Soon there was law and order in the Trusan, at least within firing distance of the fort. Ulu Trusan was another story. Here feuds were carried on as usual during the "open season" between rice harvest and planting. It took several punitive expeditions to subdue the more reckless of the Lun Bawang leaders, among them Okong, Dayong and Dawat Tubu.

The Lawas district reports of the 1920s contain depressing entries: disease, drunkenness and population decline. The observation of omens and portents at the peak agricultural seasons caused food shortages. A smallpox epidemic wiped out half the Lun Bawang. Survivors grabbed such children as looked uninfected and took to the jungle, abandoning the dead and dying.<sup>1</sup> Christian missionaries who entered the region were told by the civil authorities to concentrate their efforts on the more worthwhile heathens and to leave the moribund "Murut" to their fate.

How could warriors who had threatened Brunei sink to near-extinction within a few decades? Leadership in the old days depended partly on hereditary status and partly on personal achievement. Besides the traditional qualities of wisdom, legal knowledge and persuasive oratory, a leader needed sufficient wealth for display and hospitality, and to raise and provision the labor force needed to make the memorials connected with aristocratic mourning (Pollard 1935). This wealth could be obtained by inheritance, by trading or by raiding; the latter offered the extra advantage of procuring head trophies and/or slaves, both necessary adjuncts to aristocratic prestige (Datan 1989:149).

The Rajah's punitive expeditions aimed at destroying the main leaders' fighting power. This they did, and subverted the leaders' authority in the process. A Lun Bawang chief had to ratify his position

from time to time. Once the main venues for such re-enablement had been cut off, he no longer led. People respected him as the descendant of worthy lineage, but his executive power, and with it the center of society, had collapsed.

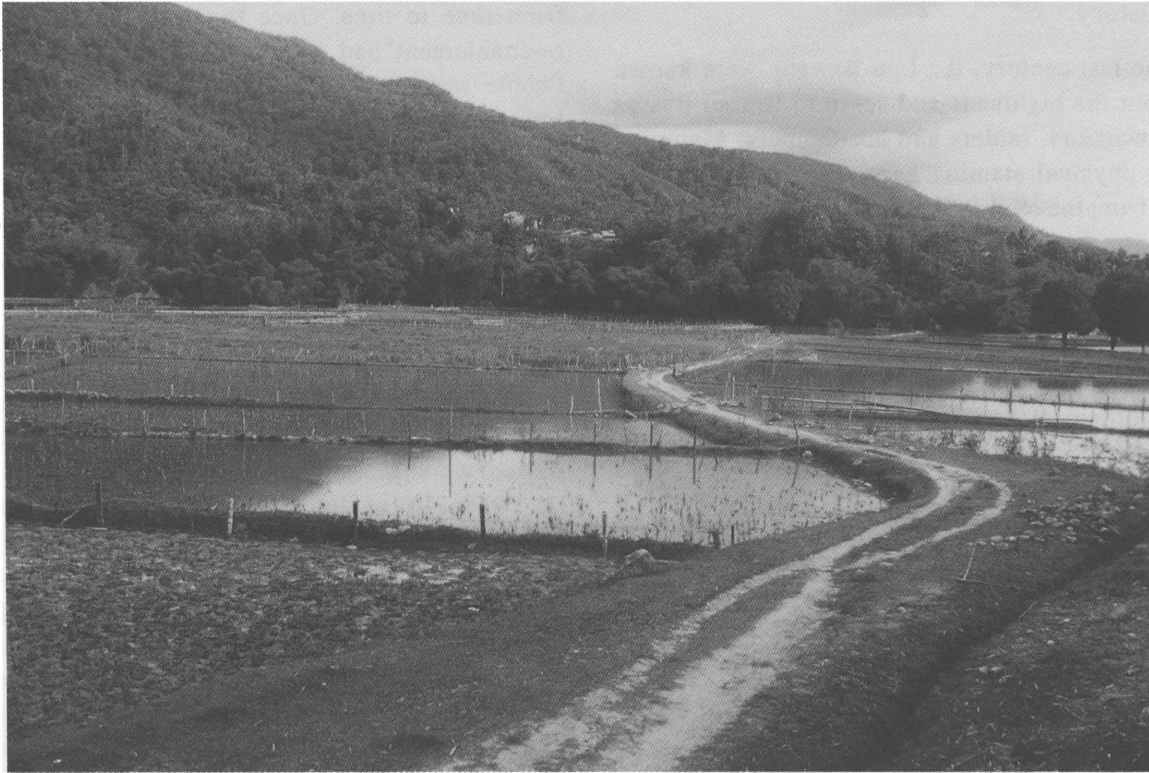
But the Lun Bawang persevered. The majority embraced Christianity in the late 1930s. They preserved such of their old customs as were seen to be compatible with their new way of life; the leaders of old often became the religious teachers and pastors. Formal education opened a way for industrious and gifted persons from the lower classes to rise in status. When Europeans (including foreign missionaries) in Borneo were interned by the invading Japanese forces in 1942, local leaders kept the Lun Bawang community and church together during the trying time of war.

The war hardly touched the uplands, except that imported commodities became scarce. In September of 1945, 600 Japanese soldiers moved upriver and inland, intending to cross into Indonesian Borneo. They did not know that the highlands were a center of the Allied Z Force, assisted by enthusiastic local guerillas who harassed the Japanese mercilessly in the inhospitable terrain. The surviving Japanese surrendered on 30 October 1945, beside a tumbledown farm hut in the rice fields of Ba Kelalan. And that was the end of the war in the highlands.

## Their Society, Culture and Economy

The present concern is with the people of the Lawas District of Sarawak who call themselves Lun Bawang. A considerable number of them live in the township of Lawas and elsewhere "downriver," engaging in business or paid employment, and living country-town lifestyles. Almost all of them are in regular contact with their villages, either along the Lawas and Trusan rivers, or in the highlands.

The terms "highlands" and "lowlands" mean a lot in this context. Central Borneo's high plateau ends in a rugged edge; rivers roar through rapids on their fall to the undulating lowlands. Before aviation reached the island, the highlands lay days of trekking from the lowlands. A center of Lun Bawang population, Ba Kelalan (Fig. 2) on the upper Trusan River was a tough week's walk from the downriver town of Lawas. Now the journey is done in one rough day by jeep, on



**Figure 2.** The Lun Bawang heartland, the fertile upland plains of Ba Kelalan (photo by H. Munan).

logging roads which cut ever deeper into the interior. But the civilized way to travel to and from this fertile, isolated, highland valley is by light plane.

The Lun Bawang/Lun Dayeh of the uplands and lowlands share a mutually intelligible language. They have a common culture of rice farming, livestock rearing and strong commercial interests. All their heirloom goods have come to them by way of trade; today's Lun Bawang take to modern business in a very competent way.

Lun Bawang society used to be loosely stratified and it still is to some extent. It may be compared to English country society of the 18th-19th centuries — there was never any question as to who were “gentry” and who were not, but there was ample room for energy and talent to rise upward.

The main strata in Lun Bawang society were called the *lun do* (“people of quality”), the *lun tap-tap* (“ordinary people”) and the *demulun* (slaves). Uneasily fitted between the latter two were the *lun petabpar* (“those who work for others”), poor farmers who eked out their meager incomes by doing day labor for the rich.

Much was expected of the “good” classes by way of leadership and example; the actual rulers (*lun mebala* or “illustrious people”) sprang from their ranks. Individual leaders needed to be successful and sufficiently rich in goods and buffalos to provision big feasts, equip raiding parties, lead migrations or longhouse building. Upper-class marriages involved a complicated exchange of valuable prestige objects like heirlooms (antique jars [Fig. 3], beads and weapons), slaves, livestock and money (Crain 1978). Today's headman, appointed by the government, is usually drawn from among the leading families, but this is not automatic.

The middle classes farmed on their own account. It was the aim of each family to be self-sufficient in rice. A chief sometimes had to adjudicate disputes about access to the most fertile land to be cleared for the year's rice crop. In areas of swidden cultivation, the question of land ownership did not arise as strongly as it did in places where land could be banded and irrigated, and farmed year after year.

Religious and civil laws have abolished slavery in Sarawak. Today it is not only rude but actionable to refer to anyone's slave descent. The Lun Bawang's



**Figure 3.** Family group at Rumah Kurus, near Long Tuma (lowlands), posing with a valuable heirloom jar, ca. 1947 (courtesy of the Sarawak Museum). Note the necklaces and bead caps of the women.

slaves were nearly always war captives who became absorbed into the master community's very lowest class. They had to perform a certain amount of *corvée* labor, and submit to being traded off as part of a high-class dowry payment on occasion.

The Lun Bawang, like most Borneo people, have a system of agricultural labor pooling and labor exchange. This is not a communal labor system (neither is a longhouse communal living — private property is well demarcated and respected): each family contributes to the pool and is entitled to the relevant number of man-days in turn. Sometimes such obligations are paid off in kind, usually unhusked rice, but workday for workday is the norm. The labor pool is needed for the heavy farming tasks like

clearing/burning, planting and harvesting. Weeding is done mostly by the women.

Some rural Lun Bawang are swidden farmers, others cultivate irrigated rice fields. Swiddens are hillsides which need to be cleared of jungle cover, burned off and planted for one or, at the most, two seasons. Irrigated rice fields, painstakingly bunded and watered for weed control and optimum growth of the precious crop, permit a community to settle down for the long term. The question of land ownership then arises, and with it more complex problems of inheritance.

The Lun Bawang used to live in longhouses with separate family rooms, but nearly all occupy single-family houses now (one purpose of the longhouse was defense). A few features of the old style have been retained, however, especially in the kitchen. Though kerosene and gas may be used for cooking, most houses still have a large floor-level hearth. A slight haze of smoke pervades the kitchen; it discourages insects, and billows upwards slowly to escape through the rafters. Near the hearth is a narrow slit window, closed by a sliding or hinged plank, which helps to regulate draft; it also allows the womenfolk to keep an eye on what is going on outside.

The Lun Bawang use such modern facilities as are available. Larger villages have electric power produced by a generator, usually run by the Sarawak government. Gravity-fed water supplies are the norm in their hilly, well-watered home terrain. Radios and TV sets, dish antennae to improve reception (bought in Indonesian Borneo where they are cheaper) keep the villagers in touch with the world. The Malaysia Airline's Rural Air Services are well patronized; if there are empty seats on the return flight to town they are occupied by sacks of rice.

