Primary and secondary cover tissues

Trichomes and emergents.

Dermal tissues (surface tissues) are plant tissues located on the border with the external environment, and consisting of tightly closed cells.

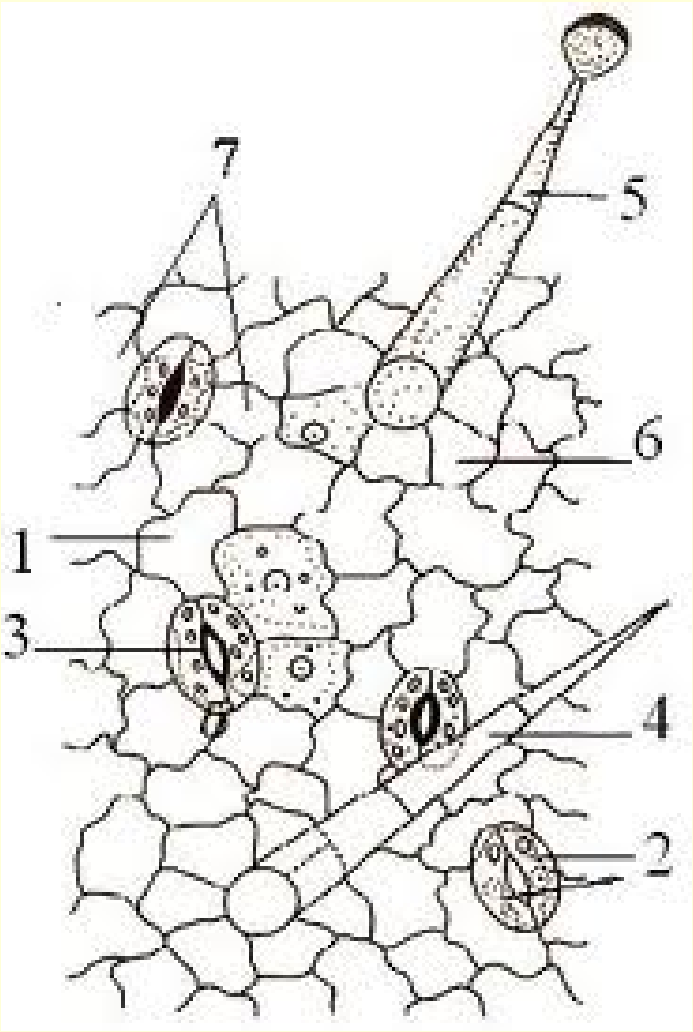
The functions of the dermal tissues are all functions related to the interaction of the plant with the environment:

1. protection from adverse environmental influences: a sharp change in temperature, drying up, chemical and physical influences, eating by animals, etc.
2. gas exchange
3. transpiration
4. absorption of water and substances dissolved in it
5. excretion of excretory substances and chemical protection substances

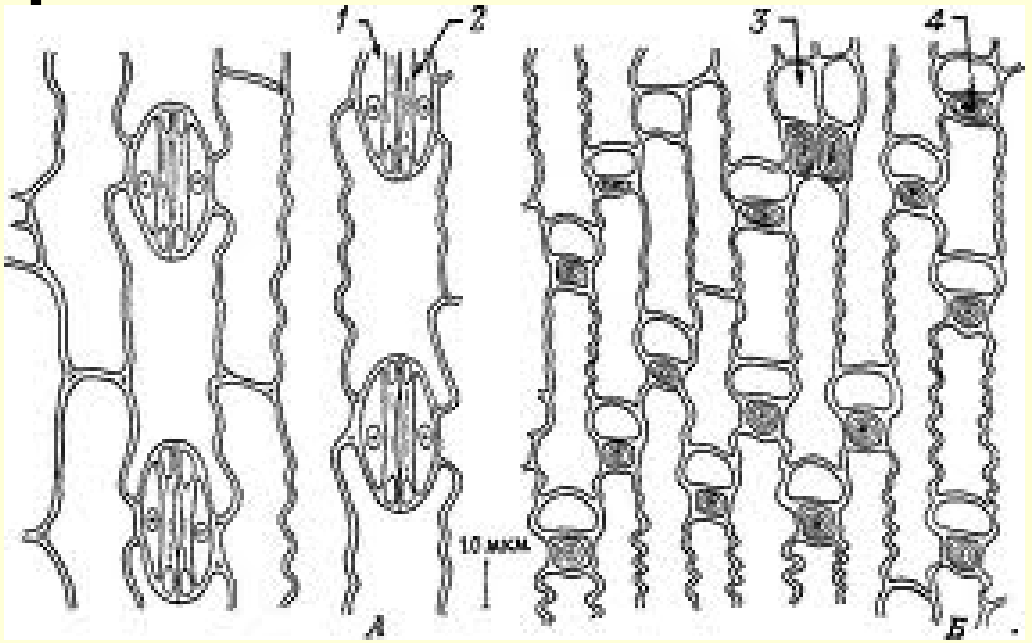
In addition, the dermal tissues can sometimes perform other functions:

6. synthesis of substances
7. accumulation of water and nutrients

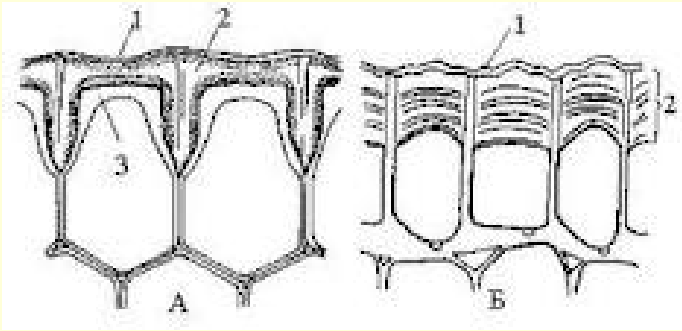
The epidermis



The epidermis of a dicotyledonous plant

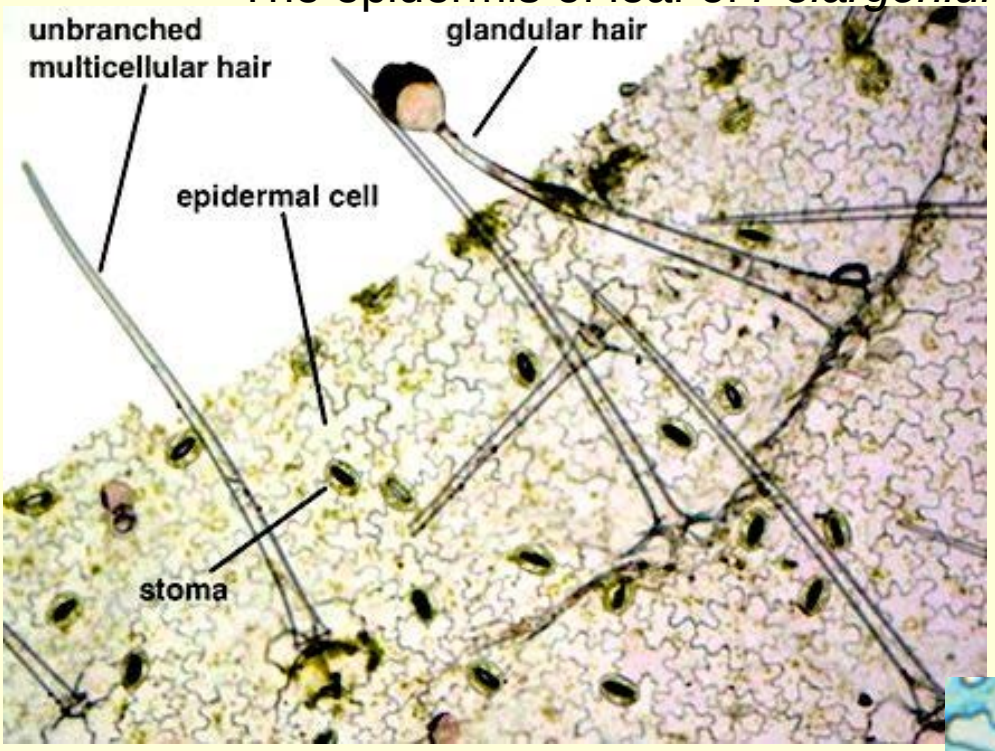


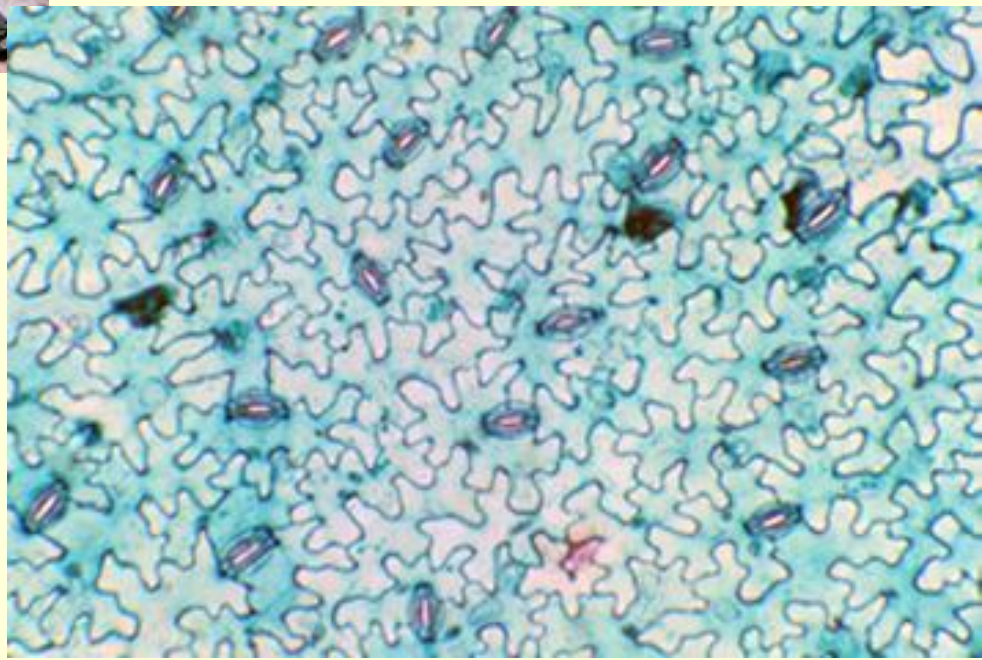
The epidermis of a monocotyledonous plant



