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 Interlaken

Tokki Pearls:


**Additional cultured pearls
 formed during pearl cultivation:
 External and internal structures**

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“Tokki”
 is a Japanese term
 to describe small
 „bumps“
 (or additional
 cultured pearls)
 attached to
 a larger beaded
 cultured pearl.

Tokki pearl



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Tokki pearl

We can distinguish three types of Tokki pearls:



Type A
with an irregular cavity
connected to the bead of
the larger cultured pearl



Type B
with an irregular cavity
(„moustache“)
surrounded by nacre

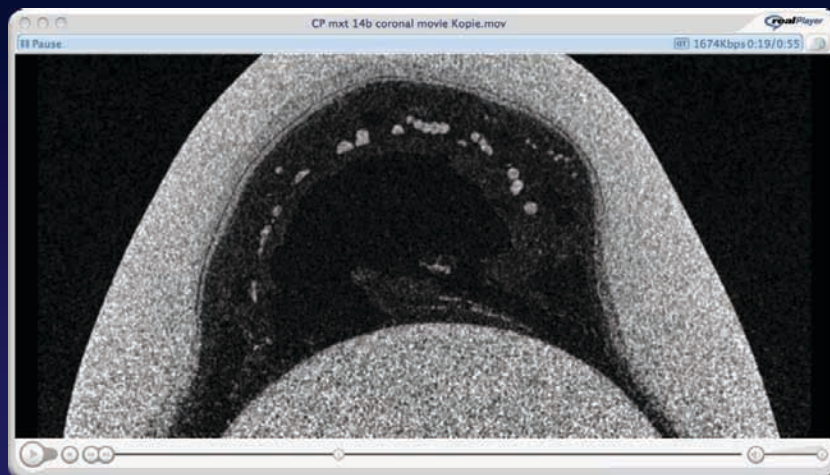


Type C
with a small additional
cultured pearl

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Tokki pearl type A



X-ray computed microtomography (coronal sections): Tokki mxt 14b

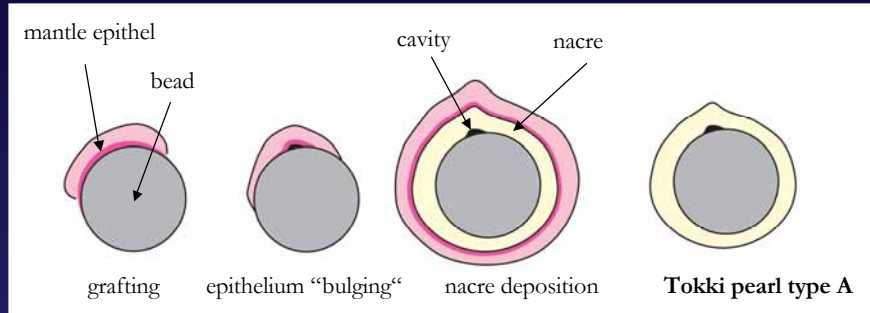
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Models of Tokki pearl formation

Tokki Type A:

First generation



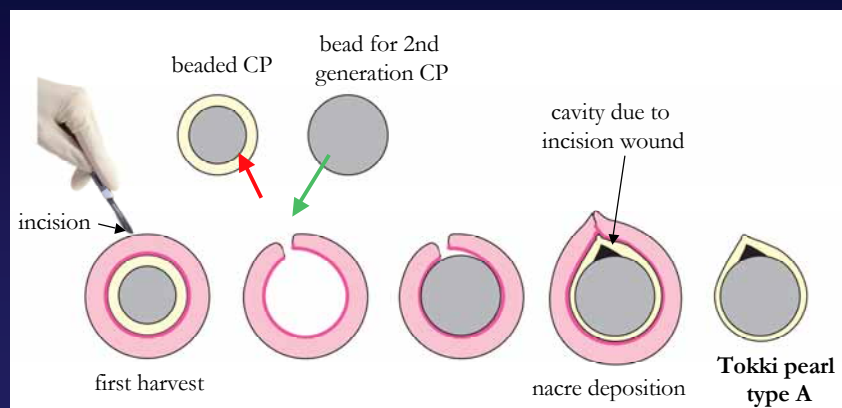
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Models of Tokki pearl formation