Rice trade is an integral part of today's Lun Bawang economy. The delicately flavored Highland Rice is much esteemed "downriver." Local farmers and their Indonesian cousins bring the grain to highland villages that have airstrips. Here a local entrepreneur buys it and then sells it to shops in the coastal towns.

Air-freighting is a new aspect; the trade itself is not, as I learned in a Ba Kelalan kitchen. A troop of sellers arrived in the early afternoon, each laden with a tall back basket full of rice. The group was hospitably entertained by the buyer's wife and offered



houseroom for an overnight stay. The rice was measured with a *gantang*, a container holding about 4 liters. For each tinful scooped from the basket to the storage containers, a pinch of rice was placed on the mat. When the basket was empty, the tally of mounds established the count. "This is an old method, and a good one!" buyer and seller agreed; "if we chat while we're measuring we might lose count" (pers. obs.: Tagal Paran's house, Ba Kalalang).

The social life of a Lun Bawang village centers around the church which is not only a place of worship, but a meeting place for young and old alike. Once notorious slave-owners and feared headhunters, the Lun Bawang turned over a completely new leaf. The leadership frowns on smoking, drinking and all forms of impure behavior. Great value is laid on education.

## LUN BAWANG BEADS

### Use and Value

Every Lun Bawang informant stated utility as the principal purpose for wearing beads. The bead cap held the hair in place; a woman who did not have a cap always wore a headband or a scrap of cloth tied around her head in the old days. The bead belt held up the skirt (*sarong*); there were rattan, brass and silver substitutes available for this purpose as well. The bead necklaces and bracelets? They show social and economic status, and are decorative.

Do beads have a religious/spiritual meaning or power? This is a difficult question for a staunch evangelical Christian to answer. Most informants listed the purpose of beads in this order: 1) practical utility, 2) status marker, 3) value object and 4) personal ornament. The fact that the Christian missionaries, European or Indonesian, never disapproved of the wearing and use of beads sustains this position; they would have endeavored to root out "heathen practices" had they suspected the beads were used for such purposes (Munan 1991:186-187).

Beads used to be the medium for paying the traditional healer whose function was part medical and part religious. He or she was given beads before a healing ceremony started to "protect the soul," and more beads were presented as a fee when the patient recovered. Beads were sometimes buried with the

dead, but it does not appear that this was meant as provision for the underworld, as will be discussed below.

In a song called *Nawar Ada'* — formerly associated with the agricultural cycle — a female rice spirit was exhorted to dress nicely: "... [wear] a belt of yellow beads, a necklace of long carnelian beads, a cap of antique yellow beads, bring an umbrella, bring a straw hat..." (Deegan 1970:271-272). Thus attired did she work beneficent magic upon the growing crops.

Beads showed a person's status in a society not given to elaborate, ceremonial personal titles and honorifics. The Lun Bawang use first names rather more freely than some of their neighbors. Members of the leading families live, work and dress like any other villager; a stranger could, however, identify them by their ornaments.

Beads are value objects to most East Sarawak people. They are acquired in times of prosperity and sold in times of need, though Lun Bawang of the upper class feel strongly that heirloom beads should never be sold. One accepted reason for disposing of beads is to provision a festival. A Kelabit lady who found it difficult to assess the value of a bead cap (*pata*, also spelled *peta*) in currency stated it unhesitatingly in buffalos: five head (Munan-Oettli 1983:90). A Lun Bawang lady suggested the following rates: for a cherry-sized yellow bead used to make caps, ten *gantang* (ca. 40 liters) of unhusked rice; for 50 long thin orange beads or ten strands of yellow belt beads, one buffalo. However, it was pointed out that few people sell and buy goods with beads nowadays; a person might sell beads to buy other desired items with the money obtained.

After the upheavals of this century, when the Lun Bawang teetered on the brink of extinction and then drastically changed their lifestyle, traditional values — including the bead culture — were questioned. Money replaced beads as a medium of exchange; gold became a preferred prestige ornament/capital investment. In addition to this, large numbers of beads were lost. During the epidemics, when longhouses were abandoned, no survivor dared to return to an empty, ghost-ridden ruin to poke around for treasure among the unburied dead. In the violent final weeks of World War II, a number of longhouses in the upper Trusan were burned to the ground. With these

structures perished not only a lifestyle (villages of separate houses were built instead), but large amounts of heirloom property as well.

In the aftermath of war, immediate material problems relegated heritage preservation to a very low priority. People who had beads hardly wore them. Beads were sold for the fulfilment of more pressing needs; the seller noting that prices had dropped severely. A few far-sighted wealthy women bought top-quality beads very cheaply at that time. They were a "dead investment" for 20 years. However, since the 1970s, when local and foreign collectors entered the market, they have steadily risen in value.

In the past, Lun Bawang ladies wore a bead cap or some other form of headband to keep their hair in place; nowadays, short hairstyles are very common, and most of the ladies who keep their hair long coil it into a chignon. The bead belt is no longer necessary. Even if a lady wears a *sarong*, it is made of fine Indonesian cotton. The old Lun Bawang skirts of bark cloth were rather stiff and would not stay up without a belt of some kind.

A conservative upper-class Lun Bawang lady living in a village may wear a string or two of beads as she goes about her housework. She does not wear her bead cap for everyday use, though she may put it on for visiting or receiving visitors. For an outdoor function, a flat conical hat coiled from palm-root fiber is worn over the cap.

Beads may be bought and sold freely, but the normal "respectable" way to obtain beads is by inheritance or as dowry. A daughter is provided with valuables before marriage: "to give her respect among her new in-laws. She can wear the beads when she likes, or she can use them to buy things for herself or her family" (Mdm. Yamu Pengiran, Ba Kalalang: pers. comm.). Things to buy include other beads or ornaments, food in times of scarcity (though this reflects on her husband's ability as a provider) or, in the past, land.

Beads can be given to a daughter-in-law. Such a gift is usually made after the marriage, as a token of good family relationships. The younger woman does not expect it; the elder is not obliged to give it. Disposal of beads, to a relative or friend, is entirely at the owner's discretion; men refrain from meddling in what is women's business.



**Figure 4.** A group of Lun Bawang women from Ba Belawit, Kalimantan (Indonesian Borneo, highlands), ca. 1947 (courtesy of the Sarawak Museum). They wear bead caps and multi-strand necklaces.

Beads pass from mother to daughter, not only as dowry but also as inheritance. The mourning mother of a daughter (more rarely a son) who died unmarried may put some beads in her child's coffin, but this is unusual. Normally beads are shared after the mother's death. An owner is not obliged to bequeath beads to her daughters, or to other relatives even if she was childless and they cared for her in her declining days. Childless women sometimes sell their beads; if no instructions were given during her lifetime, beads may be buried with the owner after her death.

Most Lun Bawang disapprove of burying beads and valuables with the dead. Nobody disputes the fact that the beads are the property of the deceased; she has a right to keep them. But, in this wicked age, a tomb



**Figure 5.** Mdm. Yamu Pengiran of Ba Kelalan wearing a valuable 11-strand *pata* (bead cap) and two multi-strand necklaces (photo by H. Munan).

known to contain treasures may not be safe from sacrilegious antique hunters. Grave robberies have occurred in many parts of Sarawak. The response has been interesting: I heard of one case of a wealthy woman who requested that her beads be pounded to grit and then buried with her — and so they were! (Mdm. Budi Tadam, Long Tuma: pers. comm.).

### Beaded Objects

Lun Bawang, Lun Dayeh, Murut and Kelabit ladies share a bead fashion that is not found elsewhere in Sarawak. They wear caps (*pata*) composed entirely of beads. These caps, formed of beads strung on creeper or pineapple fiber without any rattan framework or support, used to be worn every day by ladies of the upper classes (Fig. 4). The *pata* is a status symbol. In these democratic days, nobody will say that a lower-class person would have been prevented from wearing one in the past. The question probably

did not arise; no lower-class or slave woman could have afforded such finery.

A Lun Bawang bead cap consists of six to eight strands of beads (a valuable specimen may be as wide as ten strands [Fig. 5]) which decrease in length towards the top to fit the size of the head. The top is open so that the wearer can twist her hair outside the hat and tuck it in through the hole (Pl. IVC). The front section of the cap is made of spherical opaque yellow beads 5-7 mm in diameter. The side panels are constructed of black beads, about the same size, spotted with white “eyes.” The rear portion (Fig. 6) may be made of any less-important beads: spherical opaque turquoise and spherical opaque brick-red beads of glass, and cylindrical white shell beads.

Besides the *pata*, Lun Bawang ladies wear massed necklaces, and belts consisting of many strands of small glass beads (*bengin*) (Pl. IVD). Favorite beads for both are yellow, turquoise, pale orange, green or blue opaque monochromes of the type used for necklace type b (*see below*). Some valuable belts have less strands but contain more ancient and respected beads, including a black barrel-shaped bead decorated with longitudinal stripes of light yellow, green, white or pink, which has been nicknamed the “pyjama bead” by some Sarawak collectors. The individual strands of a belt are kept in order by spacers. The traditionally preferred material for this purpose was twisted brass wire, but other types of wire or covered cable are also used (perforated hardwood spacers are sometimes used though they are not common). Some craftsmen make spacers of the threading string. Now very rare is a roughly shaped round disc of carnelian, 5-8 cm in diameter, with two or even three longitudinal perforations. This disc is usually at the end of the belt, before the two or three strings pass through a few large single beads adjacent to the fastener.

The Lun Bawang bead collections I was permitted to inspect contain several bead belts and necklaces which contain similar beads, and are similarly constructed. There are three main types of necklaces:

- a. A single strand of individually valuable beads, including Venetian lampworked beads, small “Amsterdam” chevrons and the very highly prized, longish, yellow *let alai* (Pls. VA-VB). If Lun Bawang men wear bead necklaces, they are of the one-strand type, usually of the heaviest beads



**Figure 6.** The back portion of a 7-strand *pata*. Yellow *alet birar mon* beads comprise the bulk of the cap. Other beads include white monochromes, black specimens decorated with various dark red and white elements, and long, faceted, imitation carnelian beads (photo by H. Munan).

available. Men seem to have worn more beads in the past. The fashion was practically discontinued, but is now being taken up again.

