with this region is not unnatural. But the fact that a bead type known to have been made in Egypt did not reach Scandinavia is significant. European researchers have often pointed to Egypt and the eastern Mediterranean as the origin of their superior bead finds without citing sources (e.g., Andrae 1973:156-165).

It is becoming increasingly clear that it would be unrealistic to look for one source, or a very few sources, for the high-quality beads of the 9th-10th centuries. They were made in various parts of Europe, excluding the northernmost parts of the continent, where only fairly simple beads were made, but including areas north and south of the Alps and further to the east. They were also made in various parts of the Levant, in Persia, and further east.

As yet, only a few bead types can be unequivocally associated with any of these regions and the beads of the 9th-10th centuries can be seen as a difficult and largely unsolved puzzle. "Fustat Beads" are among the few pieces which can be fitted into this puzzle with relative certainty.

References Cited

Andrae, Reinhard
1973 Mosaikaugenperlen. *Acta Praehistorica et Archaeologica* 4:101-189.

Callmer, Johan
1977 Trade Beads and Bead Trade in Scandinavia ca. 800-1000 AD. *Acta Archaeologica Lundensis* 4(11).

Davidson, Gladys R.
1952 *Corinth XII. The Minor Objects*. Princeton.

Francis, Peter, Jr.
1989 Beads of the Early Islamic Period. *Beads: Journal of the Society of Bead Researchers* 1:21-39.

Gasparetto, Astone, with R.B. Mentasti, A. Dorigato, and T. Toninato
1982 *Mille Anni del Vetro a Venezia*.

Lamm, Carl Johan
1941 *Oriental Glass of Mediaevel Date found in Sweden and the Early History of Lustre-Painting*. Wahlstrom and Widstrand, Stockholm.

Lamon, Robert S. and Geoffrey M. Shipton
1939 *Megiddo I*. University of Chicago Press, Chicago.

L'vova, Zlata
1968 The Ancient Glass Beads of Staraja Ladoga I. *Arckheologicheskij Sbornik* 10. *Materialy i issledovanija po archeologii SSSR*. The Hermitage, Leningrad (Russian text).
1970 The Ancient Glass Beads of Staraja Ladoga II. *Arckheologicheskij Sbornik* 12. *Materialy i issledovanija po archeologii SSSR*. The Hermitage, Leningrad (Russian text).
1983 The Technological Differentation of Glass Beads found in the Varninsky Burial as a Basis for their Relative and Absolute Dating. *Arckheologicheskij Sbornik* 24:90-110. *Materialy i issledovanija po archeologii SSSR*. The Hermitage, Leningrad (Russian text).

Neuburg, Frederic
1949 *Glass in Antiquity*. Salisbury Square, London.

Numismatic Art and Ancient Coins
1987 *Ancient Art of the Mediterranean World, Catalogue* 5. Zurich.

Pinder-Wilson, R.H. and George T. Scanlon
1987 Glass Finds from Fustat: 1972-1980. *Journal of Glass Studies* 29:60-71.

Riis, P.J. and Vagn Poulsen
1957 *Hama Fouilles et Recherches 1931-1938. Vol. IV, 2: Les verreries et poteries medievales*. Copenhagen.

Rütti, Beat et al.
1981 *3000 Jahre Glaskunst*. Exhibition catalogue, Kunstmuseum, Lucerne.

Shiah, N.
1946 Ancient Egyptian Beads. Unpublished Ph.D. dissertation. London University, London.

83. A POSSIBLE PROSSER T-HOLE BEAD FROM JAPAN, by Roderick Sprague (1986, 8:10-11)

In the fall of 1985, a student from Nagaokakyoshi, Japan, returned to school and presented me with a gift of a necklace made of glass beads. The necklace was given to him by a former student of his and was reported to be from a "tomb." The modern appearance of both the beads and the "original" string would make this provenience very unlikely. However, one type of bead (n = 3 strung, 1 loose) is worthy of comment.