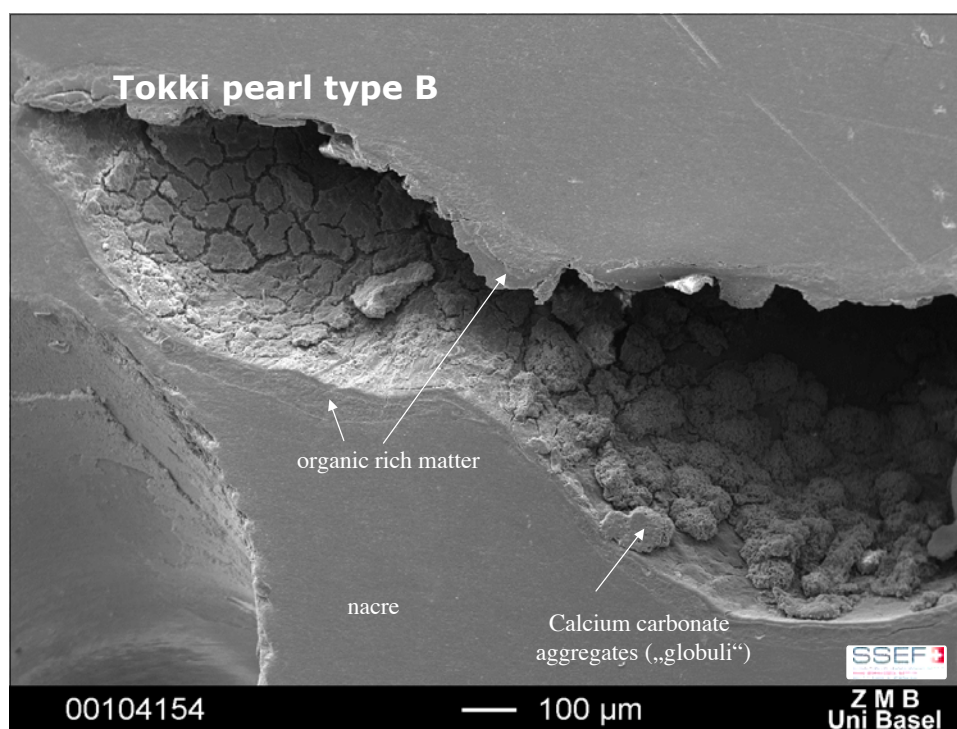
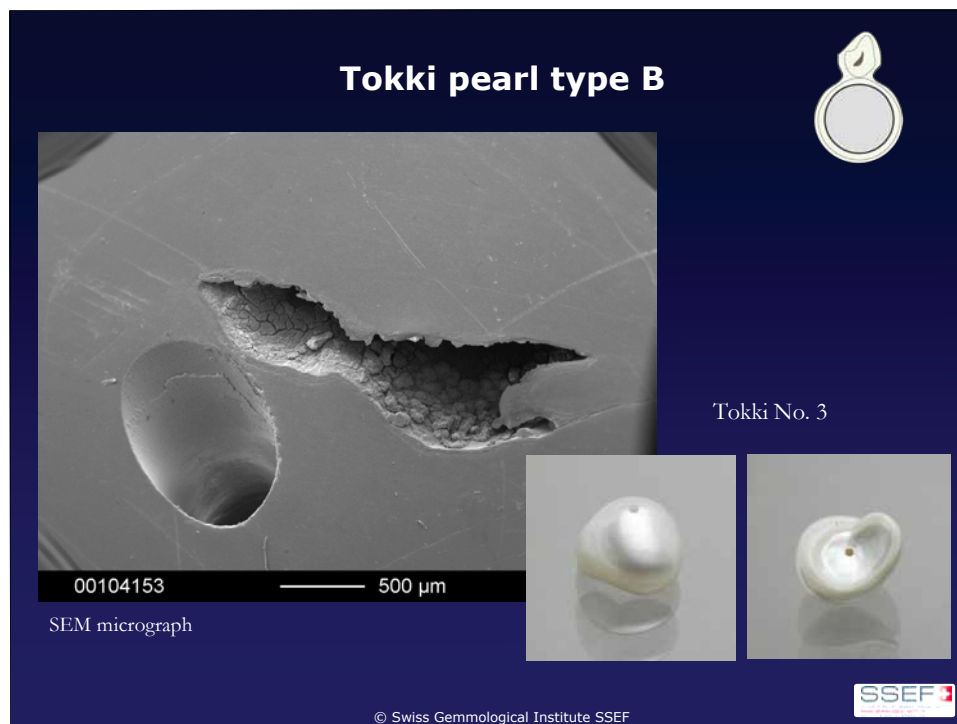
Tokki Type A:

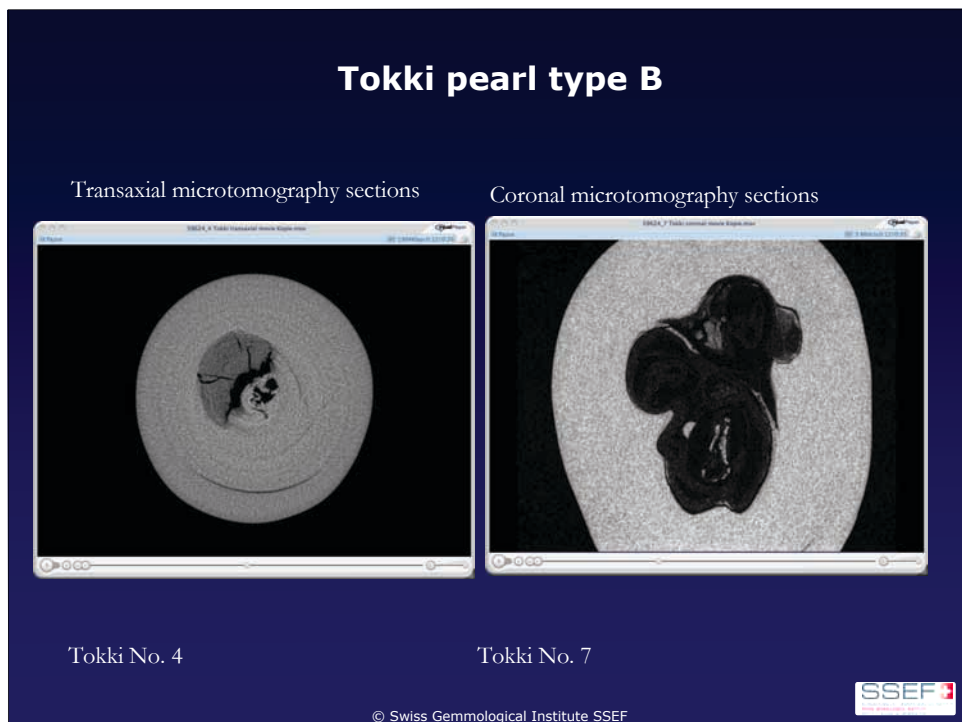
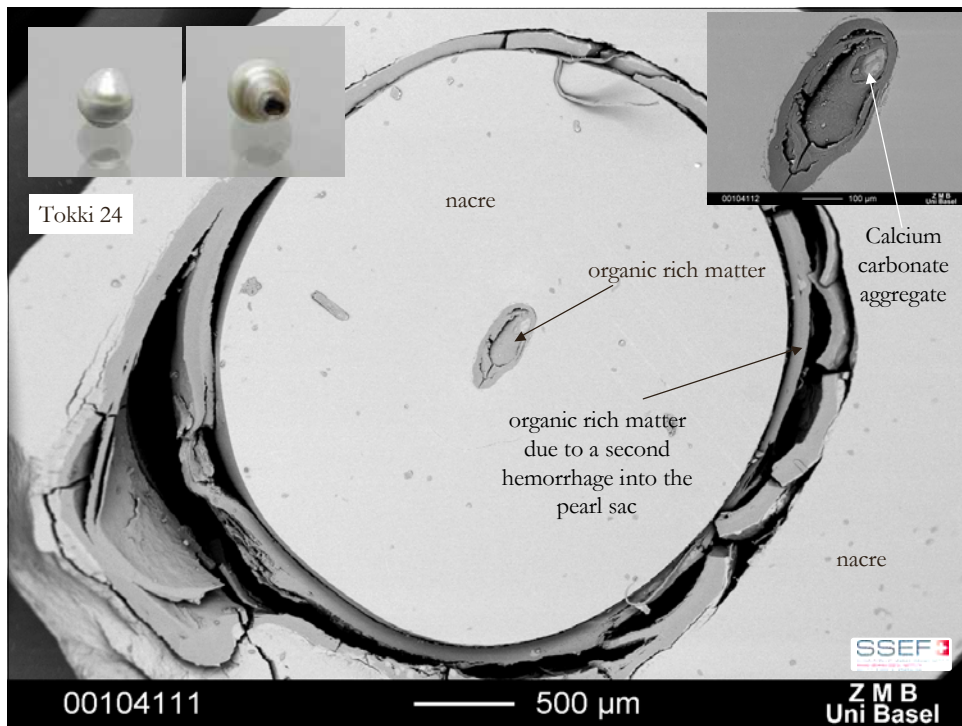
Second generation