- b. Single-strand necklaces consisting entirely of one type of bead (Pl. VA), often the decorated, yellow *let alai barit* or the long, thin, orange *let tulang*. In this type of ornament the first and last bead, where the string is fastened, may be a black “fake chevron.”
- c. Necklaces composed of six or more strands of fine (rice-grain to peanut-sized) monochrome glass beads (Pl. VC). Favorite colors are yellow, turquoise, brick red and coral red, all opaque, of wound as well as drawn manufacture. It is possible to achieve the massed effect by wearing a number of the fine beads described for necklace type b above. The beads may also be strung in multiple strands but joined at the back; 7.6 cm of either end of the necklace is composed of larger beads through which all the strings pass. This makes fitting the fastening, a loop to catch the last bead, easier. Wire hooks and standard jeweller’s

findings are also used, or whatever the stringer has at hand.

Bead necklaces follow fashion, too. They used to reach to about mid-chest; today’s clothing styles favor a shorter necklace (Mdm. Lua Langub, Long Semado: pers. comm.). Bead necklaces for men are short enough to be worn in an open collar; the elegant batik shirt which is Malaysian semi-formal evening wear is enhanced by a few “good” beads worn in this way. Mdm. Yamu Pengiran (pers. comm.) described to me an old bead fashion that I have not personally seen: a bead bracelet consisting of twelve or more strands of small beads like those used for the type b necklaces, shaped to closely fit the forearm from the wrist towards the elbow.

### The Types of Beads

The Lun Bawang utilize a variety of beads, the 20 most important of which are described below. These are listed in order from the most to the least valuable.



**Table 1. Selected Lun Bawang Bead Vocabulary.\***

<i>alai</i>	bead
<i>alet, let</i>	bead
<i>amas</i>	gold
<i>aki</i>	carnelian bead
<i>bané</i>	bead necklace
<i>barit</i>	decorated
<i>baru</i>	new
<i>bau</i>	bead
<i>bengin</i>	small (red) bead
<i>beret</i>	bead belt
<i>birar</i>	yellow
<i>buda</i>	white
<i>buror</i>	old (antique)
<i>buso</i>	orange
<i>labak</i>	melon (gourd)
<i>manaa</i>	small (pink) bead
<i>meching</i>	"not so old," recent
<i>mon</i>	old
<i>pata, peta</i>	bead cap
<i>rabang</i>	small (orange) bead
<i>rebuyong</i>	zig-zag
<i>sia</i>	red
<i>sukur</i>	spotted dove
<i>tabu</i>	jar
<i>tebelu</i>	shell bead
<i>tepalang</i>	traverse
<i>tina</i>	small
<i>tulang</i>	bone

\*Based on Pur (1965) and oral information from bead owners

The material is glass unless otherwise stated. A selected vocabulary of Lun Bawang bead terms is presented in Table 1.

1. Long thin orange (*bau tulang buror*). These are composed of a very fine, smooth, opaque pale dusty-orange glass, and come in lengths of 15-25 mm. Visually, they are "drawn" beads of the Indo-Pacific type described by Francis (1989), but not cut into short segments. The Gardener

Collection (located in Johore Lama at the southern tip of the Malay Peninsula) contains similar specimens (card II, row 18), but their color appears darker and their surface is less smooth than that of the *bau tulang buror*.

2. Yellow spherical, for caps (*bau alet*). This and the next two types are visually almost the same. About 7 mm in diameter, they are of opaque glass with a matte surface which is often pitted or marked from age and use. Expert eyes can

distinguish a very old from a not-so-old specimen at a glance.

3. Yellow spherical (*alet birar mon*).
4. Yellow spherical (*alet mon meching*).
5. Shiny yellow, long oval (*let alai*). This is a top value bead for the Lun Bawang and their cousins, the Kelabit. The place of origin of types 2-5 has not yet been determined, though opaque yellow glass is found elsewhere in the region. Visually similar beads (of the same shape but of a paler color and with a "glassier" appearance) are in the Gardener Collection (card II, row 16).
6. Decorated yellow, long oval (*alai barit*). This is a newer, less valuable version of type 5.
7. Yellow "melon" (*let labak*). Not particularly old.
8. Small yellow (*bengin birar*). This and the following type are very common throughout the Insulindies, variants of the Chinese coiled bead (Francis 1990).
9. Small brick red "mutisalah" (*bengin, bau tina sia*).
10. Long faceted carnelian (*aki*). Both genuine carnelian beads and their glass imitations (Francis 1979) are used in heavy necklaces, and to form the sides of caps.
11. Small orange doughnut (*rabang*). Of opaque glass, 4-6 mm in diameter.
12. "Fake chevron" with black zigzag bands (*rebuyong*). A black cylindrical bead which is fairly common in Borneo.
13. "Amsterdam" chevron (*bau mon*). Dubbed "Amsterdam" chevrons by van der Sleen (1963:173); it is likely that some Borneo beads originated in Holland. This type must have been available for a long time; a sample card (Murano, 1926) in the Sarawak Museum features it in several colors.
14. "Gold-decorated" bead (*rebuyong amas*). These are beads decorated with aventurine, a suspension of fine copper particles in glass which impart the appearance of gold.
15. Simple black "lukut" (*alet sukur*). A lampworked bead, probably from Venice. Good new copies of this bead, said to be from Java, have recently become available.
16. Black with white dots (*let sukur* or "spotted dove"). The dots may be white, pink/white, blue/white or turquoise/white. These beads are used to form the sides of bead caps.
17. Large brick-red spherical (*alet sia*). A common bead in Borneo, well regarded but not usually top value (Francis 1991:Pl. 2, central item; Munan-Oettli 1981:21-22). It is used to make the sides or backs of bead caps.
18. Shell, cylindrical or spherical (*tebelu*). Large opaque white beads are called "shell" and sometimes "pebble" without much investigation.
19. Ceramic (*alai tabu* or "jar" bead). A few ceramic beads, presumably 19th- or 20th-century Chinese, are present. These are curios of no great value.
20. Big white spherical (*alet buda*). Generally of opaque glass, occasionally of shell, these can be used to fashion the backs of caps.

### The Source of Lun Bawang Beads

Lun Bawang ladies are vague about the origin of their beads. A long faceted carnelian is occasionally found in the earth, presumably lost by somebody in the past (Mdm. Yamu Pengiran, Ba Kelalan: pers. comm.). There is a general idea that beads come "from Brunei," but there is no great insistence of this, or explanation. As the Lun Bawang people have only moved into the orbit of Brunei within the last 200 years, and the family heirlooms are "many generations" old, it is more likely that their main trade access was Borneo's east coast, not the north.

In the old days, women seldom left their natal or nuptial regions; their longest trips were usually to neighboring longhouses. Men did the trading and raiding, and came home laden with treasure. Bead preference had to adapt itself to what was available. Considering this fact, it is interesting to compare the bead fashions of the Lun Bawang and the Kelabit, related peoples who share a mutually intelligible language and similar cultures. The two groups lived within reach of each other in the central highlands of Borneo, and must have shared an almost identical bead pool at one time. Both Kelabit and Lun Bawang women wear bead caps, the Kelabit one closed at the top. Multi-strand belts and necklaces of both tribes look identical. Both value the long, thin, orange *tulang* bead, the shiny oval *let alai*, and the small coiled beads (*bengin*) which they string into similar articles.

The Lun Bawang used to make and wear bead jackets of the type the Kelabit still treasure (Mdm. Yamu Pengiran, Ba Kelalan: pers. comm.). But the Lun Bawang hardly use the Kelabit's top value bead, the transparent or translucent dark-blue cylinder (Francis 1991:Pl. 5; Munan-Oettli 1983:93-94). They know it, and call it *bau Kelabit* (Mdm. Alau Maru, Long Tuma: pers. comm.). The Kelabit used long, faceted, biconical carnelian beads for making caps in the past. Now they prefer the long orange *tulang* and a variety of other small beads. None of these are used by the Lun Bawang to make caps. The copious use of the yellow spherical *alet birar mon*, especially for the fronts of caps (Pl. IVC), distinguishes the Lun Bawang. Another yellow bead, the *let alai* (Pl. VB), is longish and oval in shape (ca. 5 mm x 10 mm), of a brighter shade than the *alet birar mon* and quite shiny. Very commonly used by the Kelabit, the type (no. 11) dubbed "doughnut" by A. Lamb (1961:50ff.) is used but not highly prized by the Lun Bawang. This is especially strange considering that it is the one bead that was certainly made in Borneo (Tillema 1938:179-181)!

The Lun Bawang use a bead not seen elsewhere in Sarawak, and not common among them either, in necklaces and, occasionally, belts. It is a very long faceted bicone of translucent glass, or just a "stick." This bead was manufactured in late 19th- and early 20th-century Bohemia in shades of deep red-brown and orange to imitate a much older carnelian bead (3-5 cm long) found all over the island and, indeed, everywhere in the Insulindies. But the "long glass carnelian" is up to 12 cm in length, and comes in additional colors: dark green (possibly in imitation of jade), midnight blue, dark red, violet, white and yellow. It is also found among Sabah's Muruts and Tagal who use it to make an angular headband that sits on the head rather than conforms to its contours. The Runggus in northeast Sabah wear it too, though not on their heads. The longer the bead, the greater the danger of breakage. It is considered sufficiently valuable that even broken sections have their sharp edges filed off and are then re-strung.

It is not clear why this conspicuous, if not very attractive, bead is hardly found in Sarawak. It may have originated with the German trade that tried to gain a foothold in the Sulu Sea in the 19th century. The time frame fits: the bead is not considered to be

very old; it seems to have gotten into east Borneo currency after the 1850s and left the market following World War II. The original village on the site of Sandakan, first capital of the North Borneo Company (1879), was called *Kampung Jerman* (German village) in honor of the gun runners who defied the Spanish ban on supplying firearms to the Sulu Archipelago. The Lun Bawang's traditional supply routes originated at the eastern and northeastern coast of Borneo, particularly Tarakan, comfortably within the radius of this trade. Sarawak's seaborne supplies came in mainly through Singapore, so English-approved Indian, European and Chinese<sup>2</sup> beads were much more common here in the Victorian age.

