chalcolithic site in Fars, Iran, generally dated 4500 to 3500 B.C. (Langsdorf and McCowan 1972:84.17). At least one lapis lazuli cornerless cube was found in the Royal Grave of Queen Shub-ad of Ur, ca. 2500 B.C.; I know of no published references to it, but it is on display in the Archaeological Museum of the University of Pennsylvania.

After the Harappan examples, cornerless cubes in India appeared in carnelian and quartz crystal between 400 and 300 B.C. at Taxila in modern Pakistan, Tilaurakot and Vasaili in the Gangetic Valley, and Peddamaru in the south (Andhra Pradesh state). Quartz crystal, agate, shell, red jasper, shale (!), glass, and faience cornerless cubes were found at Taxila, Bagor (Rajastahan), Achchhatra and Kosambi (the Gangetic Valley), Nevasa and Navadatoli (in the Deccan), and at Peddabunkur (Andhra Pradesh) throughout the Early Historic Period.

The cornerless cube shape is amuletic at least in modern Gujarat, India. Small silver cornerless cube beads are strung with black glass beads on a chain and worn by both men and women for good luck. They are relatively expensive (10 or 12 times the minimum daily wage for a man) and are often the only form of jewelry that men wear. The Todas of the Nilgris Hills (Karnataka state) wore large (probably hollow) silver cornerless cube beads at the beginning of the century; I believe there is a picture of a couple wearing them in Thurston and Rangachari (1909).

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17. MULBERRIES AND TWISTED SQUARES: SOME QUESTIONS, by Peter Francis, Jr. (1987, 11:8-12)

Although much has been learned about glass trade bead origins in the last decade, large gaps remain, and I wish to draw attention to one. Here I link two well known bead types, though whether they share a common origin is not possible to say yet. Both are known by various names in the literature. One is called a mulberry or raspberry bead (Kidd WIId; Beck XXV.A.3.b; Roundtable 469), while the other is called a twisted square, a pentagon bead, or a faceted "five sided" bead (Kidd WIIe; Beck XIX.A.4; Roundtable 225). Since I believe we should give priority in nomenclature to the earliest name for a bead (Francis 1980), as is common in scientific fields, I refer to these as mulberries and twisted squares.

I group them together for several reasons. Both are wound beads further manipulated into shape (exactly how the mulberry beads were made is being studied; I would appreciate suggestions). Both are made of translucent glass, and all mulberry colors are found in the larger group of twisted squares (Kidd and Kidd 1970:85), to which may be added a deep gold-red. Their distributions in America are very similar, and the few analyses made suggest the glass is similar (Karklins 1983:123, 125).

At first these beads were thought to be ancient; Beck (1928:17, 27) listed them both as "Egypt, Roman Period." Although a strand of twisted squares is displayed in the Cairo Museum, to my knowledge neither type has been excavated from any ancient site, although different mulberry beads may have been (Eisen 1930:37-38). Both types are found in Indonesia (van der Sleen 1975:99-101), and I have examples bought in Iran; the twisted square is known in Egypt, Turkey (Fenstermaker 1985), Sarawak (Beck 1930:127), West Africa (Connah 1975: bead category 29), etc. Two mulberries excavated by Jean Aigner of the University of Alaska, Fairbanks, at Reese Bay, Unalaska Island, were brought by Russians between ca. 1759 to 1806 (Francis n.d.). Judging from this scanty data, both types are probably widely distributed.

In the contiguous U.S., they are found mostly along the Mississippi up to the Great Lakes, as well as Mississippi tributaries and along the Alabama River (Brain 1979:127-130). They are also found in the Northeast, as on Seneca sites (Wray 1983:45). Chronologically, Quimby (1966:86) noted their abundance in his Middle Historic Period (1670-1760). Brain's citations for five types of twisted squares (types WIIA1-5; WIIA6-8 are different) all have terminal dates between 1825 and 1833. Their *terminus a quo* are between "about" 1650 and 1700 (Brain 1979:110-111).

Mulberry beads ranged from 1699 to 1833 (eliminating the suspect early dating for the Keller site) (Brain 1979:111).

The question is: where were these beads made? Van der Sleen (1975:110) said they were both Dutch. Although the twisted squares have been found in association with glass bead factory waste (Karklins 1974:80-81, 1983; van der Made 1978:6), the mulberry beads have not (those van der Sleen has are from Indonesia).

Two other facts belie Holland as a source for all but a few twisted squares. One is their late temporal distribution, mostly after the last Dutch bead factory is said to have closed in 1698 (Karklins 1974:66). Another is their absence at Dutch sites. One would expect them at Fort Orange (Albany, New York), the major Iroquois trading post, but none were found there (Huey 1983). In the Seneca region they do not appear until 1687, after the English displaced the Dutch (Wray 1983:45).

Another potential source is Venice, but these beads are not found on any Venetian sample cards known to me; e.g., the Venetian bead book and Levin catalogue (Karklins 1982); the cards at the Museo Vetrario di Murano (slides on file at the Center for Bead Research, Lake Placid, N.Y.); and the Giacomuzzi samplers (The Bead Museum, Prescott, Arizona). However, all these cards seem to be post-1850, after the *terminus ad quem* in the American trade. In sum:

1) If these beads are Dutch, then production there must have extended beyond the end of the 17th century.

2) If they are Venetian, why did the Venetians stop making them? They were popular beads and not especially difficult to produce.

3) Were they made at some other (European?) center, of which we have only hints of their existence, such as France, Germany, England or...?

(Note: The Roundtable Classification numbers are the provisional numbers assigned to bead types in the Bead Roundtable Classification Project. They are subject to revision.)

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