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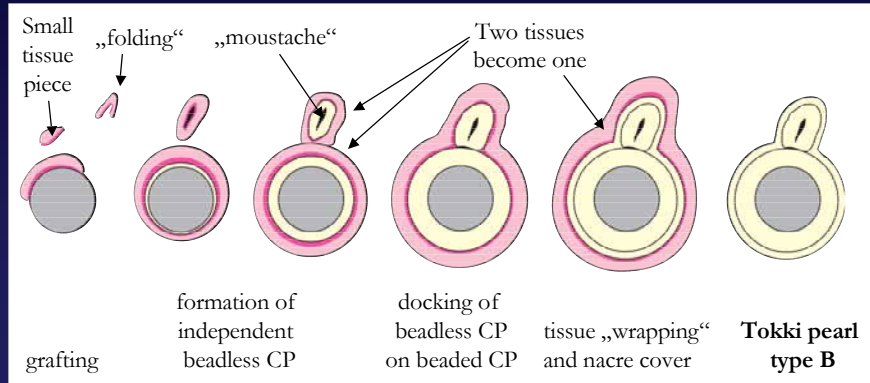




Models of Tokki pearl formation

Tokki Type B:

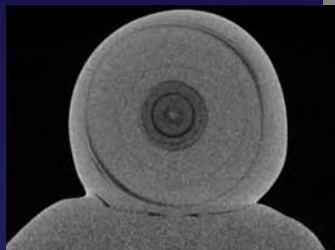
First generation



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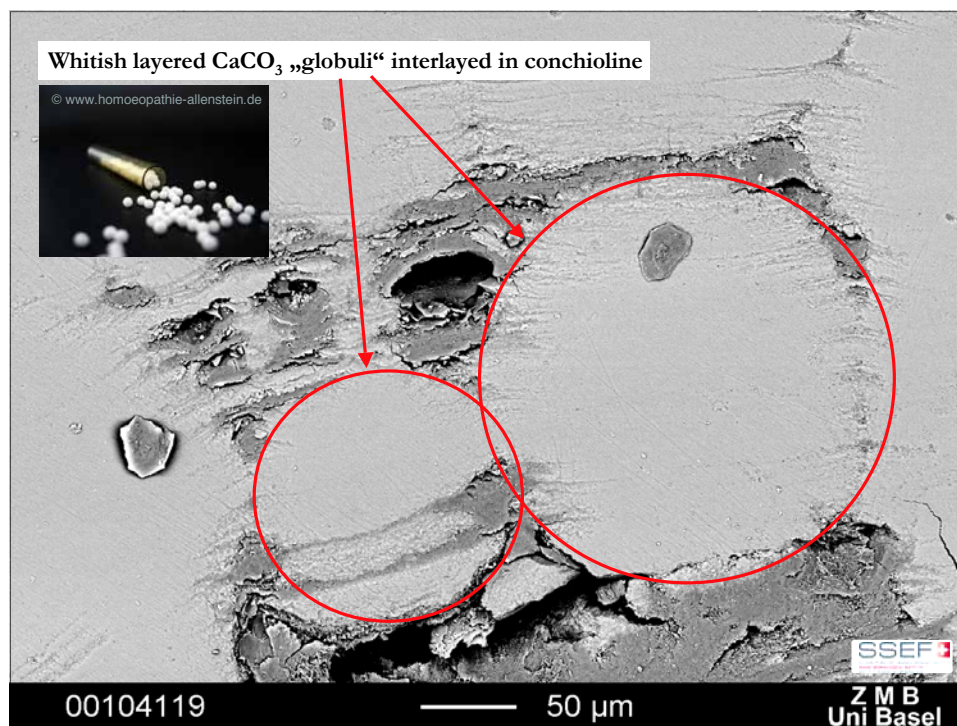
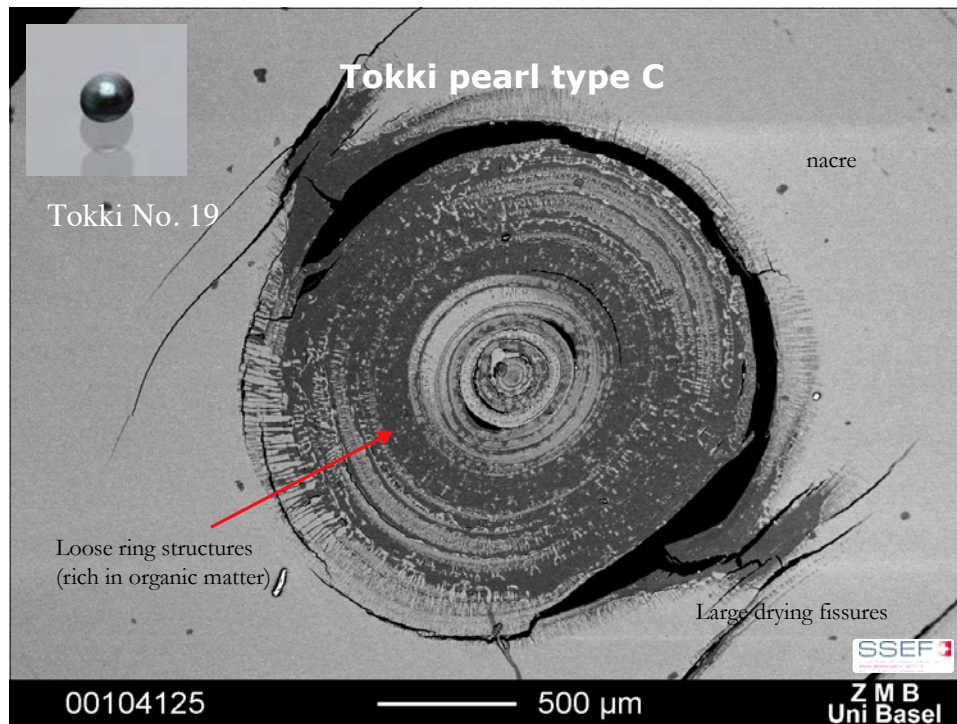