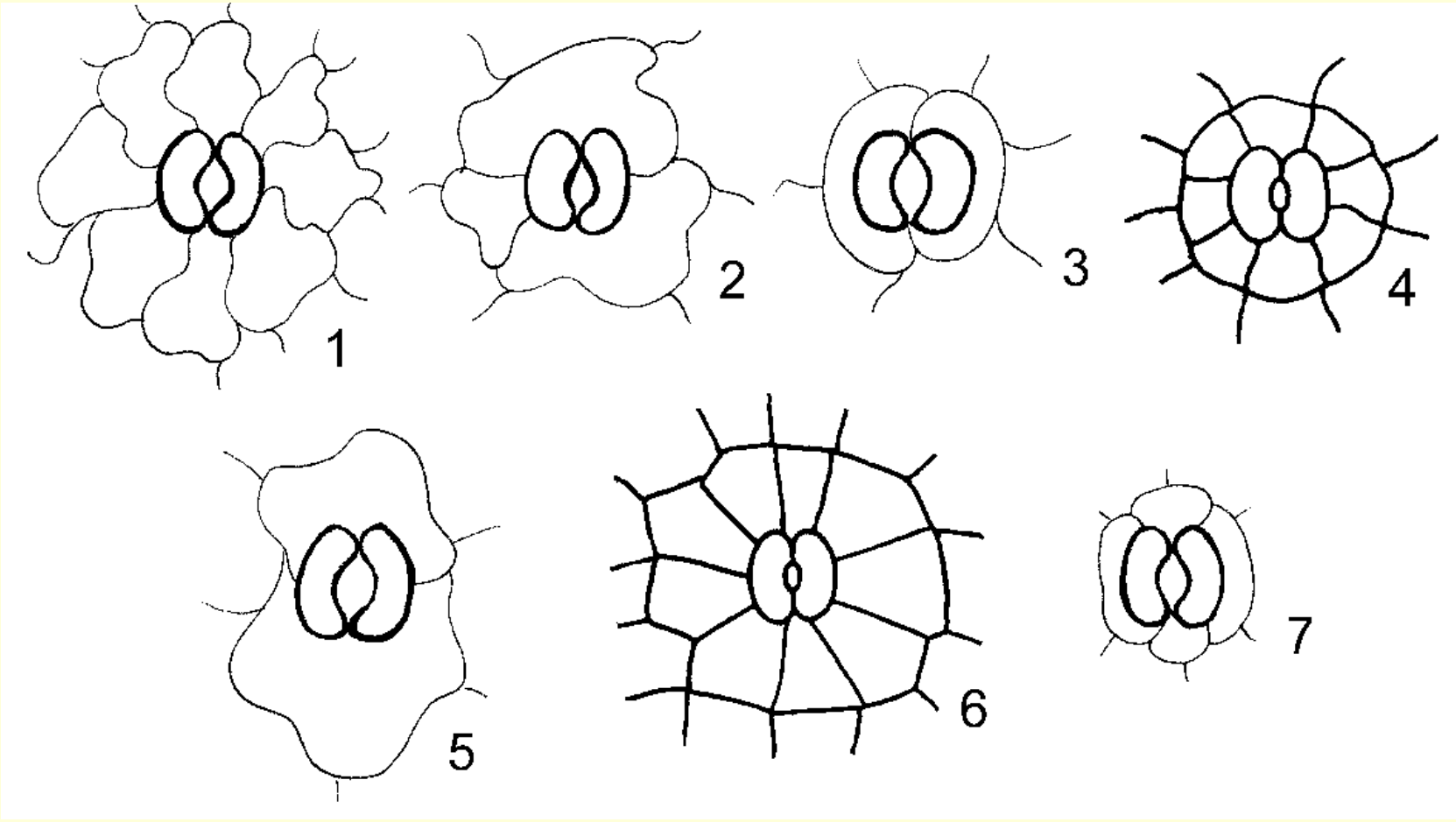
Cuticle

The epidermis of leaf of *Pelargonium zonale* (L.) L'Hér. ex Ait.





Types of stomatal apparatus



1-anomocytic 2-anisocytic, 3-paracytic, 4-cyclocytic, 5-diacytic, 6-actinocytic, 7-tetracytic.

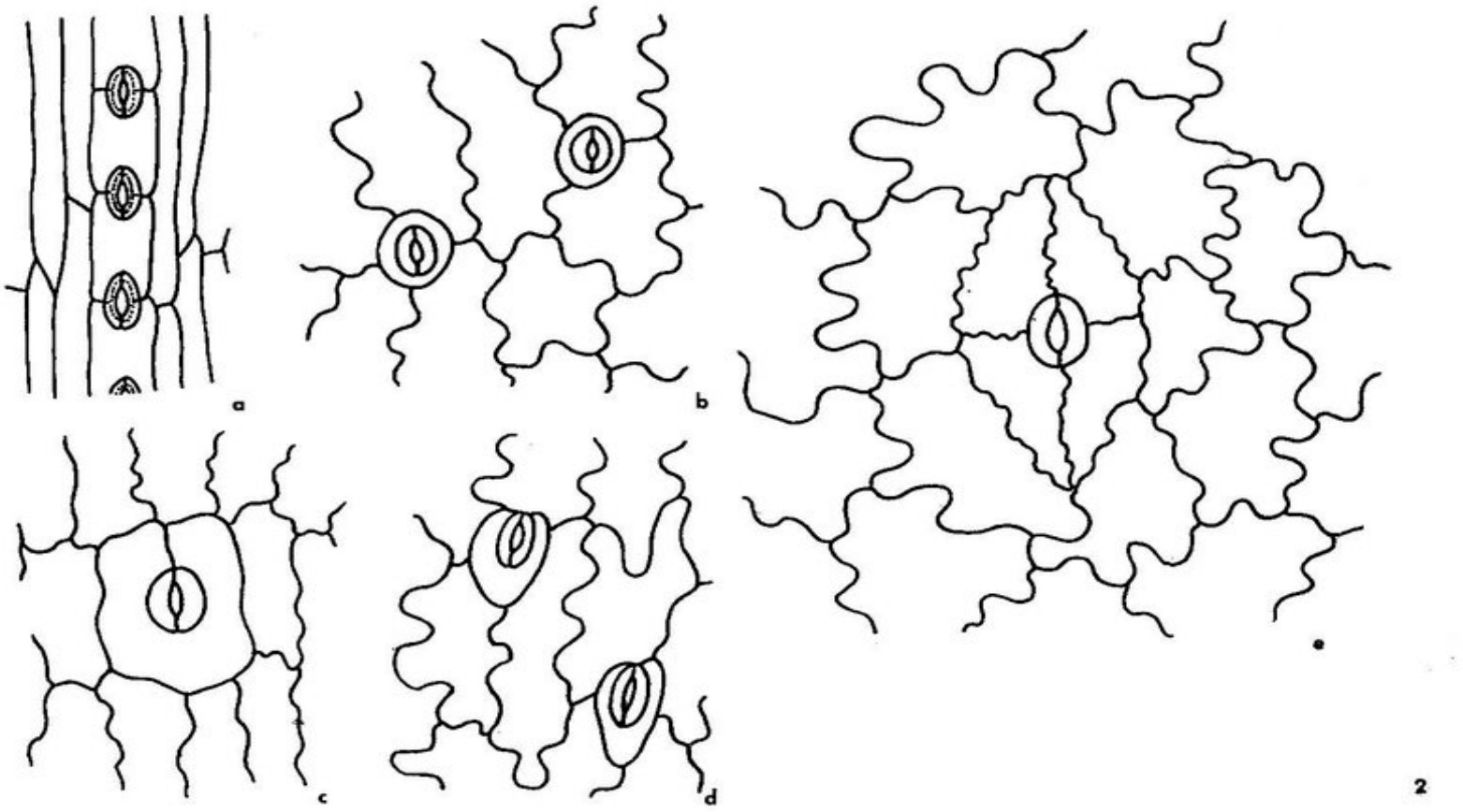


Fig. 2. — Stomatal types : **a**, hypocytic; **b**, pericytic; **c**, desmocytic; **d**, polocytic; **e**, staurocytic.