None of the informants had anything to suggest regarding the origin of the yellow beads, big or small. Neither had any of them heard of the quite recent manufacture of yellow beads (of a type they know, but do not particularly value) on the east coast of Borneo (see Tillema 1938). Nor had they heard of the manufacture of stone beads by the Saba'an of upper Bahau (Nieuwenhuis 1907:224), Central Borneo neighbors and distant cousins of the Lun Bawang with whom they share some bead tastes.

### Locally Made Beads

The Lun Bawang used to make clay cooking ware in the past (Morrison 1955:295; Pollard 1935). The availability of good clay in the region may be what prompted the people of Long Tuyoh to start making clay beads in the late 1970s, in response to the rising demand for "real" beads. Initially they made large yellow beads for the production of caps. Reviving interest in the material culture of Borneo had driven up the value of genuine beads. A parallel folkloristic revival, partly for the purpose of entertaining visitors and tourists, created a demand for traditional costumes. The Lun Bawang costume demands large quantities of beads, only a few suitable examples of which were to be found among the plastic ones available as fashion jewellery.

Labo Tui and his wife, Lisabeth Murang, both Lun Bawang, started making beads at their house in Long Tuma in the early 1980s. They had heard that other people were making them so they decided to try it as well. The two think that the idea comes from Indonesian Borneo, where the bulk of the Lun Dayeh





**Figure 7.** Labo Tui of Long Tuma shaping a clay bead using a coconut-leaf rib to perforate it. His wife, Lisabeth, strings finished beads (photo by H. Munan).

live. Beadmaking, being a modern craft, is not restricted by taboos of any kind. Anybody who wants to can make beads, provided they have the materials, skill and patience.

Labo searches for a particular type of very fine clay, almost oily to the touch, which is found in small pockets in the river bank. He brings a few kilograms into the house at a time for further processing. First, he kneads and pounds the clay to perfect smoothness, and then shapes the beads by hand, perforating them with a wooden stick (Fig. 7). The beads are then dried at room temperature. After being threaded on lengths of wire which are formed into loops, the beads (600 - 800 at a time) are placed in an open fire until they glow red. When cool, the beads are colored individually using a paintbrush and enamel paint (Figs. 8-9). The beads are then allowed to dry, individually spiked on thin sticks, at which point they are strung for sale.

Labo and Lisabeth can produce 10-15 strings of beads a week. They have not abandoned farming, but spend one third to half their time making beads, depending on seasonal farm work. Beadmaking is a good source of income for subsistence farmers. Their product sells well among the Lun Bawang of Sarawak

and Sabah, also the Murut and Tagal (some of the latter have started wearing yellow *pata* in preference to their own traditional headgear which requires three or four strands of very large carnelian beads). "Long Tuma beads" (Pl. VD) are sold in shops as far afield as Kota Kinabalu, the capital of Sabah, and Kuching in Sarawak.

The main purpose of the beadmakers is to reproduce antique beads, *not* to produce fakes. Beadmakers, middlemen and sellers are all emphatic on this point: nobody tries to tell the buyer that the beads are "genuine antiques." Many Lun Bawang buy the new beads to conserve the old authentic ones which are only worn on gala occasions.

In the 1960s, it was still possible to buy transparent beads of blue, green and amber glass in Sarawak's townships. These are now gone from the market. For more than 20 years, the only new beads were plastic "fashion-jewellery" types. Now, in the 1990s, there are new glass beads. Various kinds of poorly finished millefiori from India are sold by peddlers who insist they are Tibetans; a whole conclave of them may be found in Petaling Street in Kuala Lumpur. Their wares are appreciated as



**Figure 8.** Lisabeth Murang covering plain yellow beads with enamel paint. She attaches the wire on which they were fired to the wall (photo by H. Munan).



**Figure 9.** Lisabeth Murang painting the decoration on imitation “lampworked beads” with a fine brush. The beads are mounted on a thin stick for this purpose (photo by H. Munan).

novelties, but could not be worn as part of the Lun Bawang costume. But the very latest are large-holed cylindrical beads, of the type used for the "corn-row" hairstyles of the 1980s, in rather garish colors. These beads are snapped up by such Lun Bawang ladies as have access to them and fashioned into bead belts, necklaces and even *pata* for informal use, school concerts and the like when they do not want to risk losing or damaging their heirloom property.

## ACKNOWLEDGEMENTS

I wish to thank The Bead Society of Greater Washington for a generous research grant to finance this study. My thanks also to Mr. Karlis Karklins and the Society of Bead Researchers for their support.

In Sarawak, thanks are due to the family of Daniel Selutan of Long Luping and his wife Mdm. Lua Langub of Long Semado, now living in Kuching, for help and information in the early stages of the project. Long Tuma teacher Ms. Nancy Pagag kindly helped with transportation and interpretation, and introduced me to her bead-wise mother, Mdm. Budi Tadam, as well as to Mdm. Alau Maru and such neighbors as inevitably drop in when there is talk about beads; Labo Tui and Lisabeth Murang gave up nearly a day's work to talk to me. Alfred Dawat and Mdm. Litad Selutan filled me in on the history and ethnogeography of Lawas and its hinterland. I especially wish to thank Dennis Ukung Langub and his wife in Lawas, Tagal Paran and Mdm. Yamu Pengiran in Ba Kelalan and their son Mutang Tagal in Miri for hospitality during my travels.

This report owes much to comments and criticism from Ipoi Datan, Deputy Director of Sarawak Museum, and Jayl Langub of the Native Customary Laws Council, Sarawak.

## ENDNOTES

1. Personal communication from several elderly informants who were "salvaged" in this way as babies, and brought up by distant relatives.
2. "Sold in Chinese paper and Chinese boxes in Singapore... blue transparent and yellow opaque

beads, cylindrical, 7 mm long and 8 mm thick..." (Nieuwenhuis 1904:139-140).

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## BOOK AND VIDEO REVIEWS

*Beads of the World: A Collector's Guide with Price Reference.*

**Peter Francis, Jr.** Schiffer Publishing Ltd., 77 Lower Valley Road, Atglen, Pennsylvania 19310. 1994. 144 pp., 263 color figs., 15 b&w figs., price guide, index. \$19.95 (paper) + \$2.95 postage (North America).

It is very hard to review an essential handbook. How can one express a criticism of what sets out to be the first truly global guide by which all other future handbooks on the same subject will be judged? My bias is that of another collector, also an author, but with a very different experience of the World of Beads; i.e., from an Old World, English standpoint. I have other practical advantages: I am a dealer myself, currently in business, and experienced as a teacher of designing and threading techniques. I am in touch with hobbyists, collectors, and amateur and small-scale jewelry makers, and know very well how much such a collector's guide is needed, and how many people would buy such a handbook regardless of its quality.

Peter Francis is offering his complex and enormously detailed knowledge to create such an interest in collecting beads that it will make specialists of dabblers. Beads are so intoxicating just because, as he says, there are so many of them and they are so varied that there will always be a lot still uncharted, unlike coins and stamps. It is a subject that may involve research on any level, from reading to digging, from laboratory tests to rubbing beads against your teeth.

So taking on the task of evangelist/publicist to the average layperson for this new area of interest is quite a responsibility. Peter has prudently divided his book into three main parts: Section One, with three chapters that serve as an introduction; Section Two, Bead Materials; and Section Three on origins and use.

The first section introduces the subject, and shows the significance that beads have had throughout

human history, in virtually every part of the globe. It reveals how well they illustrate the development of primitive and increasingly sophisticated technology, and played a vital part in contact and exchange, and, therefore, in civilization. His way of assessing their fascination is just in terms of what they tell us about people. In the second chapter he makes useful suggestions for would-be collectors by recommending areas of specialization. Curiously, only after all that does he discuss the question "What are beads for?" in chapter three.

In Section Two Peter goes very thoroughly into the materials that beads are made of, allowing glorious comparisons across continents and across the centuries. He separates them in chapters four, five and six into "Organic," "Stone" and "Glass," respectively, which generally works except when he has to squeeze plastic in somewhere and decides to classify all plastics as eligible for inclusion in the Organic chapter. Of particular interest are photographs he has obviously taken on his travels of craftsmen at work on some of the beadmaking techniques in India.

Section Three, called "Origins and Use," is devoted to discussion of beads by geographical area of origin, divided into six areas that identify the chapters: Europe, the Middle East and India, the Far East, Southeast Asia, Africa, North and South America. I found plenty of interest in the chapters on the Middle East, India, the Far East and Southeast Asia as these are areas from which we are always getting morsels that don't match up, and it helps to have it as a complete menu.

However, on p. 13, Peter speaks of "six... truly global networks" of quantity production for extensive trading in a historic and contemporary sense; and they seem to be different from the six areas as defined in chapters 7-12. They include 1) the stone-bead industry of western India; 2) the coral-bead industry of the Mediterranean; 3) the eastern Mediterranean glass-bead industry; 4) the Indo-Pacific-bead

industry; 5) the Chinese glass-bead industry; and 6) the Western European glass-bead industry. Throughout the book he shows interesting pictures of modern glass beadmakers in Purdalpur undertaking several beadmaking processes using techniques that are recognizably “low tech” or “traditional,” and we have examples of these products in enormous amounts in our shops which sell contemporary beads and ethnic accessories. But this is not what Peter includes under heading no. 4. Is the current production of lamp- and furnace-worked glass beads from India really too insignificant to count as a segment of the world bead scene?

Now we can no longer avoid mentioning the general visual impression of the book. Peter Francis states his priorities clearly enough in the preface: “It’s not really the tale of pretty little gew-gaws. It is the chronicle of our brothers and sisters around the world and throughout time.” If he did value beads for their prettiness or beauty, as a *very* large percentage of collectors do, he would have given far more attention to the prettiness of the illustrations and the clarity of what they show. Of the 266 photos which are meant to show clear details of beads singly or in groups, over 70 are unreadable, or the wrong way round, or have misleading captions. For example, what possessed him to do so many close-up pictures of beads laid on one particularly shocking pink blanket, especially the clear and frosted glass examples?

Looking through, there are photos of beads that do work visually, including the ones that acknowledge “Courtesy of” Albert Summerfield or Rita Okrent.

