FACULTY OF VETERINARY MEDICINE
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THE CURIOUS ASYMMETRY OF FLATFISH

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Introduction

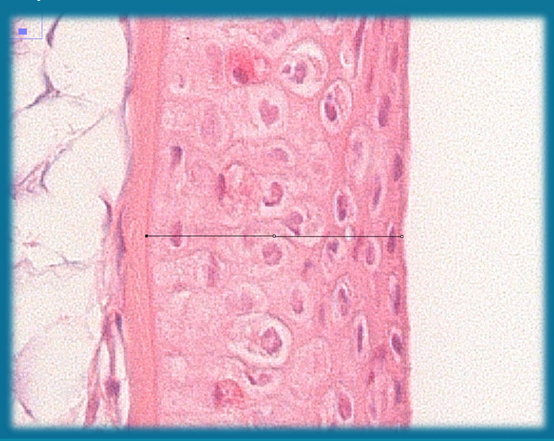
Flatfish have one of the most peculiar shapes existing on this planet, linked to an extreme asymmetry. During metamorphosis one eye migrates onto the other side of the head, they lose their symmetrical larval state and acquire a blind and an eye side. The blind side glides over the seabed and is non-pigmented (NP). The eye side reaches out to the water column and is pigmented (P). The difference between both sides in pigmentation is already well investigated, however, other microscopic or structural differences may be present.

Materials & methods

The fish used were caught in two different seasons and two different places. Histological sections of healthy skin were made (5µm) of skin from both P and NP. Different measurements were conducted.

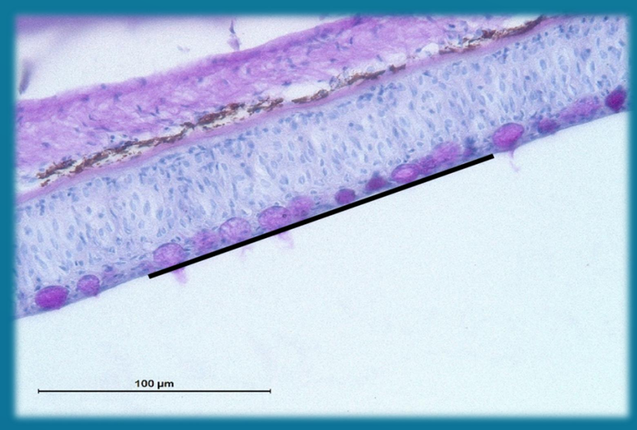
Thickness of the epidermis

- H&E-staining
- Length from the basement membrane (not included) till the upper layer of the epidermis