The method of preparing micro-preparations of the epidermis of the leaves can be viewed in these videos:

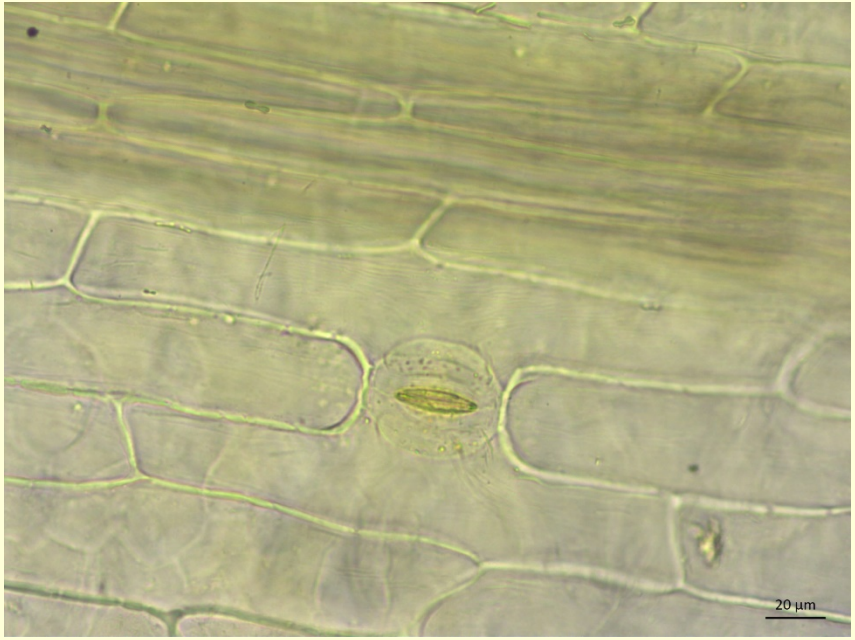
https://www.youtube.com/watch?v=IqtrAG0Bflc

https://www.youtube.com/watch?v=Ghxd0p93hag

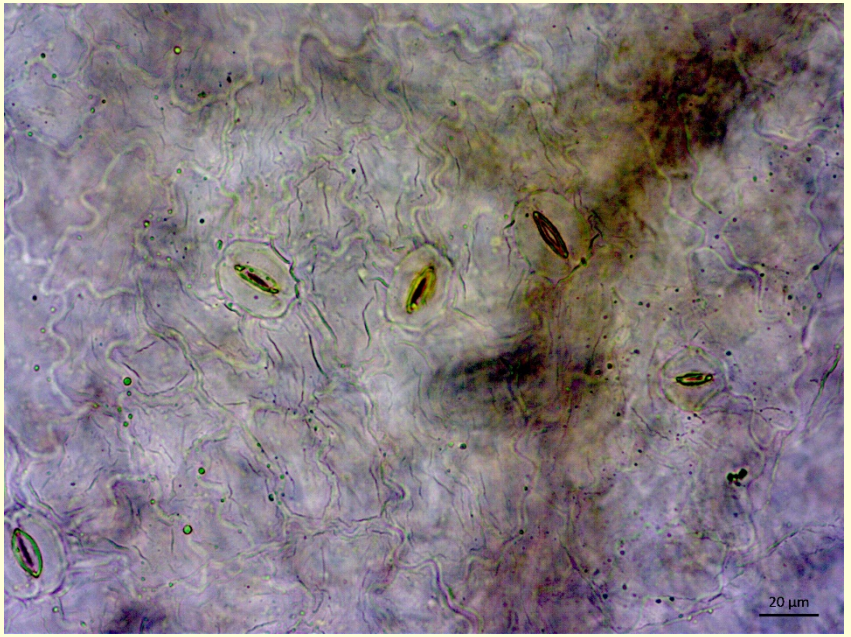
https://www.youtube.com/watch?v=5uv4lIWDECs

