providing information regarding the beads found on several unpublished VOC wrecks and for putting me in contact with the Shetland Museum. Gratitude is expressed to Mr. Tommy Watt, Assistant Curator of the Shetland Museum, Lerwick, for the kind loan of a sample of *De Liefde* beads and providing an inventory of the beads recovered from the wreck between 1964 and 1986.

References Cited

Bax, Alan and Colin J.M. Martin

1974 *De Liefde*: A Dutch East Indiaman Lost on the Out Skerries, Shetland, in 1711. *International Journal of Nautical Archaeology and Underwater Exploration* 3(1):81-90.

Beck, Horace C.

1928 Classification and Nomenclature of Beads and Pendants. *Archaeologia* 77:1-76.

Francis, Peter, Jr.

1979 The Story of Venetian Beads. *The World of Beads Monograph Series* 1.

Karklins, Karlis

1974 Seventeenth Century Dutch Beads. *Historical Archaeology* 8:64-82.

1983 Dutch Trade Beads in North America. In "Proceedings of the 1982 Glass Trade Bead Conference," edited by Charles F. Hayes III. *Rochester Museum and Science Center, Research Records* 16: 111-126.

1985 Guide to the Description and Classification of Glass Beads. In *Glass Beads*, 2nd ed., pp. 85-118. Parks Canada, Studies in Archaeology, Architecture and History.

Kidd, Kenneth E. and Martha A. Kidd

1970 A Classification System for Glass Beads for the Use of Field Archaeologists. *Canadian Historic Sites: Occasional Papers in Archaeology and History* 1:45-89.

Miksic, John N.

1982 Current Research: Indonesia. Society for Historical Archaeology *Newsletter* 15(2):44-45.

Price, Richard and Keith Muckelroy

1977 The *Kennemerland* Site: The Third and Fourth Seasons, 1974 and 1976. An Interim Report. *International Journal of Nautical Archaeology and Underwater Exploration* 6(3):187-218.

Quimby, George I.

1966 *Indian Culture and European Trade Goods*. University of Wisconsin Press, Madison.

40. EUROPEAN CHICKEN EGG BEADS, by Karlis Karklins (1988, 12:24)

Museums are frequently fascinating places for bead researchers to spend a few hours. You just never know what new material or use you will encounter. Take a recent visit to the Musee de l'Homme in Paris. As I neared the end of the European gallery, I spied a colorful stuffed figure about 4.5 ft. high that had a cloth head and wore a black skirt. The front of the effigy was festooned with eight strands of chicken eggs strung end to end and five strands of ca. l-inch-square pieces of colored cloth. The caption read:

> In Czechoslovakia, this straw figure is called "Smartka" meaning "Death." Its crudely painted face represents a death's head which symbolizes the end of winter. The Sunday before Palm Sunday, young girls carry it in a procession to the river where they drown it.

Does anyone know anything more about these egg beads? Are they also used elsewhere in Europe and in similar ceremonies? Are the eggs ever colored or decorated like Easter eggs? What is their history?

41. THE SUITABILITY OF THE ISCC-NBS CENTROID COLOR CHARTS FOR DETERMINING BEAD COLORS, by Karlis Karklins (1989, 14:8-12)

Researchers interested in comparing bead assemblages from archaeological sites are not infrequently frustrated in their efforts by a lack of adequate descriptions of the recovered specimens. Ever-increasing use of the expanded Kidd and Kidd (1970) classification system (Karklins 1985) has greatly improved the situation but color determination remains a problem. Because the *Color Harmony Manual* (Container Corporation of America 1958) used by the Kidds to identify bead colors is relatively obscure, many individuals have been using the color plates in the Kidds' publication to identify their specimens. This is *not* recommended practice as the illustrations, being reproductions of shaded colored-pencil drawings, are not accurate enough for this purpose, especially in the 1970 French edition and the 1983 reprint in which the colors are substantially different from the 1970 English edition. In addition, the number of recorded bead colors has more than doubled since the Kidds' system was first published so their inventory is far from complete.

Ideally, a bead should be compared directly to the glossy side of the color chips in the *Color Harmony Manual* or the *Munsell Book of Color* (Munsell Color 1976), the relevant colors in which have been correlated to those in the *Manual* (Table 1). Unfortunately, not only are both of these

Table 1. Color Equivalence Chart: Color Harmony Manual/Munsell/ISCC-NBS Centroid Color Charts (Colors Recorded by the Kidds are Italicized).

