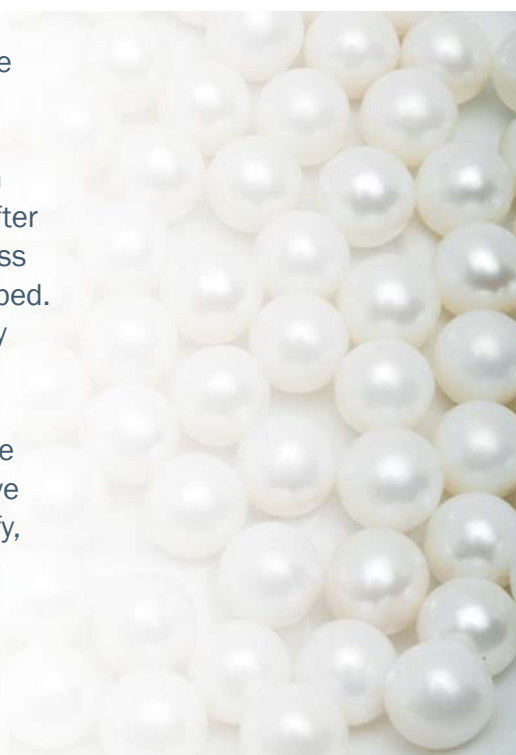


Appearance of new bead material in cultured pearls

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Abstract: A range of different materials has already been used as cores in beaded cultured pearls, and now two new alternative options, baroque shaped shell beads and Chinese freshwater cultured pearls, are being used. Experiments with beads of the latter, approximately 6.5 mm across, have been carried out with marine *Pinctada maxima* and *Pinctada margaritifera* oysters. After 13 months, nearly 200 pearls of each kind were harvested. Cross sections and further observations of resulting pearls are described. X-radiographs and X-ray microtomography are found to generally deliver clear evidence for identification. These pearls have been found to be very suitable for subsequent drilling. Natural pearls also have been used as nuclei for producing cultured pearls. The material used is either non-nacreous, brown or of an unattractive appearance. This new kind of cultured pearl is difficult to identify, because the radiographic structures of the natural cores are masking these cultured pearls.

Keywords: baroque-shaped beads, bead nucleus, Chinese freshwater cultured pearls, cultured pearls, South Sea cultured pearls, Tahiti cultured pearls, X-ray microtomography



Introduction

Techniques concerning production of cultured pearls have been described in a number of recent books and papers (Müller, 1997; Hänni, 2002; Strack, 2006; Southgate and Lucas, 2009). A number of options for pearling can be selected and combined to produce cultured pearls successfully, and these are summarized in *Table I*.

Traditionally, most beads for cultured pearls have been manufactured from shell material from the Mississippi area, USA (pigtoe, washboard, butterfly, three ridge, dove shell) but since production is in decline and prices are rising, alternative materials are being tested. Recently, an excellent paper comparing different

bead materials used in cultured pearls was published by Superchi *et al.* (2008) in which the following materials are mentioned: banded freshwater mother-of-

pearl, banded saltwater mother-of-pearl, Tridacna shell and Bironite. The use of lauegrams to detect the structures of beads has been practised for more than

Table I: Possible combinations of parameters to produce cultured pearls – the two major ways are given in blue.

Host and medium	Pearl location in the body	Presence of bead	Examples and comments
Oyster saltwater	gonad-grown	yes	Akoya, Japan; Tahiti; South Sea
		no	'keshi', bead rejected
	mantle-grown	no	new type, baroque shape
		yes	not yet encountered
Mussel freshwater	mantle-grown	no	Biwa, Japan; China; USA
		yes	Chinese, 'coin bead', round
	gonad-grown	no	not yet encountered
		yes	not yet encountered