https://www.youtube.com/watch?v=Haiiw5HSHG0

https://www.youtube.com/watch?v=iOjJUHmBgmU

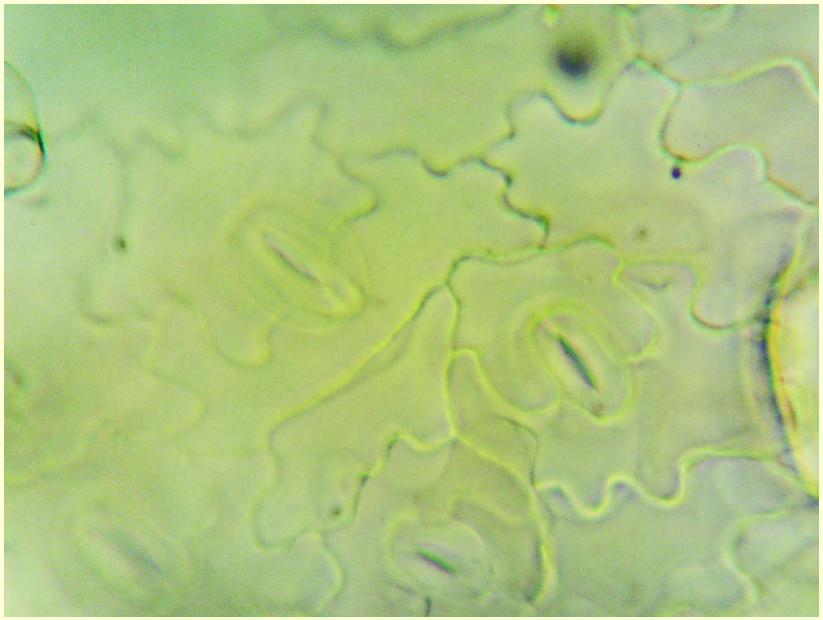


Epidermis of leaf of Convalaria majalis

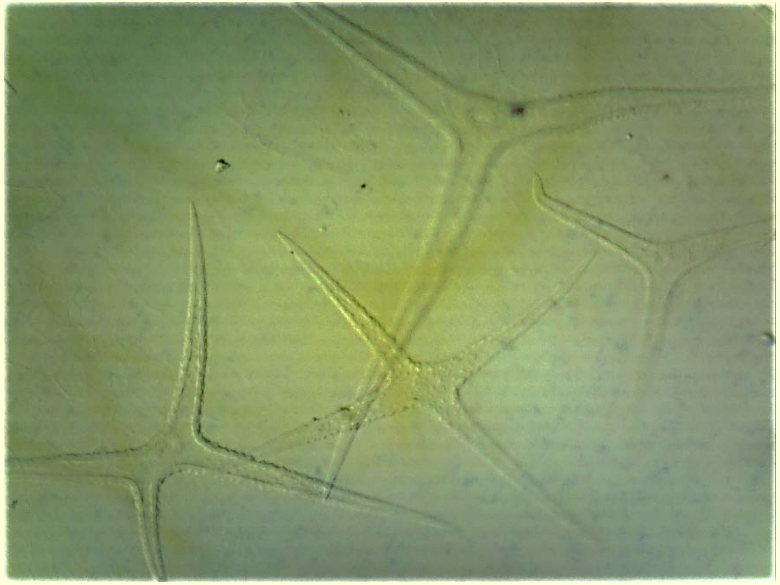


Epidermis of leaf of Berberis vulgaris

Epidermis of leaf of Tradescantia



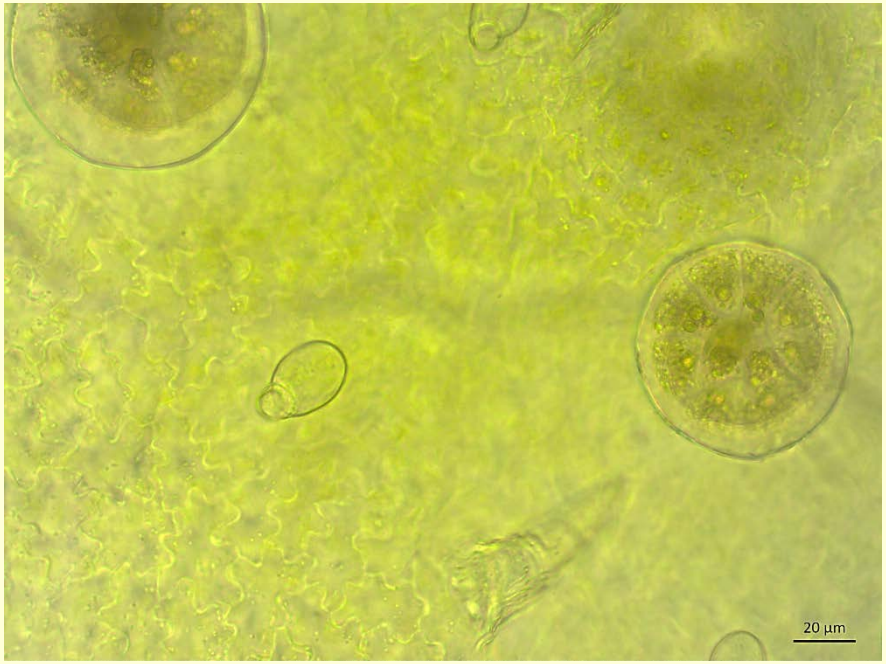
Epidermis of leaf of Mentha × piperita