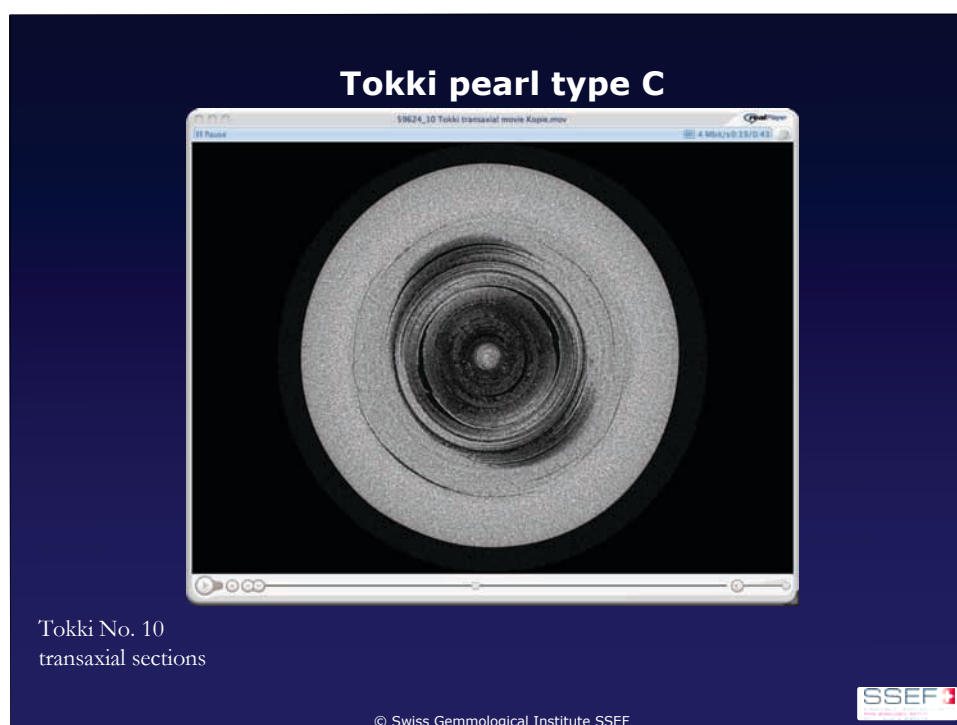
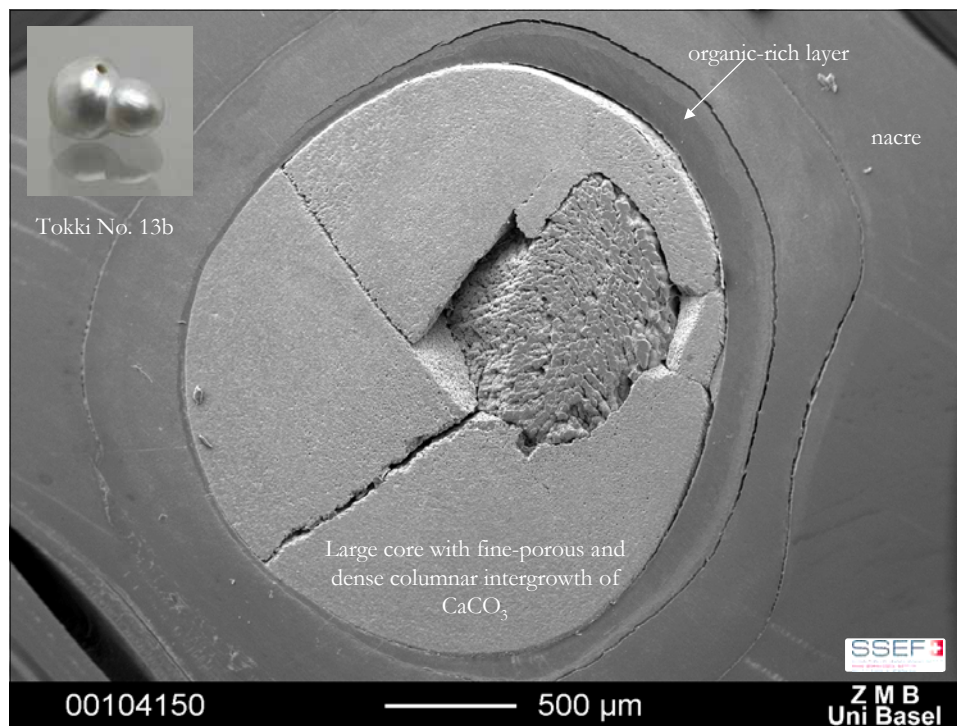
Tokki pearl type C