Munsell		Color Harmony Manual		ISCC-NBS			
Color	Code	Code	Name	No.	Name	Munsell Value	
l0.0Y	8/10	1 la	*Lemon Yellow*	98	brilliant greenish yellow	9.8Y	8/10
l0.0Y	7/5	1 gc	*Citron*	105	grayish greenish yellow	9.0Y	7/4
l0.0Y	5/6	1 le	Olive Yellow	103	dark greenish yellow*	9.4Y	6/6
l0.0Y	4/4	1 ni	Olive	107	moderate olive*	7.6Y	4/5
5.0Y	9/2	2 ba	Pearl	92	yellowish white	4.5Y	9/1
5.0Y	8/8	1-1/2 ga	Sunlight Yellow	83	brilliant yellow	4.4Y	9/9
5.0Y	4/4	2 lg	*Mustard Tan*	---			
2.5Y	9/3	2 ca	*Light Ivory*	89	purplish yellow	4.7Y	9/4
2.5Y	7/8	2 ic	*Light Gold*	87	moderate yellow	3.8Y	7/6
2.5Y	6/8	2 ne	*Mustard Gold*	88	dark yellow	3.9Y	6/6
2.5Y	4/6	2 pi	Mustard Brown	95	moderate olive brown	2.7Y	4/6
2.5Y	2/2	2 pn	*Dark Brown*	96	dark olive brown	2.0Y	2/2
l0.0YR	7/8	3 lc	*Amber*	69	deep orange yellow	8.6YR	6/12
l0.0YR	5/6	3 le	*Cinnamon*	77	moderate yellowish brown*	9.5YR	4/4
l0.0YR	4/l	5 ih	Lead Gray	---			
7.5YR	4/4	4 ng	*Maple*	58	moderate brown*	5.6YR	4/4
5.0YR	6/l2	4 nc	Russet Orange	51	deep orange	4.1YR	5/11
5.0YR	5/1	5 fe	Ashes	63	light brownish gray	7.0YR	5/1
2.5YR	5/10	5 lc	Copper	54	brownish orange**	4.1YR	5/8
2.5YR	4/10	5 pe	Terra Cotta	---			
2.5YR	2/2	7 pn	*Dark Rose Brown*	65	brownish black**	7.8YR	1/1
l0.0R	5/10	6 lc	*Coral*	38	dark reddish orange*	9.3R	4/9
l0.0R	4/8	6 ne	*Redwood*	40	strong reddish brown	0.3YR	3/10
l0.0R	3/8	6 pg	Barn Red	---			
l0.0R	3/2	6 ni	Taupe Brown	47	dark grayish reddish brown*	9.0R	2/2
l0.0R	2/4	6-1/2 pl	Deep Red Brown	44	dark reddish brown	9.6R	1/4
7.5R	4/14	7 pa	*Scarlet*	11	vivid red*	5.0R	4/15
7.5R	3/8	6-1/2 ne	Brick Red	---			
5.0R	8/4	7 ca	Baby Pink	5	moderate pink**	2.6R	7/5
5.0R	7/8	7 ga	*Light Cherry Rose*	2	strong pink*	1.2R	7/8
5.0R	5/l2	7-1/2 la	Light Red	12	strong red	4.0R	4/12
5.0R	3/6	7 ng	Old Wine	16	dark red*	4.0R	3/7
2.5R	3/10	8 pc	*Ruby*	13	deep red*	5.1R	3/10
l0.0RP	8/4	8 ca	Pale Pink	4	light pink**	2.6R	8/4
10.0RP	4/6	8 le	*Rose Wine*	262	grayish purplish red*	7.0RP	4/5
2.5RP	7/4	9 ec	Orchid Mist	253	grayish purplish pink	3.7RP	7/4
l0.0P	4/6	10 le	Heather	242	dark reddish purple**	1.3RP	3/5
7.5P	4/8	11 lc	*Amethyst*	218	strong purple	6.5P	4/9
5.0P	5/4	11 ge	Lilac	228	grayish purple**	8.1P	5/3
7.5PB	4/11	13 la	*Bright Dutch Blue*	196	strong purplish blue	8.0PB	4/11
7.5PB	2/10	12-1/2 pc	Royal Blue	194	vivid purplish blue	7.8PB	2/12
7.5PB	2/7	13 pg	*Bright Navy*	197	deep purplish blue	7.8PB	2/8
7.5PB	2/5	12-1/2 ng	Dark Blue	---			

