



WHAT THE SHELL

IS HISTOLOGY?

A fun and illustrative guide to how scientists look at the tissues of the common cockle



FULL PARTNERS



ASSOCIATED PARTNERS



WHAT IS HISTOLOGY?

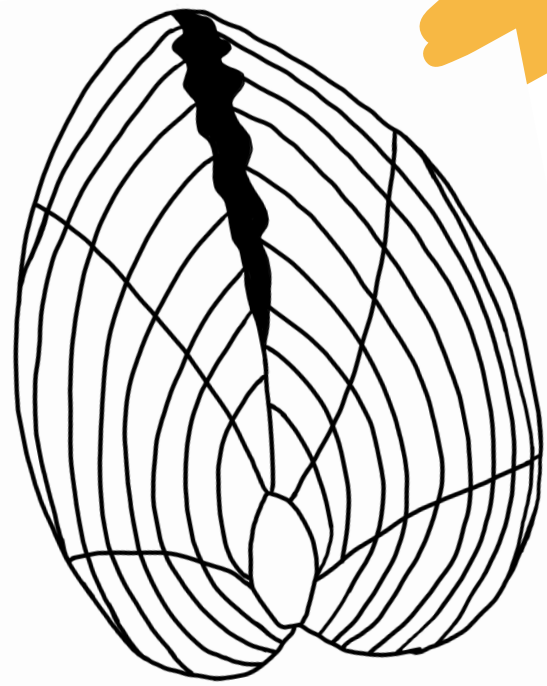
Scientists use histology to look at animal tissues (groups of cells) under the microscope. In COCKLES project, we want to understand what makes them sick (parasites) and how they reproduce (make baby cockles).



Cockles are a type of shellfish (mollusc) that lives in sandy and muddy shores. People and animals including birds and crabs like to eat them. This is one of the reason why scientists want to understand them.

First, we must go to the beach and collect some cockles.

YOU CAN COUNT THE RINGS
OF A COCKLE, JUST LIKE
ON A TREE. THIS TELLS US
ITS AGE



SOMETIMES WHEN WE
OPEN COCKLES, WE
FIND LITTLE CRABS
CALLED PEA CRABS



In the lab, we open the cockles and slice the body down the middle. We place this in a special case called a histocassette and put it in a chemical called Davidson's Solution. This is to "fix" the tissues, so we can keep them for a long time.



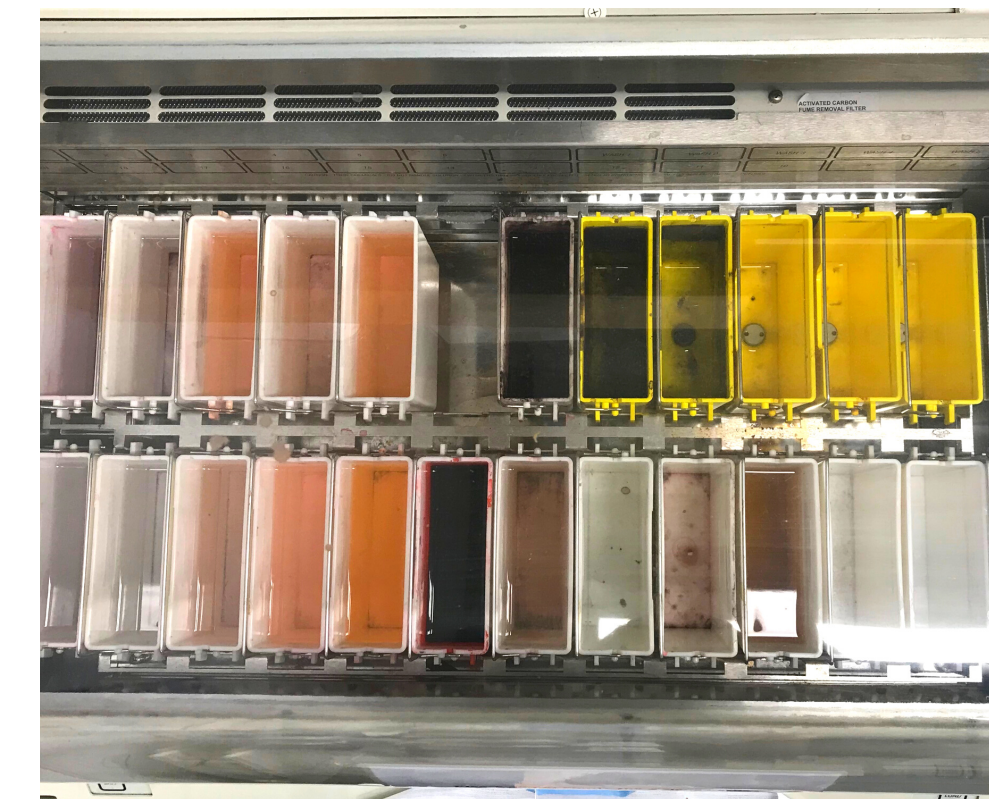
After 24 hours, we put the histocassette into a machine called a tissue processor. This machine puts the cockle tissues into different chemicals, including alcohol, to dry out the tissue.