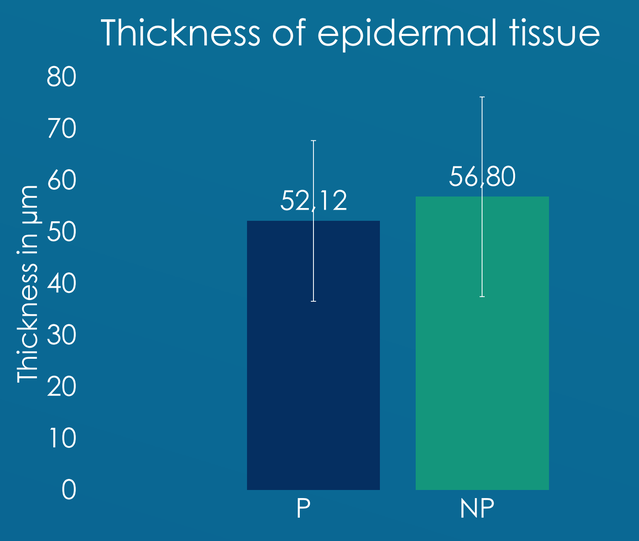


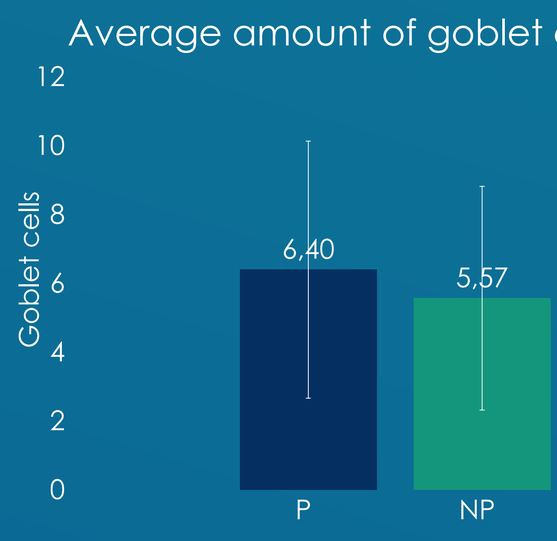
Quantity of goblet cells

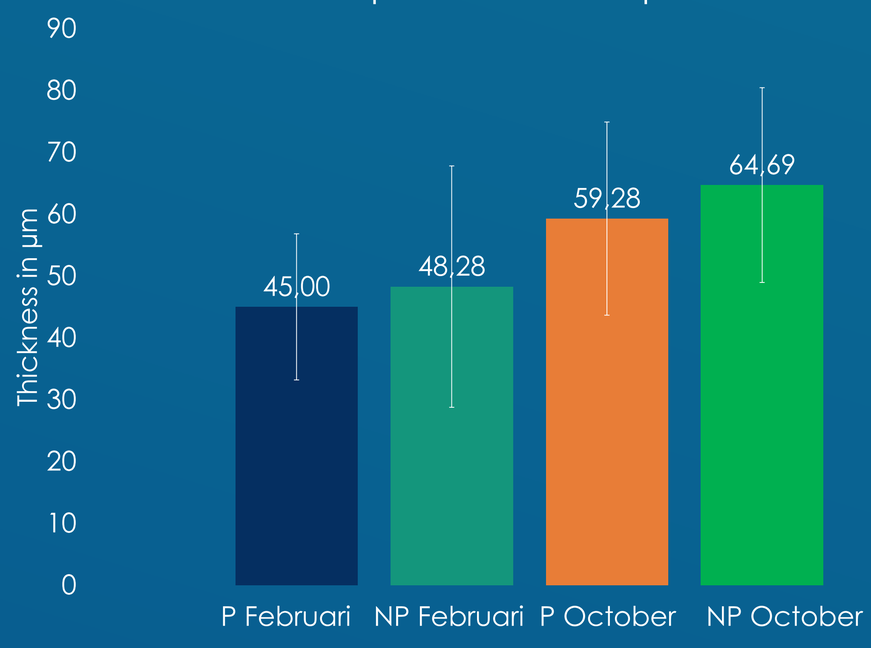
- PAS-staining
- Count all the goblet cells per 159,14 µm

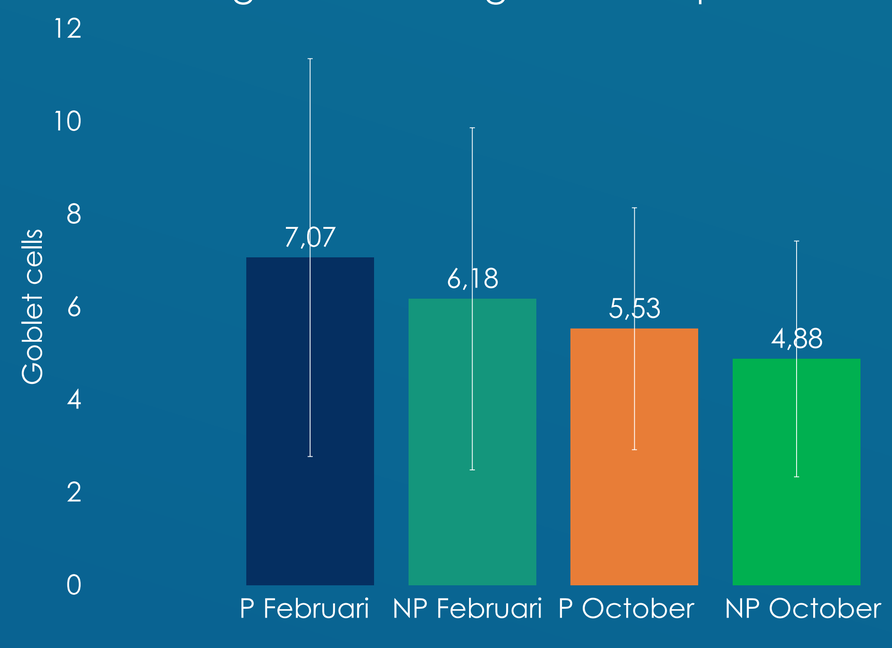


Results









Conclusion

- Seasonal difference in thickness of the epidermis.
- Small difference in amount of goblet cells between pigmented and non-pigmented side.
- Small difference in thickness between pigmented and non-pigmented side.