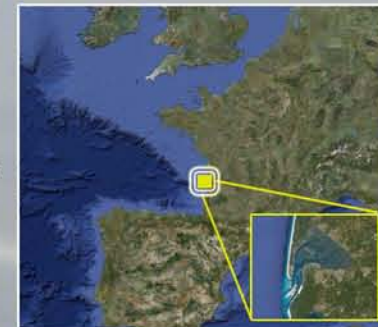


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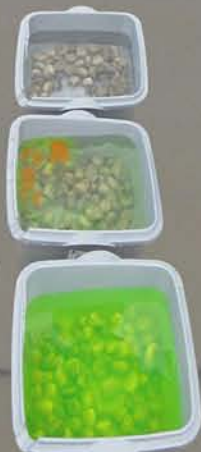


Arcachon Bay is the first French field of Japanese carpet shell (*Ruditapes philippinarum*) with an annual production amounting to 1000 tons on average. In order to improve the stock management, an *in situ* experimentation of chemical marking, using calcein, has been involved to determinate the periodicity of increment deposition and the optimal conditions of chemical marking. Later on, daily growth rates would be analysed regarding to environmental parameters to increase our knowledge of this species.

Ruditapes philippinarum

Materials and Methods

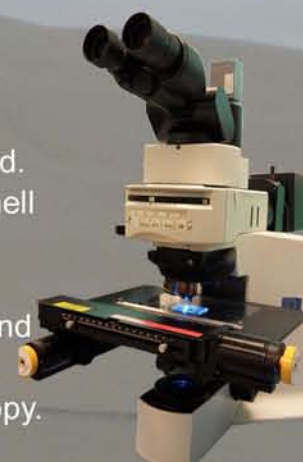
- Japanese carpet shell were collected and divided into groups of 100 animals (including control group) which size distribution spread over a large range.



- Identified groups were marked by immersion in a calcein solution (CAS 1461-15-0), using different concentrations and exposure times, then replaced *in situ* in different compartments.



- 100 days later, they were removed and sacrificed. One valve of each shell was embedded in epoxy resin, sectioned, polished and observed under fluorescence microscopy.



- Growth increments were analysed using TNPC software (Numerical Treatment of Calcified Pieces).



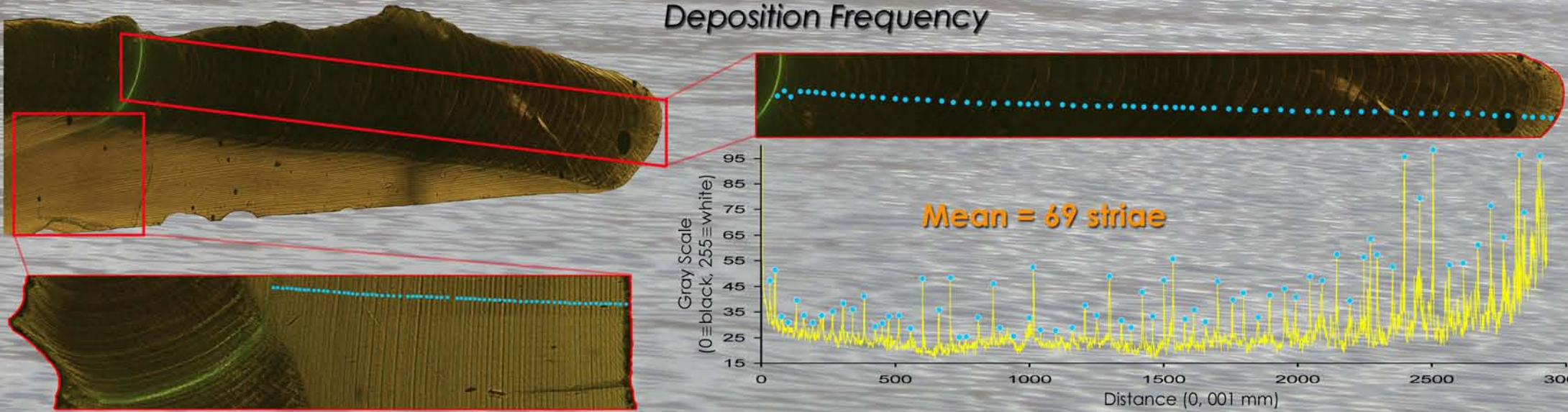
Calcein Marking

ventral margin

hinge



Deposition Frequency



All marking conditions realized have been successful, what corroborate others anterior studies (Fujikura *et al.*, 2003 ; Poulain *et al.*, 2011) for exposure time of 3 hours and concentration of 150 mg.L⁻¹ at least.

Time of experience has been lasted for 38 days, comprising of 73 tides. The mean striae number observed between the fluorescent band and the ventral margin is about 68. Consequently, microgrowth increments deposition has a tidal rhythmicity.

Conclusion

- + Effectiveness of calcein marking from 30 minutes exposure time at C = 50 mg.L⁻¹
- + Validation of a tidal periodicity of increment formation

Perspectives

- + to develop a growth model considering inter-season and inter-site variations
- + to analyse the influence of environmental parameters on japanese carpet shell growth

Fujikura, K., Okoshi, K. & Naganuma, T., 2003. Strontium as a marker for estimation of microscopic growth rates in a bivalve. *Mar Ecol Prog Ser* **257** : 295-301.
Poulain, C., Lorrain, F., Flye-Sainte-Marie, E., Amice, E., Morize, E. & Paulet, Y-M., 2011. An environmentally induced tidal periodicity of microgrowth increment formation in subtidal populations of the clam *Ruditapes philippinarum*. *Jour Exp Mar Biol and Ecol*, **397** : 58-64.