Next, we put tissues in paraffin (like candle wax), to make blocks.

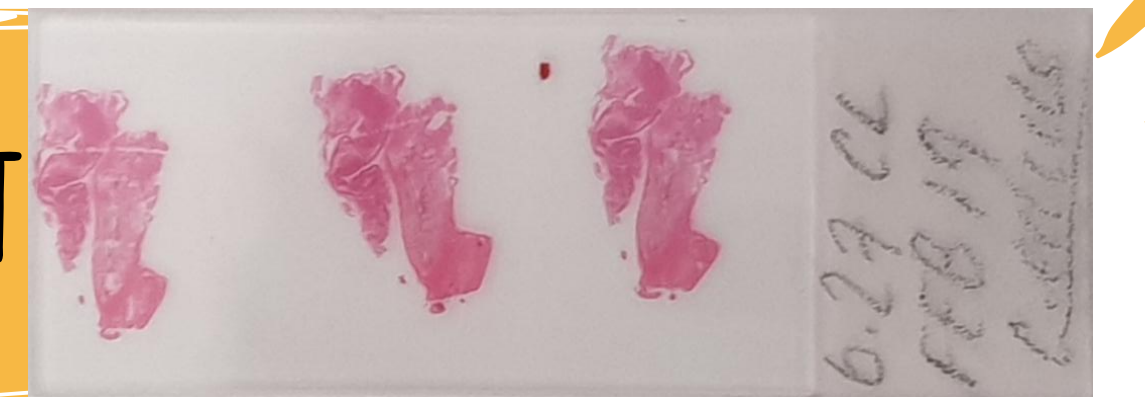
FUN FACT: 5 MICRONS IS ABOUT
20 TIMES SMALLER THAN THE
THICKNESS OF A STRAND OF HAIR

We then cut the blocks on a device called a microtome, to very thin sections (5 microns) which we put on a microscope slide.



Later, in the stainer, the paraffin is removed with a chemical called xylene, and the tissues are coloured with stains to allow us to see the cells.

THE FINAL RESULT



Finally, we have a slide that we can look at under the microscope. Here you can see some of the organs found in cockles.