It is the publishers who must take responsibility for cheap color printing that reduces most of the dark hues to black, and renders every subtle shade of red exactly the same (*see* p. 61). And, if there was an art director, it is hard to imagine that the whole book could have proceeded without the photos offering some indication of scale, which is of critical importance with small treasures, as on p. 82, which has three color pictures of the typical glass beads of Indian and Pakistani manufacture, of three different scales but arranged so that you cannot grasp which are larger and which are smaller.

While having a go at the technicalities, isn’t it understood that proofreaders are employed to go through the text and check the spelling, grammar and syntax just to make sure that what is printed is

intentional and unambiguous? Even lacking a proofreader, every word processor nowadays has a “spellcheck” function. Apart from numerous inattentive slips, nearly 20 major spelling mistakes can be counted in proper names. Where in the world is Sameria (p. 52), for instance, and what are “bed curtains” (p. 31) and “tinkerers” (p. 71)?

It would be mean to argue individual points that are made; after all, how many of us have evidence to dispute it if Peter Francis shows a bead found in Africa and asserts that it was made in Germany, not Italy?

As a craftsman, however, I can’t overlook page 51 because you *cannot* straighten a badly drilled hole “with a thin file or small drill” — it is a guaranteed way to ruin a bead and break a perfectly good tool.

Peter Francis gives us references, not a bibliography as such, and some of the omissions are puzzling, as the budding collector is likely to need to know about basic stuff. Why has he forgotten to include Elizabeth Harris’ booklet *A Bead Primer* published by The Bead Museum, yet mentioned *The New Beadwork* of Kathlyn Moss and Alice Scherer which is about beadwork, not beads? Only one of the great number of jewelry-collecting books published by Schiffer, his publisher, is mentioned; surprisingly, neither of the volumes by Sibylle Jargstorf on the development of the Czech glass-jewelry industry are included.

Concerning the Price Guide, this is the section in any collecting book that can make you gloat or groan and, occasionally, laugh. In the role of dealer with many American customers it is useful to be *au fait* with what well-informed collectors understand to be the right price for a rare or special specimen, and equally useful to know the ceiling price for something exotic or unfamiliar that you may want to buy. It has already proved invaluable and educational: when offered glass beads from Plumbon Gambang a second time, I was able to point out the amount that we were overcharged when they were a novelty here and no one in London had seen them. Also, it is useful to demonstrate to customers how modest my prices are against some kind of impartial standard.

We still refer with reverence and gratitude to Beck and van der Sleen although most of their pioneer research work has been subsequently overruled, and it is likely that the same fate will befall any landmark book on a relatively new subject. So, while I simply



dare not sum up with any kind of verdict, I will admit that my copy is already well-thumbed despite the amusement and outrage, and I know it will bring more converts to the fold!

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*Beads from the West African Trade Series.*

Volume VII, "Chevron and Nueva Cadiz Beads," 1993. 128 pp., 40 color plates. \$35.00 (cloth) + \$2.50 postage (U.S.).

**John Picard and Ruth Picard.** Picard African Imports, 9310 Los Prados, Carmel, California 93923.

John and Ruth Picard have again presented the bead world with a visually stimulating work; this one covers chevron and Nueva Cadiz beads. The photography is the work of Forrest L. Doud, and he is clearly a master of his craft. The quality of the printing is also excellent, and the resulting volume is indeed beautiful.

This is not a scholarly work. There are no text citations to tell the reader when or where the information originated, and this fact may annoy the specialist. However, there are a few suggested readings that should prove useful for persons wanting additional information.

There are relatively few attempts to attribute dates to the bead varieties, but this is probably a positive attribute to the book. The reader is not presented with hearsay dating so common in the marketplace. Most of the information on dating comes from sample cards, some of which are reproduced in the book. These cards provide an abundance of useful information, and clearly show that many beads once thought (especially by collectors) to be very old were actually made in the 20th century. The publication of the sample cards is an important contribution to the bead literature. Further research into archaeological specimens could have provided additional dating information. For example, chevron bead no. 312 is undoubtedly an 18th-century variety as virtually identical beads with

red, blue, and green exterior layers are found at archaeological sites in the southeastern United States.

Some bead enthusiasts will surely complain that several of the illustrated beads are not chevron beads, especially some of the beads without molded layers such as nos. 116-119, 130 and 137. Others might argue that beads molded with flower-petal molds instead of star molds are not chevrons, even though the manufacturing process is virtually identical. To the Picards' credit, however, we should read their discussion of the term "rosetta" on page 5. Both chevrons (in the modern sense) and multilayered striped cane beads were apparently lumped together by the manufacturers according to the Picards. This is an interesting observation, although one wishes that it was better documented. Could we be dealing with a translation problem? The Picards' inclusion of chevron imitations is a useful addition to the volume.

Many readers will find the lack of a scale in the photographs a major shortcoming. However, text notations do reveal that the photographs are actual size, 125%, 200%, etc. The use of several sizes of reproduction can be annoying but, with careful work, most sizes can be established. Clearly, the reported scales of reproduction are approximate, as can be determined by checking the size of the illustrations with the reported bead sizes. For example, the large chevron bead (no. 61) on p. 25 is said to be 73 mm long, but is larger in the photograph.

The volume also discusses Nueva Cadiz beads. The Picards correctly note that there are two "generations" of these beads; those that date to the early to mid-16th century and those that date to the 19th-20th centuries. It is the reviewer's opinion that there is a largely separate third generation that dates to the first third of the 17th century, but some archaeological specimens have been attributed to the late 16th century suggesting continuity with the early to mid-16th-century specimens. This controversy will only be resolved by further research, especially an examination of the composition of "Dutch" vs. "Spanish" specimens.

Finally, credit is due the Picards for including the modern chevron beads of artist Art Seymour. His work is outstanding by any measure and, as the Picards note, should not be confused with older Venetian or Dutch chevrons.

The Picards have produced a magnificent book cataloguing as many chevron beads as they could locate. This book belongs on the coffee table of any bead enthusiast.

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*Crystal Myths, Inc., Presents Lewis C. Wilson on Glass Bead Making.* 1993. Video: 1 hour, 20 minutes. \$43.00 postpaid.

*Crystal Myths, Inc., Presents Lewis C. Wilson on Lampworking: Advanced Beads, Bracelets, Marbles. Parts 1 and 2.* 1994. Video: 4 hours. \$64.00 postpaid.

Crystal Myths, Inc. P.O. Box 3243, Albuquerque, New Mexico 87190.

To properly classify and analyze any artifact group, such as glass beads, a researcher must be familiar with the different manufacturing processes and their characteristics. This allows one to establish an attribute hierarchy which allows beads to be classified in a logical manner. The ideal way to learn how beads were and are currently made is to read the available historical accounts followed by a visit to a bead factory or a workshop. One then not only learns the specifics and evolution of the production process, but also gets a feel for the work environment.

While historical accounts are not too difficult to track down, a visit to a beadmaking establishment is still not possible for most researchers. Consequently, the two video tapes by Lewis C. Wilson are of great interest to those who wish to know the different techniques for making wound (called "wrapped" in the tapes) glass beads. One must, of course, keep in mind that the techniques are those of Wilson and his colleagues, and are not necessarily those used by wound beadmakers elsewhere in the world or in previous centuries. Certainly some of the equipment is quite different from that used in earlier times, and the speed of the beadmaking process has apparently

been slowed somewhat so that the different procedures are clear to the viewer.

In *Lewis C. Wilson on Glass Bead Making*, an introduction to wound beadmaking, Mr. Wilson — an accomplished lampworker with over 20 years of experience — starts off by showing how to make a basic monochrome bead. The process is repeated several times by several people so that the technique is quite clear to the viewer. One quickly comes to realize that manipulating a mandrel in one hand and a glass rod in the other and keeping both in or near the torch flame is very much like patting your head and rubbing your stomach at the same time. Once the basic bead has been mastered, Wilson moves on to the production of a large bead.

The hour that follows is devoted to the production of another 20 different kinds of beads. Decorative styles/techniques include flush as well as raised and raked eyes, trailed decoration, feathering, millefiori and filigrana. Beads shaped with a carbon or graphite paddle include bicones, tubes (cylinders), discs, squares/rectangles, hearts and fish. Also shown are beads decorated internally with foil and dichroic strips.

Having demonstrated how to produce the different beads, Wilson shows the viewer how to put a clay separator on the mandrel, how to remove the beads from the mandrel, how to grind down the rough ends of a bead, and how to anneal the beads in vermiculite.

The basic equipment you need to start to make wound beads is less than \$400. Wilson runs through the equipment and supplies that are required and tells you where to get the necessary materials. A listing of recommended catalogues for tools and supplies terminates the video.

*Lewis C. Wilson on Lampworking: Advanced Beads, Bracelets, Marbles, Parts 1 and 2*, which runs nearly four hours, demonstrates advanced beadmaking techniques for those who already have a solid grasp of lampworking and wound (wrapped) beadmaking. Part 1 kicks off with Mr. Wilson executing a complicated double-dragon bead. This is quite an undertaking and takes up 22 minutes of the tape.

The viewer is subsequently shown how to make goldstone (aventurine) latticino with a double helix pattern and various different stringers (narrow strands of glass) for decorating fancy beads. The danger of not

preheating goldstone rods before use is graphically illustrated.

Step-by-step instructions follow for the production of fish beads, double-handled amphora beads, Phoenician face beads and two types of dichroic beads, as well as multicolored swirl marbles and colorful cabochons using hemispherical half molds.

Part 2 of *Lampworking* highlights the work of various talented beadmakers. The tape starts with a colorful survey of the creations of 17 artisans, including Brian Kerkvliet (face and aquarium beads), Patricia Frantz (fish beads), Tom Holland (combed beads) and Phyllis Clarke (cat beads). Kevin O'Grady then takes center stage to display some of his creations, including "tongue," raked (combed), millefiori and chevron-approximating beads. Moving to his worktable, he produces a fascinating "bead inside a bead," as well as two attractive Pyrex bracelets.

Following a quick survey of his beads, Scott Cahoon creates a spirally decorated black barrel bead. Keith Krieter also shows us the results of his talents and then makes one of his specialties: a "dancer" bead (a tabular bead trail-decorated with dancing human figures). Those interested in marbles will enjoy Gerry Colman's replication of an old "corkscrew" variety.