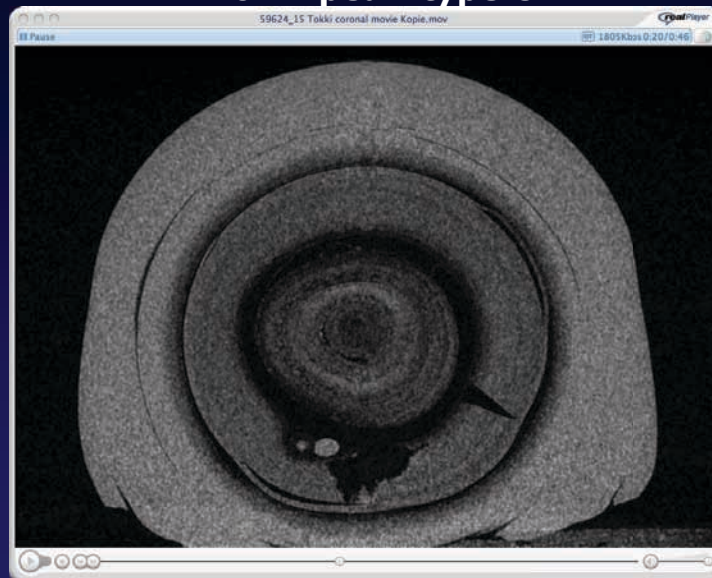
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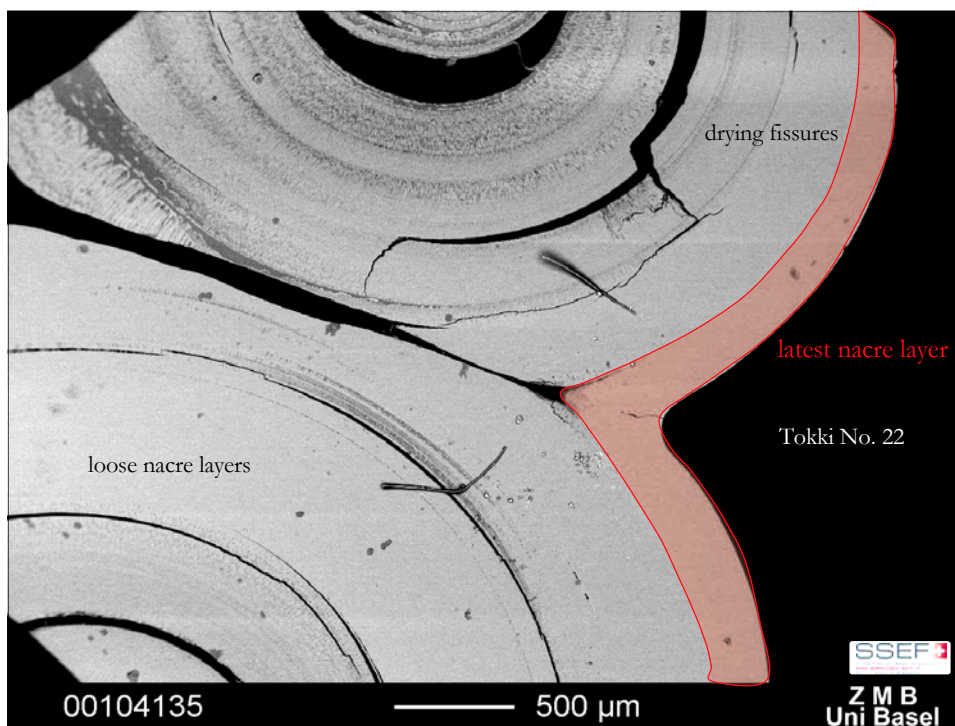