Table 1. Continued

Munsell Color Code		Color Harmony Manual Code	Color Harmony Manual Name	ISCC-NBS No.	ISCC-NBS Name	ISCC-NBS Munsell Value	
6.25PB	3/12	13 pa	*Ultramarine*	---			
5.0PB	5/7	13-1/2 ic	Copen Blue	---			
5.0PB	3/6	13-1/2 ng	Medium Blue	---			
2.5PB	6/9	14 ia	*Bright Copen Blue*	181	light blue	1.6PB	6/7
2.5PB	5/4	14 ie	*Shadow Blue*	186	grayish blue**	0.2PB	4/3
2.5PB	3/8	14 pc	Deep Blue	179	deep blue	2.8PB	3/8
l0.0B	6/3	15 ge	Mist Blue	185	purplish blue*	0.6PB	6/3
l0.0B	2/4	14 pi	*Dark Navy*	183	dark blue**	2.2PB	2/9
7.5B	8/2	15 ca	*Pale Blue*	184	vivid purplish blue**	1.5PB	8/3
7.5B	6/6	15 ic	Sky Blue	---			
7.5B	6/2	16 ge	Light Gray Blue	---			
7.5B	4/8	15 nc	*Cerulean Blue*	---			
7.5B	4/4	16 lg	Medium Shadow Blue	---			
7.5B	3/3	15 ni	*Dark Shadow Blue*	187	dark grayish blue*	9.2B	3/2
5.0B	8/4	16 ea	*Light Aqua Blue*	171	very light greenish blue	4.0B	8/4
5.0B	6/6	16 ic	*Robin's Egg Blue*	172	light greenish blue**	4.5B	6/5
5.0B	5/7	16 lc	*Bright Blue*	173	moderate greenish blue**	4.7B	4/5
2.5B	7/2	17 ec	Dusty Aqua Blue	---			
2.5B	6/7	17 ia	Bright Aqua Blue	---			
2.5B	6/4	18 gc	*Agua Blue*	172	light greenish blue**	4.5B	6/5
2.5B	5/5	17 le	Medium Turquoise Blue	173	moderate greenish blue	4.7B	5/5
l0.0BG	4/8	17 pa	*Turquoise*	---			
7.5BG	8/4	19 ea	Light Aqua Green	---			
7.5BG	6/8	18 la	Bright Turquoise	---			
7.5BG	6/6	19 ic	Aqua Green	---			
7.5BG	6/3	19 ge	Dusty Aqua Green	---			
5.0BG	8/2	19 ba	Ice Blue	---			
5.0BG	6/3	20 ge	Light Blue Spruce	---			
5.0BG	4/8	20 nc	Turquoise Green	160	strong bluish green	4.6BG	4/8
5.0BG	3/6	20 ng	*Teal Green*	165	dark bluish green	4.9BG	3/5
l0.0G	6/6	21 ic	Light Jade Green	---			
l0.0G	5/10	21 nc	*Emerald Green*	---			
l0.0G	4/5	21 ng	Dark Jade Green	---			
5.0G	5/4	22 ie	*Surf Green*	145	moderate green*	6.3G	4/5
2.5G	9/2	22 ca	Pale Green	---			
2.5G	7/8	22 ia	*Bright Mint Green*	140	brilliant green*	6.2G	7/8
2.5G	5/10	22 nc	Bright Green	139	vivid green	3.2G	5/11
2.5G	3/6	22 pi	Dark Green	146	dark green*	6.6G	3/5
l0.0GY	6/6	23 ic	*Apple Green*	135	light yellowish green*	0.7G	7/5
l0.0GY	5/10	23 pe	Grass Green	131	strong yellowish green	0.4G	5/9
l0.0GY	4/4	23 ni	*Dark Palm Green*	137	dark yellowish green	0.6G	4/5
7.5GY	6/6	24 le	Leaf Green	120	moderate yellow green*	4.8GY	6/5
7.5GY	4/3	24 li	Sage Green	---			
2.5GY	4/4	24-1/2 ni	Olive Green	---			
N	9/0	a	*White*	263	white*	2.5PB	10/0
N	8/0	b	*Oyster White*	264	light gray*	6.7Y	7/0
N	7/0	c	*Light Gray*	---			
N	1/0	p	*Lamp Black*	267	black	N	0.8/0

items difficult to find in libraries or research laboratories, but the *Manual* has been out of print since about 1972 while the high cost of the *Munsell Book of Color* ($640.00 U.S.) precludes its purchase by all but the most dedicated researchers. Individual Munsell color chips are available but at $1.70 each, the 91 recorded colors listed in Table 1 would still cost a hefty $155.00.