Mr. Wilson returns at the end of the tape to illustrate some useful tools not mentioned in *Lewis C. Wilson on Glass Bead Making*, and names several useful publications which deal with lampworking and wound beadmaking. He also lists sources for equipment, supplies and publications, and provides the addresses and telephone numbers of those beadmakers whose creations appear in the video.

The camera work and color in both videos are excellent, and all the procedures are clearly depicted. The accompanying running commentary by Wilson and his colleagues is equally clear and easy to follow.

While nothing can replace an instructor guiding a novice beadmaker at the workbench, these two videos come very close. Both are well worth the money.

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Canada

*Baubles, Buttons and Beads: The Heritage of Bohemia.*

Sibylle Jargstorf. Schiffer Publishing Ltd., 77 Lower Valley Road, Atglen, Pennsylvania 19310. 1993. 176 pp., 356 color figs., 79 b&w figs., price guide, index. \$29.95 (paper) + \$2.95 postage (North America).

Sibylle Jargstorf is a trained chemist and a glass historian, as the introduction to her book tells us. These are impeccable credentials for the author of *Baubles, Buttons and Beads: The Heritage of Bohemia*, a visual delight and a source of solid information. It is a welcome complement to Jargstorf's previous work, *Glass in Jewelry* (reviewed in Volume 3 of *Beads*). Although beads come last in the title and there is only one brief chapter under the specific heading "Beads," there is hardly a page that does not contain material relevant to bead collectors and researchers. After all, the three items are closely related, in material, design and use. The text is supplemented by the detailed captions of the illustrations which depict jewelry, documents, sample cards and advertisements, as well as well-fed, primly buttoned-up women of the turn of the century who are seen wearing the items dealt with in the book.

The author presents a clear overview of Bohemia's history and of the political circumstances that affected the glass industry at different times, in different ways. She pinpoints, with great precision, the villages and townships of Northern Bohemia where glasshouses were established in an area whose center — and the only town known to the outside world by name — was Gablonz an der Neisse, called Jablonec nad Nisou (on the Nisa) since 1918, when the Czechoslovak Republic came into being. Each one of the localities Jargstorf mentions developed its own techniques, glass recipes and designs. Jargstorf renders tribute to the glass dynasties that remained anonymous as they worked behind the scenes, through intermediaries. They were the innovators and movers of an industry that made its mark throughout the world. This prominence was achieved in a relatively short time. There is some evidence that glasshouses have existed in the densely wooded areas of Northern Bohemia since ancient times, but the industry as such only took off as late as the mid-18th century.



By the mid-1800s, Bohemia was outpacing the powerful centuries-old bead industry of Venice/Murano. This was the result of a continuous search for new ideas and methods. A decisive invention, dating to the second half of the 18th century, was the molding tong. It was used to mold-press pendants, buttons, beads and imitation gem stones from heated canes into all kinds of shapes. The process was fast and economical. At first the molds were crude and the articles had to undergo additional cutting and polishing. But by the middle of the 19th century, the tool was perfected to the extent that the pressed items looked as if they had been cut or engraved. Jargstorf disputes the frequently held notion that pressed glass is inferior to cut glass. She points out that molding opened new horizons for glass design. To her, the buttonmakers of the Victorian era were the real initiators of this revolutionary process and, therefore, the predecessors of the most famous molded glass artist, René Lalique.

By the end of the 18th century, the glass artisans of Bohemia were developing new ways to color glass. Prominent in this field was the Riedel family which also pioneered the use of uranium to achieve certain shades of yellow and green. The famous ruby, garnet and carnelian reds were elaborated by the Zenkner family. The technique to achieve iridescent glass was discovered in 1873. Gold-lined blown glass was introduced in 1898, and remained a monopoly until 1945, when the glassmakers of the area (known as the Sudetenland) that had been incorporated into Hitler's Germany in 1938, were expelled when World War II ended.

During the mid-1800s, the Bohemian glassmakers began adopting and adapting Venetian styles, as well as mosaic glass, and aventurine which they called *venetianer Fluss* (Venetian flux).

The only one of the Gablonz glassmakers to become known internationally was Daniel Swarovski. Jargstorf explains that he overcame the anonymity of his compatriots and colleagues because he dealt directly with his clients. Swarovski moved his enterprise to the Tyrol, Austria, in 1890.

Jablonec has become synonymous with glass. But the craftsmen of the area used many other materials — natural and synthetic — in the production of adornments. *Baubles, Buttons and Beads* devotes a chapter to each of the two categories. Among the

curious inventions of the early 1900s are "Ballottini" beads of lacquered wood which are given a satiny finish by coating them with tiny glass pellets. Such beads occasionally appear at flea markets without creating much of a stir. Now that we know their history, they might.

The glass beadmakers of Bohemia scattered an infinity of unique creations throughout the world. Jargstorf barely mentions the painstaking market research involved in this achievement.

It is also a pity that the author closes the chapter on Bohemian beads with the relocation of the Sudeten German craftsmen to New Gablonz and other parts of Germany. It would have been interesting to learn about the industry under more than three decades of Communist rule during which the production continued, shrouded in secrecy.

It is hoped that Sibylle Jargstorf will elaborate on these subjects in a future volume as enjoyable and well documented as her previous work.

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*Beads of the Bison Robe Trade: The Fort Union Trading Post Collection.*

**Steven Leroy DeVore.** *Fort Union Monograph Series, Publication 1*, Friends of Fort Union Trading Post, Buford Route, Williston, North Dakota 58801. 1992. i-ix, 136 pp., 11 color figs., 5 b&w figs., 20 tables, appendices. \$16.45 (paper).

DeVore's monograph summarizes the 38,578 trade beads of glass, bone and shell found during the 1968-1972 excavations at Fort Union Trading Post National Historic Site, North Dakota and Montana. A major trade outpost between 1829 and 1867 for the acquisition of bison robes from the Native Americans of the Northern Plains, Fort Union was built by the American Fur Company on the Missouri River across from the mouth of the Yellowstone River.

The National Park Service (NPS) conducted the 1968-1972 testing and excavations at Fort Union as part of an extensive reconstruction and interpretive program at the site (further investigations were also

carried out during 1986-1988, but the analysis of this material has been delayed because of funding problems [see Hunt 1993]. Analyses of each of the various classes of cultural materials recovered in these excavations have only recently become available to historical archaeologists — most of these in limited numbers of paper or microfiche reports (Hunt 1986). Thus, the publication of this monograph on trade beads presents in an accessible format considerable historical, cultural and temporal information on the types of beads preferred for Native American trade on the Northern Plains in the middle to late 19th century.

The extensive NPS excavations at Fort Union recovered beads primarily in the Indians' and artisans' house, the dwelling range, the store range and in non-structural contexts between the Indians'-artisans' house, the south palisade and apparently the front gate; about 17% of the beads were from unknown provenience(s). Their recovery from both trading and domestic contexts at the fort suggests to DeVore (p. 62) that beads were important to both the Native American trading partners (principally the Assiniboin and Blackfoot), as well as the fort's inhabitants (post employees and their families). Perhaps the distributional data also indicate that the trade in bison robes was conducted by both commercial and entrepreneurial interests.

The heart of the monograph presents DeVore's descriptions of the recovered glass, bone and shell beads. The bone and shell beads (n=82) were classified according to the type of material they were made of and their modifications in shape. These bead types were commonly used by Native Americans as ornaments prior to European contact; in the case of the Fort Union assemblage, they appear to have been uniformly manufactured by American factories for the fur trade.

DeVore's classification of the glass beads follows the system designed by Lyle Stone (1974) for the Michilimackinac site beads. He defines five classes, differentiated by manufacturing technique: hollow-cane, wire-wound, mandrel-pressed, wire-wound molded and blown. In bead nomenclature, hollow-cane beads are what others have termed drawn beads, while wire or mandrel-wound beads have also been termed wound (Karklins 1985). Within each of the classes are series (based on bead structure), types

(based on shape and surface characteristics), and varieties (based on differences in color, number of layers, color and form of glass appliqué and the degree of diaphaneity).

From these attributes, DeVore recognizes 85 hollow-cane varieties, 54 wire-wound varieties, 9 mandrel-pressed varieties, 6 wire-wound molded varieties and 6 blown varieties. The hollow-cane class represents about 96% of the Fort Union beads and these, in turn, are dominated by white and blue donut seed, pony, and necklace-sized examples. The wire-wound beads account for another 3.9% of the assemblage, principally round white, turquoise green and blue varieties. The wire-wound molded and blown bead classes are represented by 37, 7 and 20 examples, respectively.

Accompanying the variety descriptions are ten excellent color plates of the beads. However, none of the blown bead varieties are illustrated. An examination of the beads depicted in Figures 7 and 8 does suggest, however, that some of the beads identified as hollow-cane varieties are more likely of wound manufacture. Similarly, one very large yellow bead (Fig. 81, variety CI SA T2 Ve) appears to be an example of a mold-pressed bead (Karklins 1985:101), a type not identified by DeVore.

In conclusion, this monograph makes a significant contribution to the study of the glass, bone and shell beads used in the 19th-century bison robe trade on the Northern Plains. Its strength is its clear and straightforward presentation of the bead data from Fort Union NHS, which should be emulated by other bead researchers, and is a volume recommended for anyone with an interest in the study of beads and their uses.

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***Ezakwantu: Beadwork from the Eastern Cape.***

**Emma Bedford (ed.)**. Exhibition catalogue; South African National Gallery, P.O. Box 2420, Cape Town 8000, South Africa. 1993. 112 pp., 13 color plates, 61 b&w figs. Rand 50 + Rand 40 for postage (paper).

The ending of apartheid in South Africa has been accompanied by an upsurge of public awareness of, and interest in, aspects of indigenous African culture. Since 1990, the South African National Gallery (SANG) has expanded its collection's and exhibition's policy to include material culture, especially that of southern Africa. *Ezakwantu*, a Xhosa word meaning "the things of the [Bantu] people," is the first exhibition in a series planned to endorse this modification of policy. In fact, South African ethnographic work (including the study of beads and beadwork), did not really take off until the 1930s, and it was not till then that beadwork began to be collected formally by museums in South Africa (p. 39). Horace Beck of England and C. van Riet Lowe of South Africa both made reference collections of beads and bead sample cards.

