

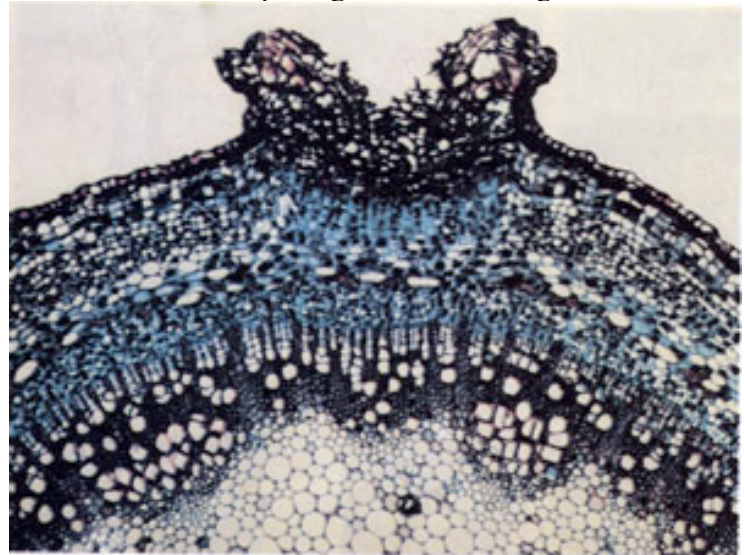
## LENTICELS vs. STOMATA

What is the difference between a lenticel and a stoma?

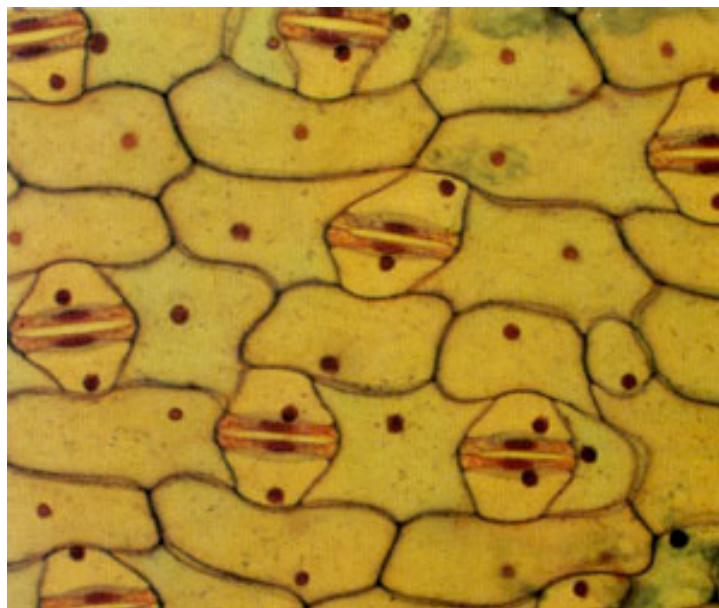
Stomata occur in the epidermis. In parts of plants that grow in diameter each year, the epidermis dies and is sloughed off; it is replaced by a different type of tissue, secondary tissue. For simplicity, consider tree stems, which grow in diameter each year to become thick branches or trunks. The epidermis is replaced with bark. The cells of the outer bark are compactly arranged and impermeable to gases. Since the inner tissues of bark are living cells, they need to exchange gases, and lenticels fill this function. In some cases a lenticel begins to form just interior to where a stoma is when the epidermis is still on the tissue. Other lenticels develop independently of previous stomata.

Notice that a stoma has guard cells, which a lenticel does not. Guard cells contain chloroplasts, whereas secondary tissue in general and lenticels in particular do not conduct photosynthesis.

What are lenticels? Lenticels are portions of the periderm (bark) with numerous intercellular spaces. Their purpose is to allow gas exchange through the compactly arranged cork cells of the bark, which otherwise presents an impermeable barrier to the passage of water and gases.



**Lenticels**



**Stomata**