Tokki pearl type C



Tokki No. 15, coronal sections

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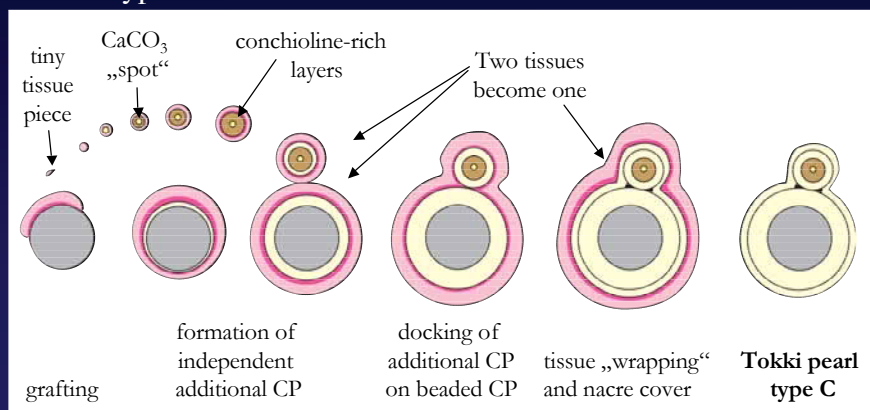
Soap bubbles....



Models of Tokki pearl formation

Tokki Type C:

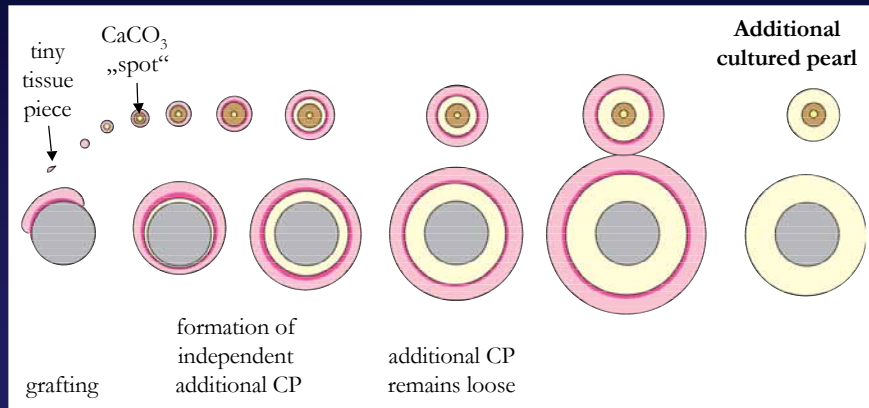
First generation



Pertinence for pearl testing

Additional cultured pearl formation:

First generation

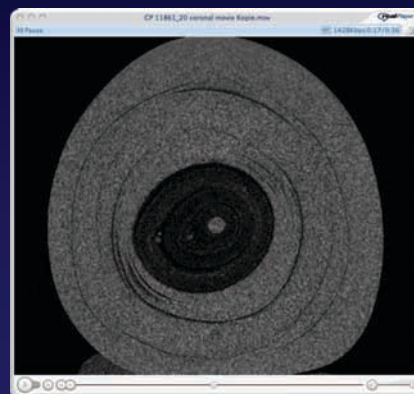


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Pertinence for pearl testing

Detection of additional cultured pearls !