The exhibition catalogue ought to be reviewed under two broad headings. It consists of twelve articles by different authors plus a Catalogue List of the actual exhibits. The first article, by Emma Bedford, defines *Ezakwantu*, and explains why there

are so many contributors. It was deemed necessary, in a pioneering exhibition of this nature, to involve Africans from the East Cape area, whether through staff members of SANG or by interviews. The articles fall into two broad categories, one of which places beadwork into the context of South African society; the other one treats beads and beadwork as a subject of archaeological or historical research.

There is a discussion of traditional dress and its use, whether to affirm identity or to make a political statement. In curating the exhibition, and in producing the catalogue, black Africans were given control over the way they and their culture were represented; otherwise the colonial pattern of domination would have been seen to continue. Examples of this cultural domination are the 19th-century paintings and photographs of Africans wearing beadwork, quite often incorrectly, as expounded by Gary van Wyk in his discussion of the paintings of Thomas Baines and the photographs of W.F.H. Pocock. Lindsay Hooper, in the final section on "The Social Life of Beads" writes: "Beadwork encodes social information about the power, age, gender and ritual status of the wearer." Power is shown in the accumulation of beadwork which is also an accumulation of wealth. Beadwork also shows cross-cultural influences, such as in headgear and adaptations from Victorian beadwork. Color symbolism and other aspects of beadwork style may have a purely local validity. As women are the chief makers of beadwork within South Africa, a feminist-oriented interpretation of the production and consumption of beadwork is essential to understanding the position of women in Eastern Cape societies. Diviners use beadwork to affirm their ritual identity, modifying it according to their level of initiation. As well as a cultural identifier, beadwork can be used as a telling political statement, notably when Nelson Mandela elected to appear at his trial in Johannesburg in 1962 in full Thembu beaded costume.

After briefly reviewing the glass bead trade and glassmaking, Sharma Saitowitz, in "Towards a History of Glass Beads," discusses the impact of glass beads on trade, citing references dating from 1516 and from van Riebeeck's Journals (1652-1655) that concern trade in beads in East and South Africa. While documentation relating to Africa at such an early date is scanty, there is quite a body of information about bead manufacture in Venice and Bohemia. Venice, in



the interests of maintaining its monopoly on the bead trade, acquired a factory in France in 1900, and the firm of A. Sachse in Gablonz, Bohemia, in 1920. Indeed, until about 1955, Venice's *Conterie* seems to have cornered the bead export trade to South Africa; Saitowitz in her Appendix 2 tabulates the amazing quantity of beads (including glass rods and lamp-worked beads) exported to Africa during 1932-1955, country by country and year by year, totalling a staggering 3,706,256 kilograms, of which 1,665,691 went to South Africa and Zimbabwe. She also has useful data on traders in Cape Colony and the Eastern Cape, and has tracked down old records, including an annotated trade-bead card, from merchants operating in King William's Town. Her paper really adds to the recorded data on beads in South Africa.

Carol Kaufmann, in "The Bead Rush: Development of the Nineteenth-century Bead Trade from Cape Town to King Williams Town," continues where Sharma Saitowitz left off, concentrating on the part that beads played in Xhosa-speaking trade and economy. After 1830, the bead market became deregulated to some extent, and beads were more generally available, instead of being exclusively under royal control. Beads became increasingly important as currency among the indigenous population, and the making of beadwork becomes a feature of South African life. Kaufmann adds to the roll of former merchants through the records held in Cape Town, and documents the efforts of frontier missionaries and traders who tried to order beads directly from London and thus bypass the inflated prices charged in Cape Town. Sections in this paper entitled "Distribution of Trade Beads," and the periods 1820-1830, 1840-1870 and 1870-1900 take us through the history of the bead trade in the Eastern Cape area, and trace the changes in value and availability. An ongoing archaeological excavation at the farm "Canastaplace" promises to give significant information arising from a bead assemblage found in grain storage pits, a find that is so far unique in the Eastern Cape.

The exhibition catalogue, compiled by Carol Kaufmann, one of the curators of the exhibition, covers 373 entries, including 12 paintings and photographs, 12 bead sample cards and a variety of beadwork, among which is a complete diviner's outfit.

The illustrations are well chosen to accompany the text, and show that the exhibition must have been well worth a visit. Perhaps something more permanent may come about ere too long.

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### *Beads and People Series.*

Volume 1, "Heirlooms of the Hills (Southeast Asia)," 1992. vi + 22 pp., 13 color figs., 12 b&w figs., index. \$15.00 (paper).

Volume 2, "Where Beads are Loved (Ghana, West Africa)," 1993. vi + 22 pp., 11 color figs., 8 b&w figs., index. \$15.00 (paper).

**Peter Francis, Jr.** Lapis Route Books, The Center for Bead Research, 4 Essex Street, Lake Placid, New York 12946.

These two publications are the first in a series of monographs aimed at a popular audience. Both volumes cover very large geographical areas and time periods. "Heirlooms of the Hills" features beads from Southeast Asia. A brief introduction to the region is followed by short discussions of the beads of ethnic groups in Thailand, Burma, Taiwan, the Philippines and Indonesia, the work concluding with a brief overview. "Where Beads are Loved" concentrates on beads in southern Ghana, though the text ranges widely over time and space, including condensed discussions of the trans-Saharan trade, the European bead trade, African-made beads and bead use.

As publications aimed at the collecting market, these volumes are likely to sell well. Both volumes provide basic introductory information on such topics as how to distinguish wound and drawn glass beads, European bead manufacture and bead terminology which will be useful to the novice. The prose is generally engaging and the ethnographic examples colorful.

There is less of interest for advanced researchers. The referencing in both volumes is fair, though this is not surprising given the constraints of space and the

intended market. However, this feature limits the scholastic value of some of the original observations made by Francis. This is most apparent in areas where he attempts to draw together general observations concerning the age, distribution and role of beads in specific cultural settings. Expansion on how some of these conclusions were reached would have been helpful. More detailed discussions on topics such as the ethnographic use of beads, *akori* and African bead production are extensively (and more critically) dealt with in other publications — by Francis and others.

At a more pragmatic level, the dot matrix printing is poor quality (particularly in “Heirlooms of the Hills”) and the computer-generated illustrations are wanting. In “Heirlooms of the Hills,” the small locator maps lack any text and one must refer to a larger map at the front of the monograph. The photographs provide good supplementary illustrations but are not outstanding. Given the technology available for desk top publishing, these features will undoubtedly be rendered much more effective in future publications.

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#### *Early Contact Glass Trade Beads in Alaska.*

**Polly G. Miller.** The Bead Society of Central Florida, 121 Larkspur Drive, Altamonte Springs, FL 32701. 1994. viii + 44 pp., 10 color figs., 49 b&w figs. \$15.00 (paper) + \$1.15 postage in the U.S.

Miller places her work in “the new genre of bead research,” evidently because of its primary focus on beads as artifacts for the interpretation of history. She abjures classification schemes or technical descriptions in *Early Contact Glass Trade Beads in Alaska*, choosing instead to sketch the commercial and political factors that influenced the flow of Chinese and European beads to the Alaskan frontier from 1741 through the late 19th century. Referring to various recent exhibitions and archaeological projects, the

author suggests that Alaska is emerging as a laboratory for collaborative studies between bead researchers, historians, anthropologists and archaeologists.

The story is a complex one, conveyed with economy (there are only 36 pages of text) in a semi-popular style that makes up in verve for what it lacks in academic polish. After establishing that China, rather than Venice, was the main source for 18th-century beads brought to Alaska by Russian, British and American vessels, Miller reviews historical and archaeological research on glass production in China during the Qing (Manchu) dynasty (A.D. 1644-1911). While glass had been made in China since the first millennium B.C., the bead industries centered in Canton and Boshan developed largely in response to the external market provided by Western trading concerns. Chinese beads exported through Canton supplied the booming British and American sea otter trades on the Northwest Coast, while Russian fur merchants (and after 1799, the Russian American Company) purchased their American trade wares at Kiakhta on the Chinese border. Siberian trade fairs supplied a secondary Native trade in Chinese beads across Bering Strait.

By the latter half of the 19th century, however, European beads had almost completely replaced Chinese beads in Alaska, except for heirloom examples. These new varieties were imported in large quantities by American whalers and fur trade companies. As Miller points out, this shift in supply is readily apparent on beaded garments obtained by E.W. Nelson and other American museum collectors in the post-1867 American Period. Her exposition on this topic is less clear and inclusive, however, than the earlier analysis of the Chinese trade. There is no discussion of the Venetian or Bohemian bead industries, for example, although evidence for an early Dutch component in the Alaskan trade is examined in some detail. Citing a lack of documentary evidence, she discounts the influx of European beads that is likely to have occurred as a result of the 1839 supply agreement between the Russian American and Hudson’s Bay companies, 30 years prior to the Alaska Purchase. Archaeological collections from Native villages and Russian trade posts (the reviewer’s current research) suggest that European beads did

begin to predominate around this time, including new faceted, tubular, and tiny seed varieties.

This quibble actually underlines one of Miller's main points, however: there are many interesting questions about beads that demand an interdisciplinary approach. I would add that little questions about beads — and other types of historical artifacts as well — can open up broader and more compelling issues. As more specific historical data on changing bead sources are developed, archaeologists will be better able to interpret Native trade patterns in the historic period, and to refine the use of bead typologies as a tool for dating sites. These results will enable new work on the effects of European contact on Native Alaskan cultures, social interaction and exchange between indigenous groups, and even patterns of population decline and village abandonment.

*Early Contact Glass Trade Beads in Alaska* is primarily useful as an overview and introduction to a particular area of historical and material culture research. The trade-offs for the monograph's low cost are poor production values, including numerous typos, unusual punctuation, odd type fonts, and really awful printing of the small black and white figures that decorate the margins of the text. References to supporting literature are fairly extensive, although an editor should have seen to it that some standard and more easily decipherable citation format was used.

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*Gougad-Pateraenneu: Old Talisman Necklaces from Brittany, France.*

**Marie-José Oppé and Howard Oppé.** *The Bead Society of Greater Washington, Monograph Series 1.* 1993. The Bead Society of Greater Washington, P.O. Box 70036, Chevy Chase, Maryland 20813-0036. 18 pp., 21 b&w figs., bibliography. \$6.00 (paper).