Trichomes of Capsella bursa-pastoris

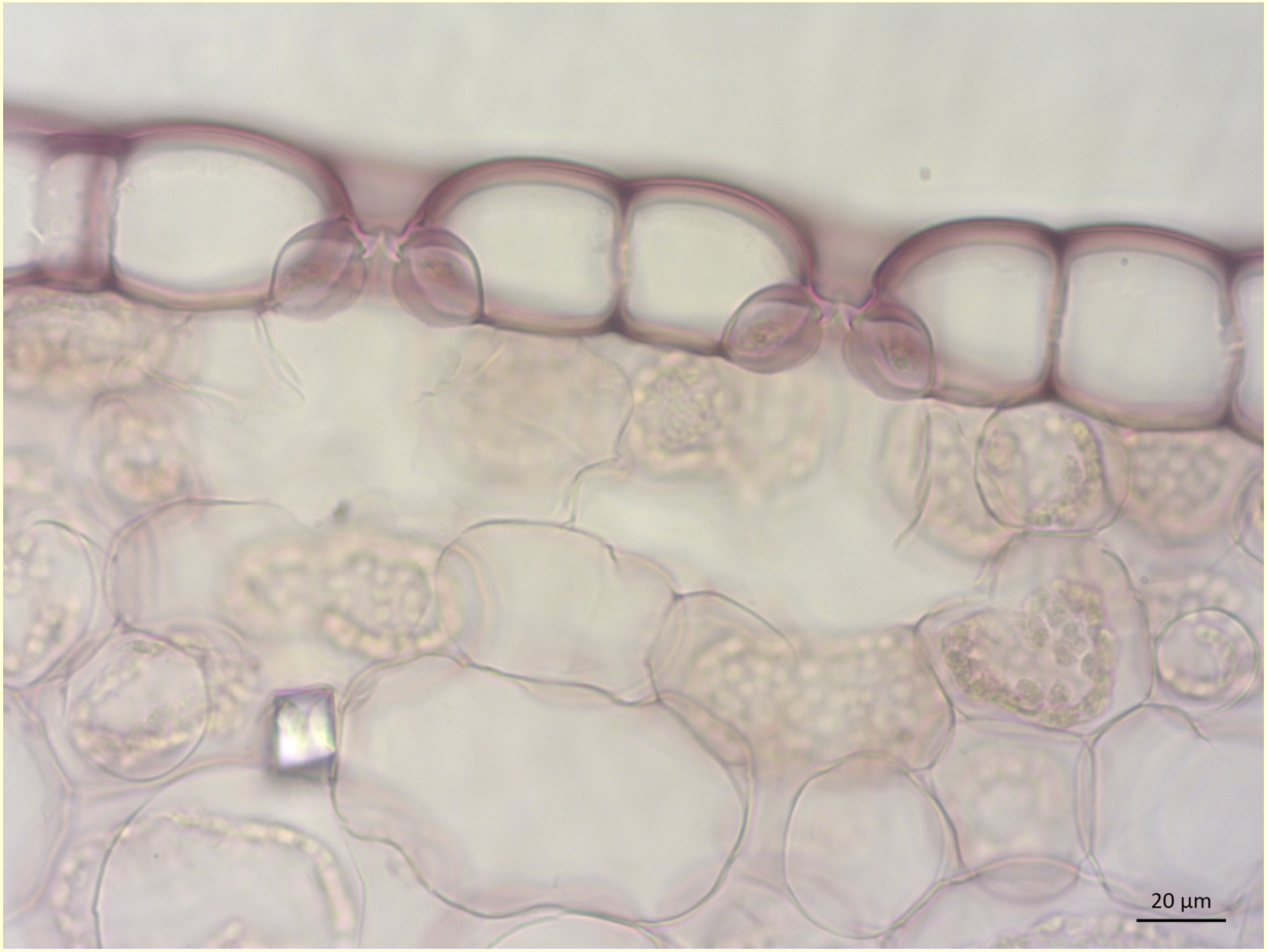
Trichomes of Veronica

Epidermis of Ocimum basilicum

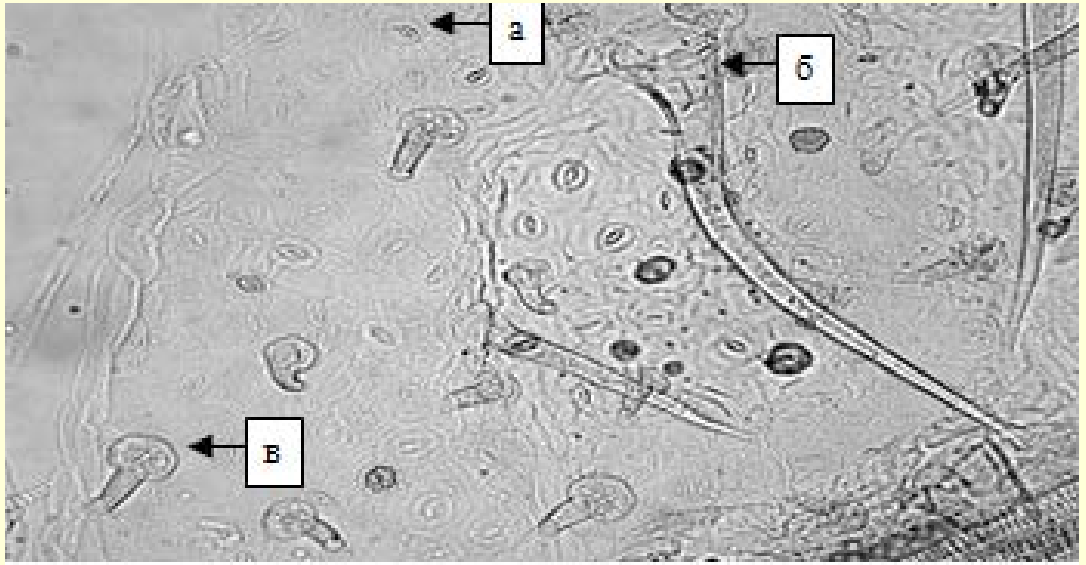


Epidermis of leaf of Mentha × piperita

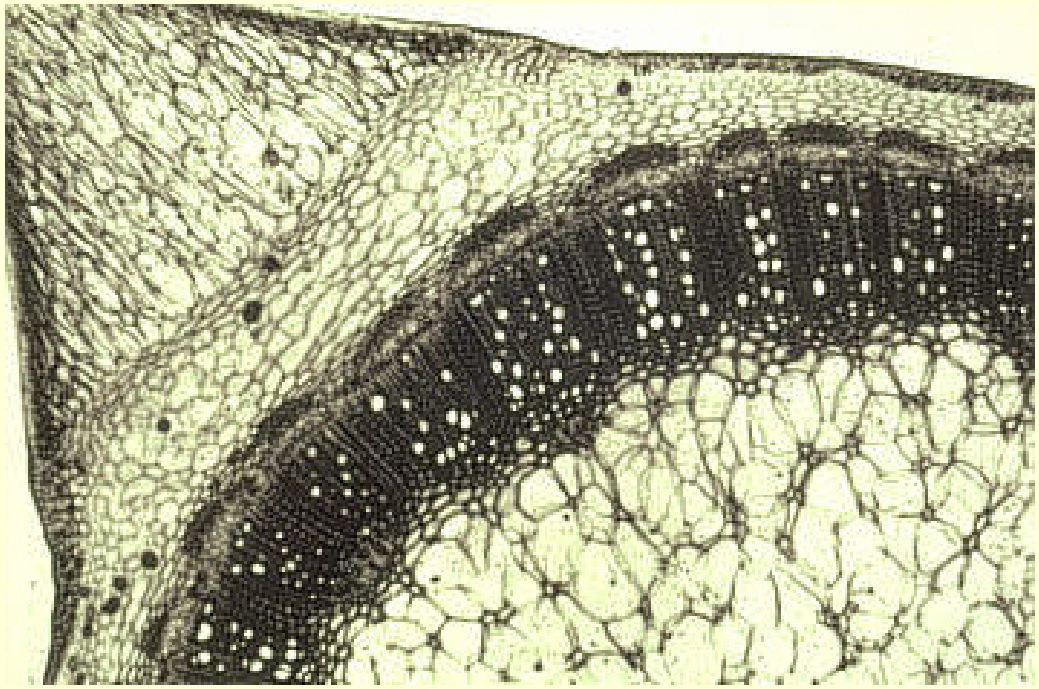
Cross section of leaf Iris germanica



Emergents of the Nettle



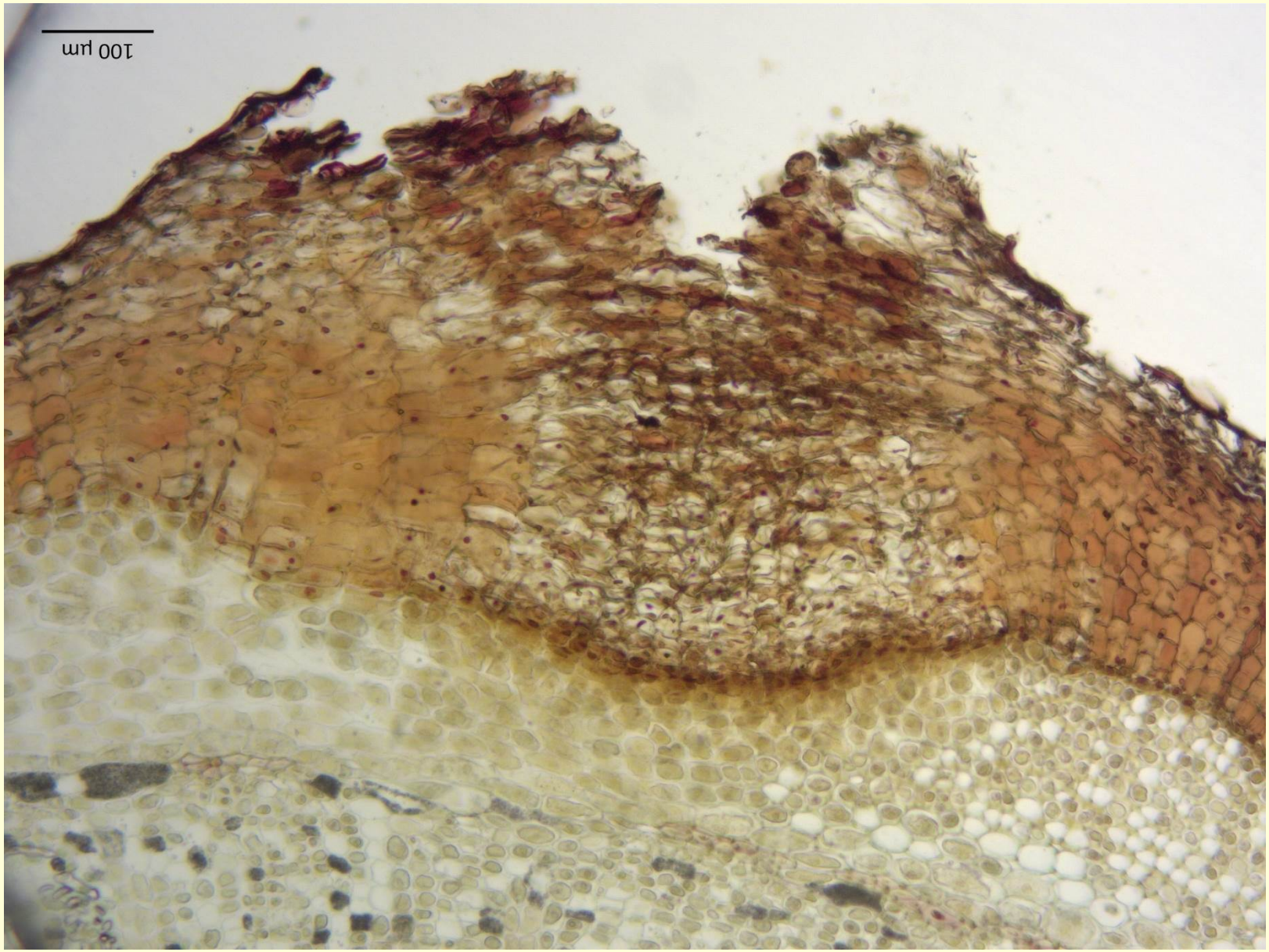