Seeking a less expensive alternative, I examined the Centroid Color Charts prepared by the Inter-Society Color Council–National Bureau of Standards (ISCC-NBS) and selling for $38.00 U.S. The 18 charts, each with from 10 to 29, glossy, one-inch-square color chips, exhibit 62 of the 91 recorded bead colors. Thirty of these are exact or near-exact matches, 21 are very close to matching (marked with an asterisk in Table 1), and 11 qualify as marginal matches (a double asterisk in Table 1). The exact Munsell values for each of these Centroid colors is provided in Table 1 so that the reader can see exactly how close the match is for each color.

In that over half of the recorded bead colors are represented in the ISCC-NBS charts, I consider them a useful alternative to the *Color Harmony Manual* and *Munsell Book of Color*, but only if supplemented by Munsell chips for the 29 unmatched colors. At $38 for the charts and around $50 for the required Munsell chips, you can accurately determine the color of practically every bead that you will ever encounter for less than $90.

The set of ISCC-NBS Centroid Color Charts (SRM 2106) may be purchased for $38.00 from the Office of Standard Reference Materials, Room B311, Chemistry Building, National Bureau of Standards, Gaithersburg, MD 20899.

[Editor's note: The price of the *Munsell Book of Color, Glossy Edition* has increased to $945.00 and it is uncertain whether individual color chips are still available.]

References Cited

Container Corporation of America
1958 *Color Harmony Manual*, 4th ed. Chicago.

Karklins, Karlis
1985 Guide to the Description and Classification of Glass Beads. In *Glass Beads*, pp. 85-118. Studies in Archaeology, Architecture and History, Ottawa.

Kidd, Kenneth E. and Martha A. Kidd
1970 A Classification System for Glass Beads for the Use of Field Archaeologists. *Canadian Historic Sites: Occasional Papers in Archaeology and History* 1: 45-89. Reprinted in "Proceedings of the 1982 Glass Trade Bead Conference," edited by Charles F. Hayes III, *Rochester Museum and Science Center, Research Records* 16: 219-257.

Munsell Color
1976 *Munsell Book of Color, Glossy Finish Collection*. Macbeth Division, Killmorgen Corporation, Baltimore.

42. ARCHAEOLOGICAL EVIDENCE FOR BEADMAKING IN RIGA, LATVIA, DURING THE 13TH-14TH CENTURIES, by Karlis Karklins (1991, 18:11-13)

Archaeological excavations conducted in the 1970s at a site on Trokšņu (Noise) Street in the old section of Riga, the capital of Latvia, uncovered evidence of glass beadmaking there during the late 13th and 14th centuries (Caune 1983:102-103). Recovered from an area approximately 50 m^2 at the foot of a defense wall, the evidence included: 1,520 small round beads of opaque glass (most of these were deformed and represent manufacturing waste; Fig. 1); 9 intact crucibles; 149 ceramic crucible fragments with glass covering their surfaces; 474 sherds of vessels composed of coarse gravelly clay that had a thick layer of glass adhering to their interior faces; 293 variously sized chunks of glass; and ca. 150 brick fragments that exhibited traces of glass on their surfaces.

The archaeological deposit was composed of a dark, highly organic soil interspersed with charcoal, ash, or burned horizons. The recovered artifacts were concentrated in these lenses.

As none of the excavation units contained any structural remains of a glassworks, it appears that the works were located on the opposite side of Trokšņu Street. Wasters were thrown in an unoccupied area along the defense wall.

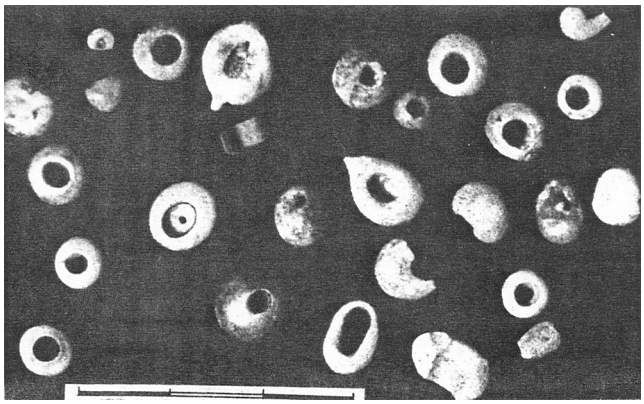

Figure 1. Reject glass beads from the Trokšņu Street glassworks in Riga, Latvia (Caune 1983:100, Fig. 16).