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Pertinence for pearl testing

Natural or cultured pearls ?

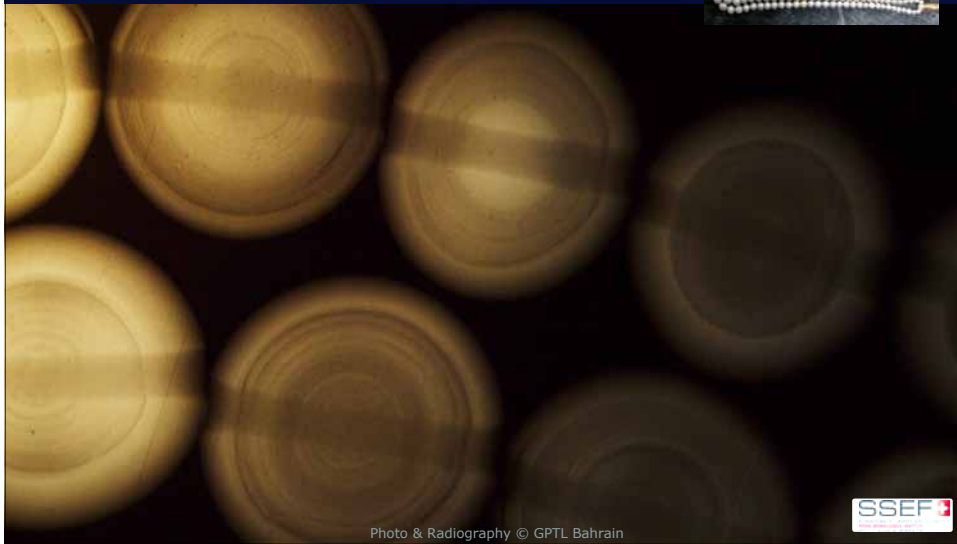


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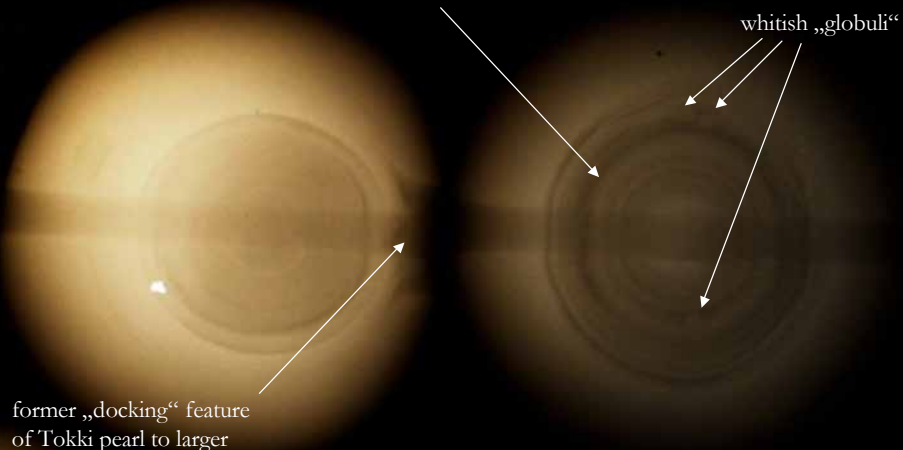


Pertinence for pearl testing



Loose ring structures (conchioline-rich)

whitish „globuli“



former „docking“ feature
of Tokki pearl to larger
beaded CP pearl

Photo & Radiography © GPTL Bahrain



Pertinence for pearl testing



whitish globuli



White CaCO_3 central spot

Photo & Radiography © GPTL Bahrain

Conclusions

Tokki pearls are a by-product of pearl cultivation

We distinguish three types of tokki pearls (cultured pearls) depending on their internal structures.

Tokki pearls may fall from the larger cultured pearl during harvesting or even not attach to the cultured pearl at all; thus be present as loose additional cultured pearl!

Tokki pearls (and additional cultured pearls) generally are characterised by loose ring structures, distinct drying fissures, a calcium carbonate central core surrounded by organic-rich layers, and often irregularly distributed small calcium carbonate spheres („globuli“)

Using radiography and microtomography, Tokki pearls and additional cultured pearls can be detected.

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Thank you for your attention



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