Cross-Section Through the prickle of a Rose



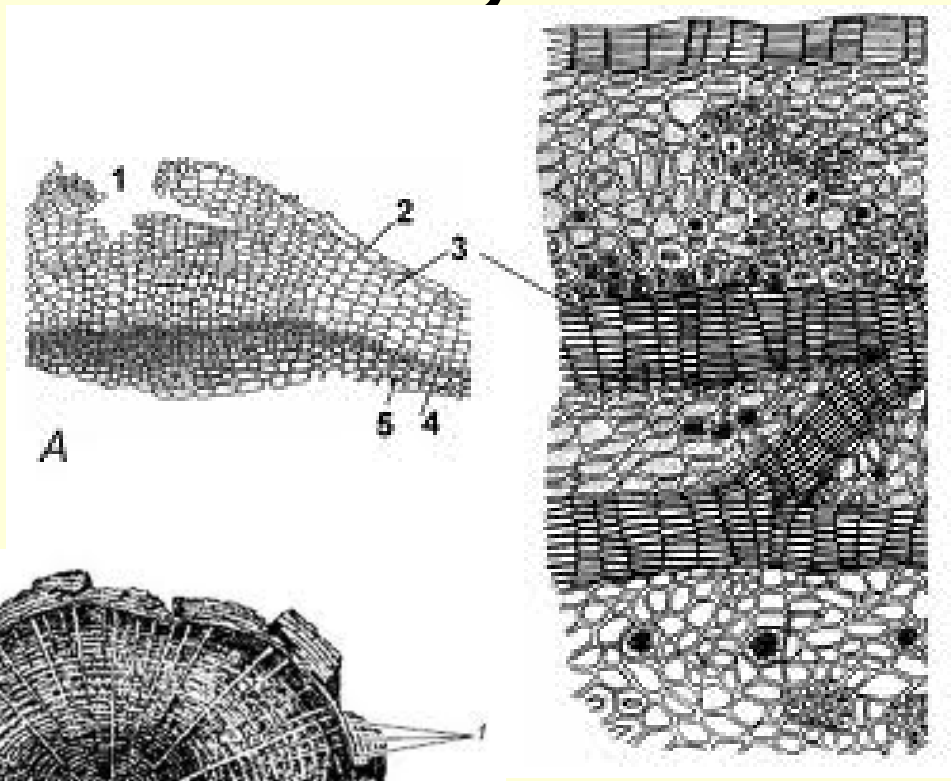
It is not the epidermis alone but also the underlying bark tissue that is involved in the prickle structure. In contrast to spines, no wooden elements can be found in prickles. Therefore, too, exist no excrescences of the vascular bundle below the prickle attachment.