This bead type is opaque white, basically spherical but slightly flattened at the poles, and 12.5 to 15.0 mm in diameter. It has a definite equatorial ridge. The perforation is T-shaped, 12.5 mm long for the cross bore (the cross arm of

the T) and the blind hole is 9 mm deep. The blind hole goes beyond the cross bore and makes an indentation 1.0 mm deep in the wall of the cross bore. The exterior diameter of the blind hole is 3.0 mm while the blind end is 2.0 mm. The cross bore is also tapered but less dramatically going from 2.5 mm to 2.3 mm. The interior measurements are limited to a sample of one which was broken for inspection.

The equatorial ridge is in a plane at a right angle to the cross bore, the two holes being at the poles. The blind hole thus opens upon the equatorial ridge and appears to cut it sharply as if the blind hole had been made after the basic bead form had been made. The larger end of the cross bore is granular and rougher than the rest of the bead. This trait plus the equatorial ridge both indicate the Prosser process of manufacture dating after 1840 (Sprague 1983). It is *speculated* that a normal globular Prosser bead had a blind hole plunged into it after the bead had been compressed but before it was fired. It was glazed and fired after all of the holes had been made because glaze is found equally in all openings.

The beads had been strung with wound beads both clear spherical and tubular blue-green plus claw-like or paisley-shaped beads probably formed from a wound base. My informant described these last beads as *magatama* which translates from the Japanese literally as "carved jewels."

Any other known occurrences of these Prosser T-hole beads might help in defining the geographical and temporal limits of this unusual bead.

References Cited

Sprague, Roderick

1983 Tile Bead Manufacturing. In "Proceedings of the 1982 Glass Trade Bead Conference," edited by Charles F. Hayes III. *Rochester Museum and Science Center, Research Records* 16:167-172.

84. MORE ON TILE BEADS, by Roderick Sprague (1988, 13:3-4)

In a recent article, Peter Francis, Jr., has done us all a favor by once and for all showing that the term rocaille bead has no uniform meaning and should be avoided in the bead literature. There are, however, two items in the article that are worthy of further comment.

Francis (1988:17) quotes van der Sleen (1967:114) in part thus: "...straight as a military drum...." While not germane to Francis' discussion, it should be noted that while we may understand what van der Sleen meant, that technically he is incorrect. One of the most consistent traits of tubular tile beads is their slight taper. This taper is a necessary factor to permit the easy removal of the consolidated mass of unfired clay from the cast iron forms in which they are pressed.

A second and more important point is that Francis suggests because tile beads are made of clay it is "a bit difficult to correlate" this with Sprague's (1983:169) observation "that they were made of glass." A review of my observation will show that based on **chemical** analysis, tile beads differ very little from glass beads and thus properly can be included in the study of glass beads. Also the analysis utilized in my work was with a microprobe which gives an analysis of only the surface. A review of the Prosser process shows that the final glazing is very high in quartz and gives what might best be described as a glass glaze to a high temperature fired clay body. There can be absolutely no doubt that the physical nature of glass and Prosser beads/buttons is quite different. Glass has no crystalline structure, hence is often called a semi-liquid, while Prosser products have a very definite and fairly gross crystalline structure, not one at a microscopic level or even finer as is observed in cryptocrystalline stone.

I am in press (Sprague 1989) as expressing concern and dismay that professional historical archaeologists are labeling Prosser buttons as glass buttons rather than ceramic buttons. My position is and has been that anything made by the Prosser process is correctly classified as ceramic but that because of the history of their manufacture, trade, and use and because of their chemical structure and surface appearance that tile beads are more logically studied with glass trade beads than with ceramic beads. In my experience the typical ceramic bead is a large, crudely made clay object of local hand manufacture, not a precise, uniform, mass-produced object.

References Cited

Francis, Peter, Jr.

1988 Rocaille Beads. *Bead Forum* 12:17-21.

Sleen, W.G.N. van der

1967 *A Handbook on Beads*. Musée du Verre, Liège.

Sprague, Roderick

1983 Tile Bead Manufacturing. In "Proceedings of the 1982 Glass Trade Bead Conference," edited by Charles F. Hayes III. *Rochester Museum and Science Center, Research Records* 16:167-172.

1989 Review of "A Study of Five Historic Cemeteries at Choke Canyon Reservoir. Live Oak and McMullen Counties," by Anne A. Fox. *Historical Archaeology* 23(1).