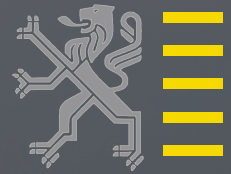


Experimental comparison of 4 preparation techniques on 2 structures for age-estimation of Rajidae: a case study on *Raja clavata*



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Rajidae in the Belgian fisheries

Belgium's 2012 quota for skates and rays were the 2nd largest in the North Sea & Eastern Arctic (IIa, IV & VIId) and the 5th largest in the North East Atlantic (VIab, VIIa-c & VIIe-k). Rajidae were 3rd in the list of fish landed by the Belgian fleet in 2011 in order of their landed weight. This indicates the importance of skates and rays for the Belgian commercial fisheries.

Management of the stock

In 2011, the Commission and the Council urged Member States to improve data availability for data limited stocks including all skates and rays. Insufficient information on the catch-compositions of the elasmobranchs impede the analyses necessary for sustainable management.

Growth rate & Age structure

Growth rate and age structure are important life history parameters. Rajidae are cartilaginous fish and have no otoliths for ageing. Both vertebral centra and dermal denticles of elasmobranchs show concentric band patterning, which probably reflect the individual's growth.

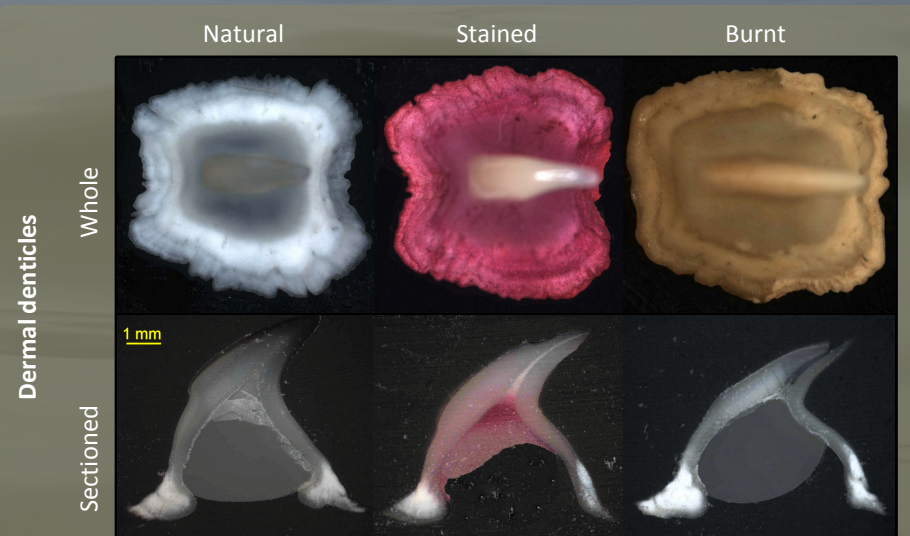
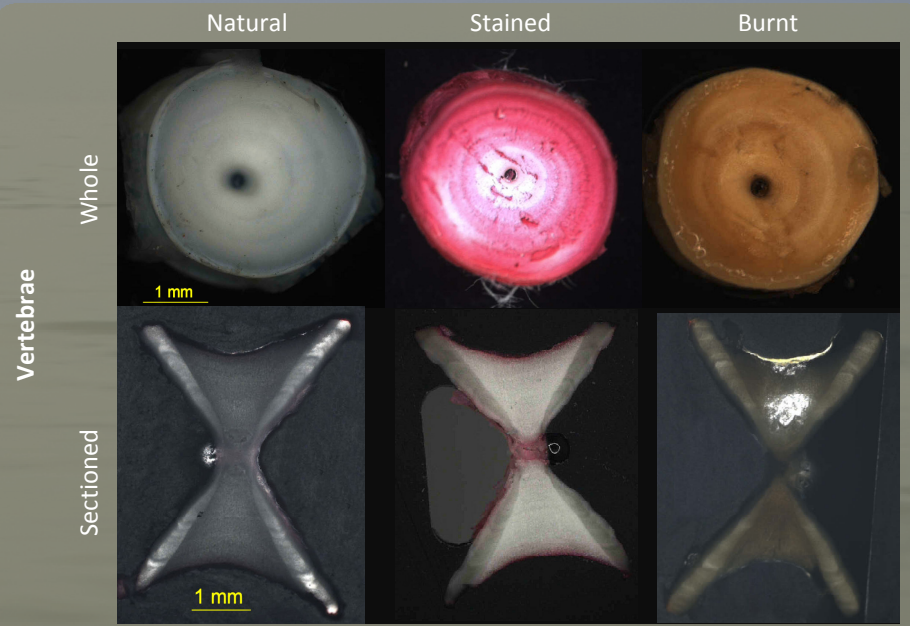
Preparation Methods

Sectioning
Clarification
Staining or burning

Techniques for enhancing contrast between opaque & translucent bands

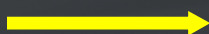
Large median dermal denticles and vertebrae from *R. Clavata* were removed and cleaned in 0.5 or 1% trypsin. The whole structures or 0.5 mm thick longitudinal sections were either left as such (natural), stained with Alizarin red-S or oven-burned at 200°C for 10 min. The best results of 2 individuals are shown here.

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Conclusion:

- ✓ Staining → only superficial;
- ✓ Vertebrae → are best natural or burnt, both whole and sectioned because angle change (birth mark) more obvious in sections;
- ✓ Dermal denticles are best oven burnt and not sectioned.



Further work:

staining after sectioning and saggital sectioning of dermal denticles

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