This is the first volume in what will apparently be a series of monographs in an inexpensively produced and reasonably priced format which will bring various types of beads and bead-related subjects to a wide audience. This first volume concerns the strands of beads, some old and ancient, some of more recent manufacture, which were assembled and treasured in a particular area of France: the Morbihan region of southern Brittany.

Britanny, like Ireland, Scotland, Wales and Cornwall, was one of the last areas of Europe where Celtic-speaking peoples lived before and after the Roman expansion in northern Europe. Indeed, the local name for these treasured beads is a Celtic-dialect name meaning "necklace of blessed beads." The title of the book spells the name as "Gougad-Pateraenneu," and various different dialectic versions of this name have been used in Brittany. I have always known and seen these beads labelled as "Gougad-Pateranneau," and this was the spelling used by Horace Beck in his volume on *The Magical Properties of Beads* (Beck 1976:33, figs. 14-16), and also in the *Master Index of the Bead Journal* (The Bead Society 1981:13). There is a string of beads labelled thus in Horace Beck's collection at the University Museum of Archaeology and Anthropology in Cambridge, England. Perhaps this more familiar version of the name is a gallicization, as the French word *anneau* means "ring" (and, hence, "bead"), but it is not mentioned as an alternative by the authors.

I had a sense of *déjà vu* reading this book. Not often is one privileged to review a book whose subject matter is unusual and fascinating in itself, but also totally familiar because you have actually seen most of the beads which are being described. I made regular visits as an archaeologist to the Quiberon peninsula in Morbihan in the late 1970s and early 1980s, where most of the known strands are in museums and exhibits. Being familiar with something does not make one an expert on it, and one of the qualities of this volume is that it is a well-researched academic piece bringing together the work of many others who have studied these beads and presenting it in a very readable synthesis for everyone, including myself.

The people of the Morbihan region considered their beads to have great talismanic properties, and used to hand them down through the generations, although this seems to have almost died out in the



present day so that many strands can be seen in local museums, such as those at Carnac and Quiberon. It is not known how long these beads have been collected in this way, but one of the most amazing facts the monograph reveals is that the strands contain beads from various periods, the oldest being neolithic stone beads which were probably found on some of the ancient sites which litter the Quiberon peninsula. Others include types of Celtic glass beads which occur throughout northwestern Europe, along with identifiable Roman, Phoenician, Egyptian, Anglo-Saxon and post-medieval European glass, semi-precious stone and amber. The authors tell us about the traditions, uses and magical properties associated with these beads, and each material and its associated traditions is considered separately. Beads referred to in the text are illustrated in stippled black and white drawings which, unfortunately, do not convey the same impact to the reader as good black and white or color photographs.

Some of the more unusual beads in Gougad-Pateranneau strands are amber glass "man-in-the-moon"-type beads with crescent and star motifs, although various other beads have "astrological" symbols such as crescent moons. These were considered especially potent in reinforcing the talismanic properties of the necklaces and, considering that many archaeologists and other scholars have seen astronomical significance in the great megalithic monuments of the Morbihan district, such as stone circles and the avenues of standing stones at Carnac, it would not be surprising if these types of beads have also been part of local oral traditions, myths, superstitions and beliefs for

thousands of years. Certainly, funerary monuments such as the megalithic chambered tombs have produced stone beads like those which survive in talisman strings.

The monograph is short, being only 18 one-sided pages long. Some of this space is taken up by poor reproductions of postcards depicting local Bretons ca. 1900, some with the black and white drawings, and some with empty white space. Yet, notwithstanding this brevity, the information is sound and important, and there is a good bibliography. Every scholar of beads should buy a copy of this book for its information and its readability. It is hoped that future volumes in the series will aim for a slightly better use of layout space, and weigh up the advantages of a higher cost to provide some good photographs, perhaps even some in color.

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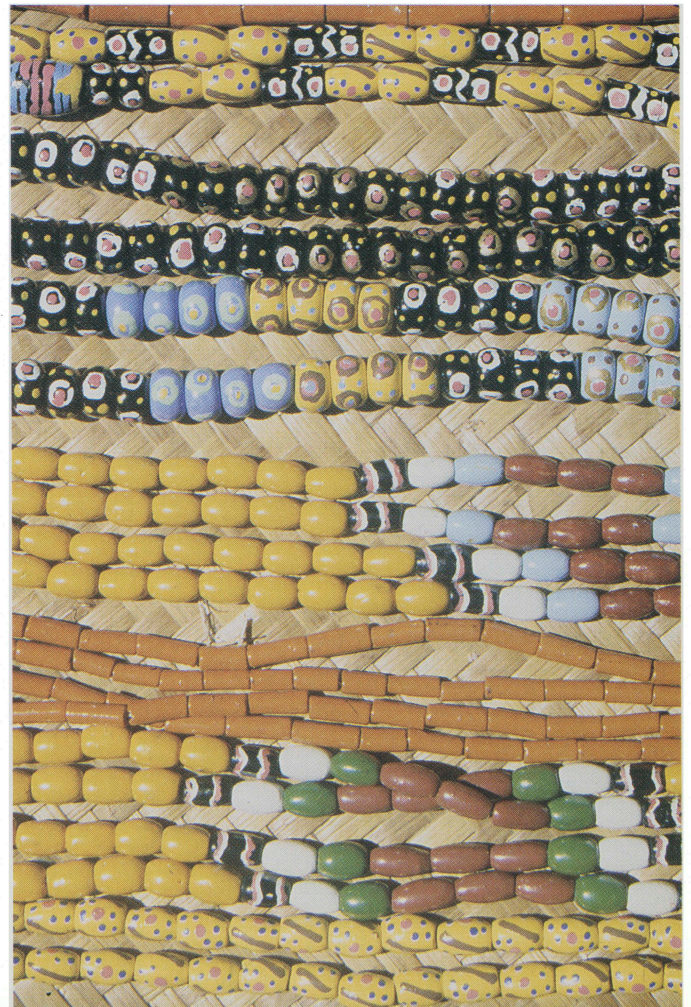
**Plate VA.** *Lun Bawang*: Necklace types a and b.

**Plate VC.** *Lun Bawang*: Type c necklaces. At the bottom are two five-strand necklaces of *bau tulang buror*.



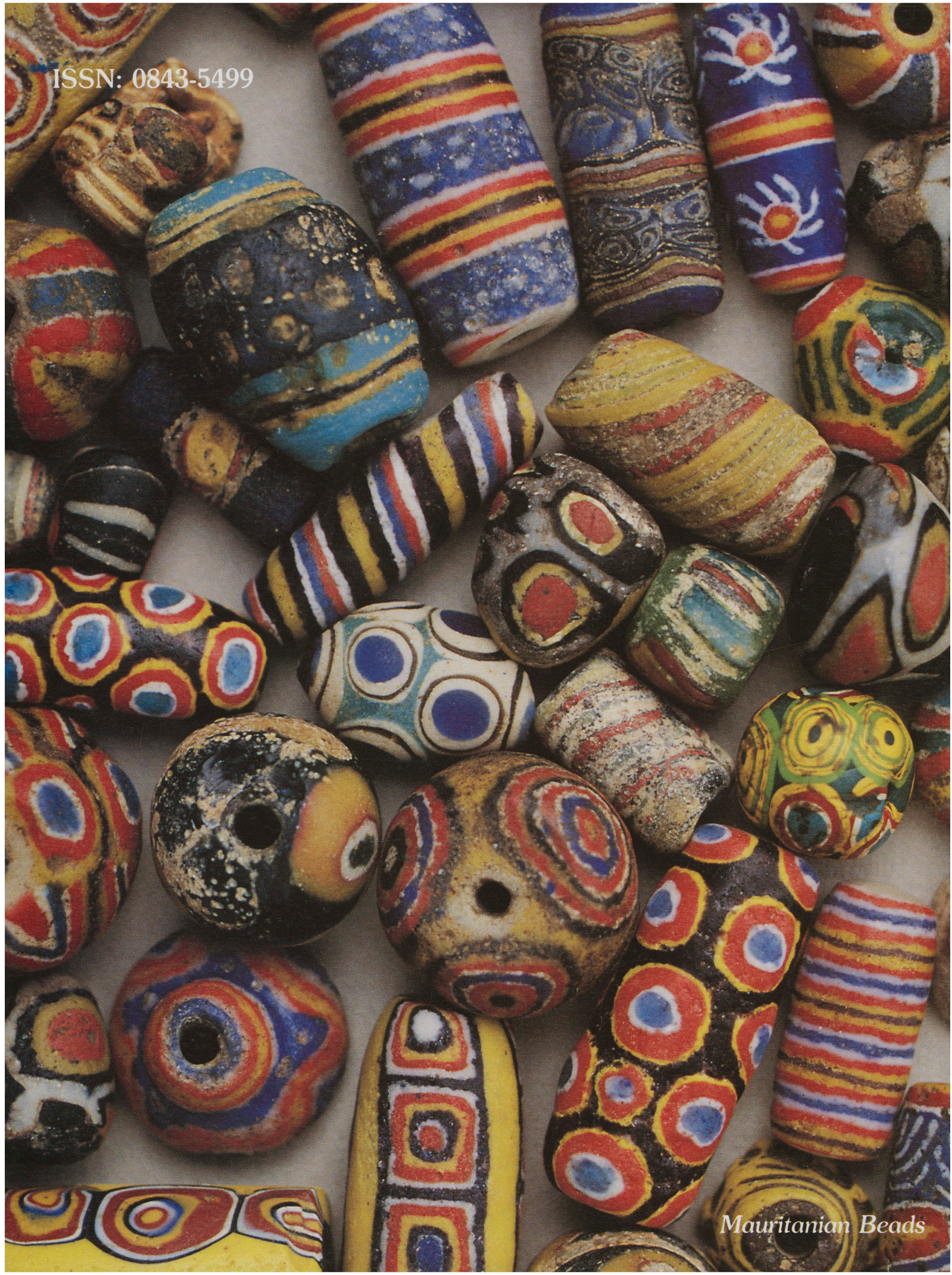
**Plate VB.** *Lun Bawang*: Necklace type a composed primarily of *let alai*.

**Plate VD.** *Lun Bawang*: "Long Tuma beads" made by Lisabeth Murang and Labo Tui.





ISSN: 0843-5499



*Mauritanian Beads*