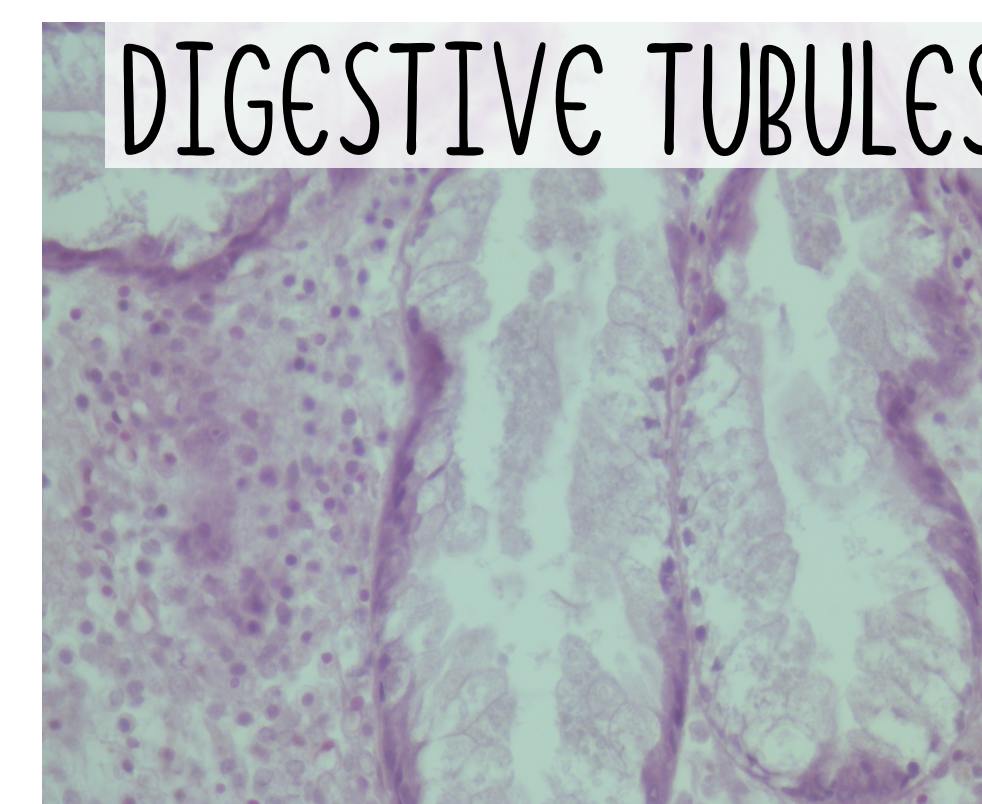
MALE-SPERM



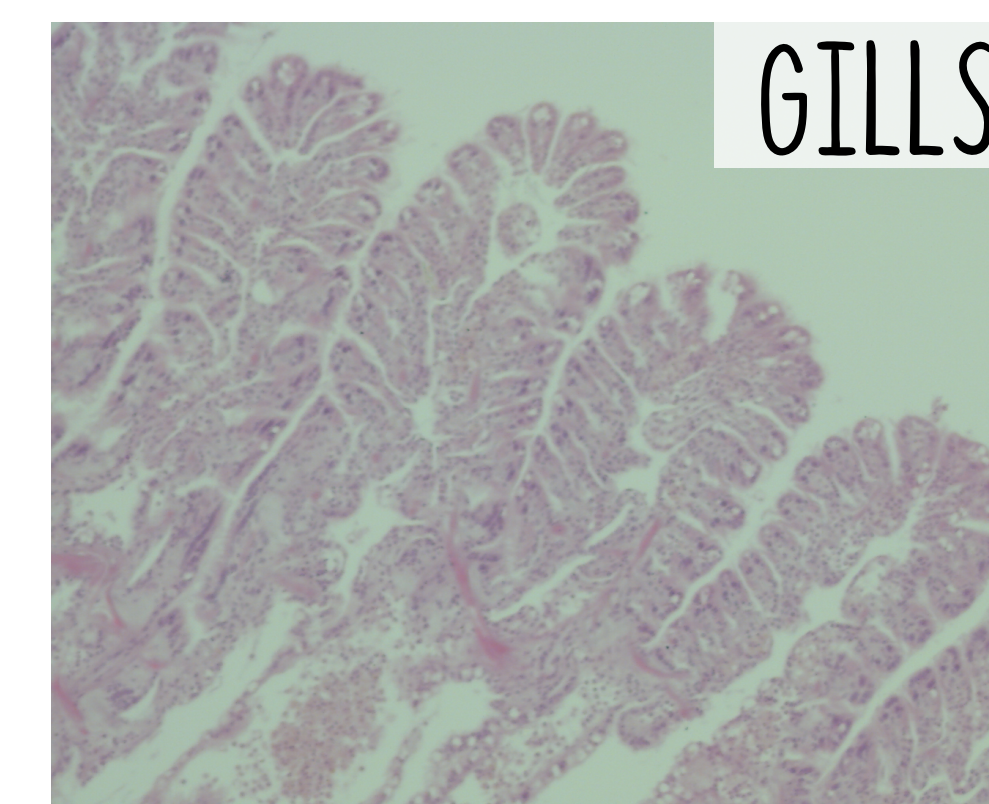
FEMALE-EGGS



PARASITE



DIGESTIVE TUBULES



GILLS

THIS PARASITE IS A
TREMATODE AND CAN
KILL COCKLES