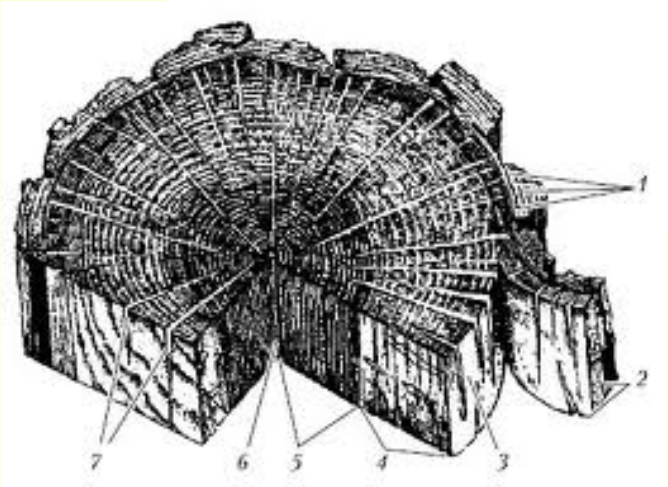
The epiblem (rhizodermis)

Structure of periderm and lenticels on cross section of elderberry (Sambucus nigra L.) stem.

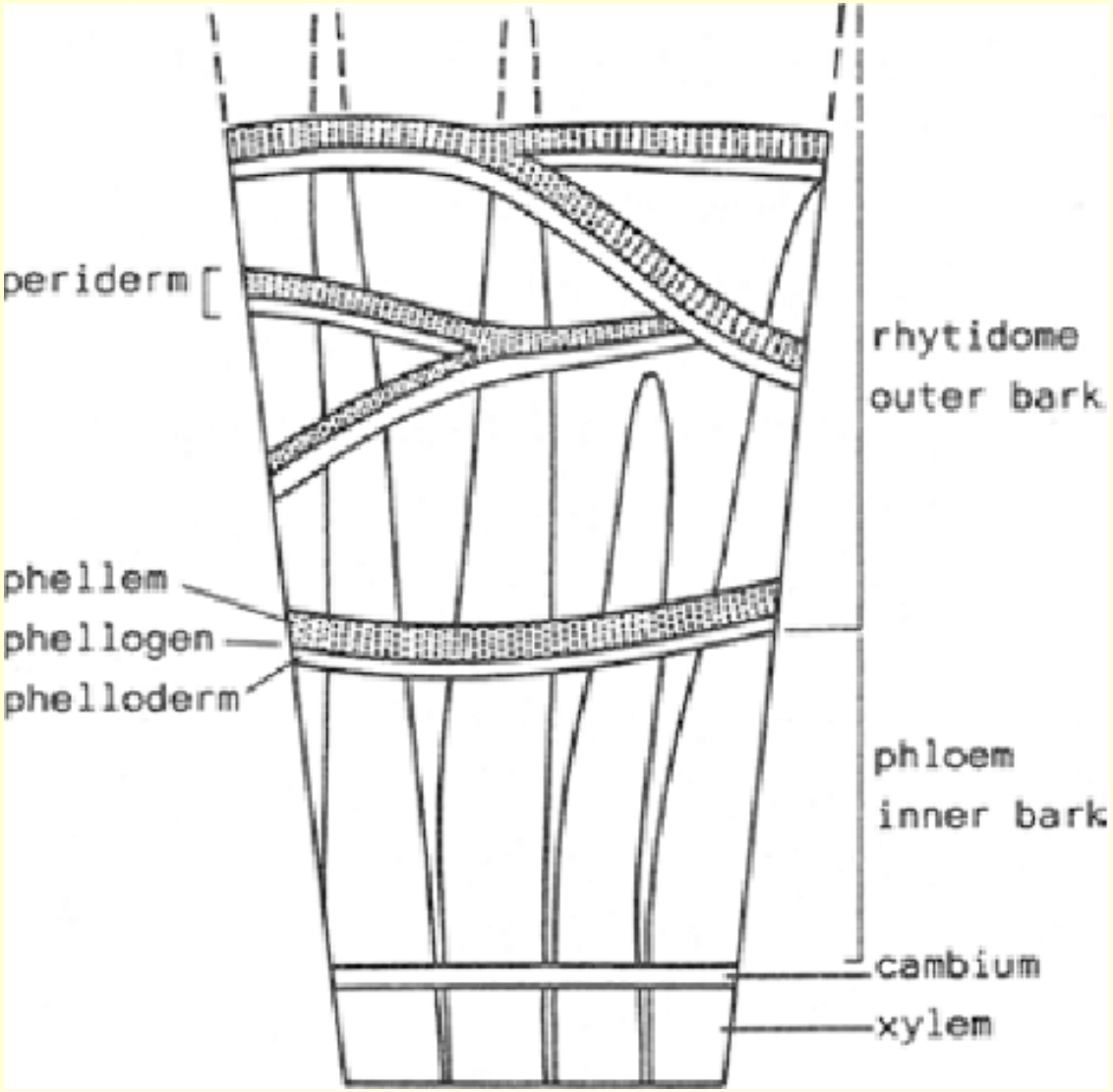


The rhytidome





The rhytidome is formed



If a phellogen is repeatedly formed during the life of the plant – a secondary dermal (surface) tissue is formed, which called rhytidome.