

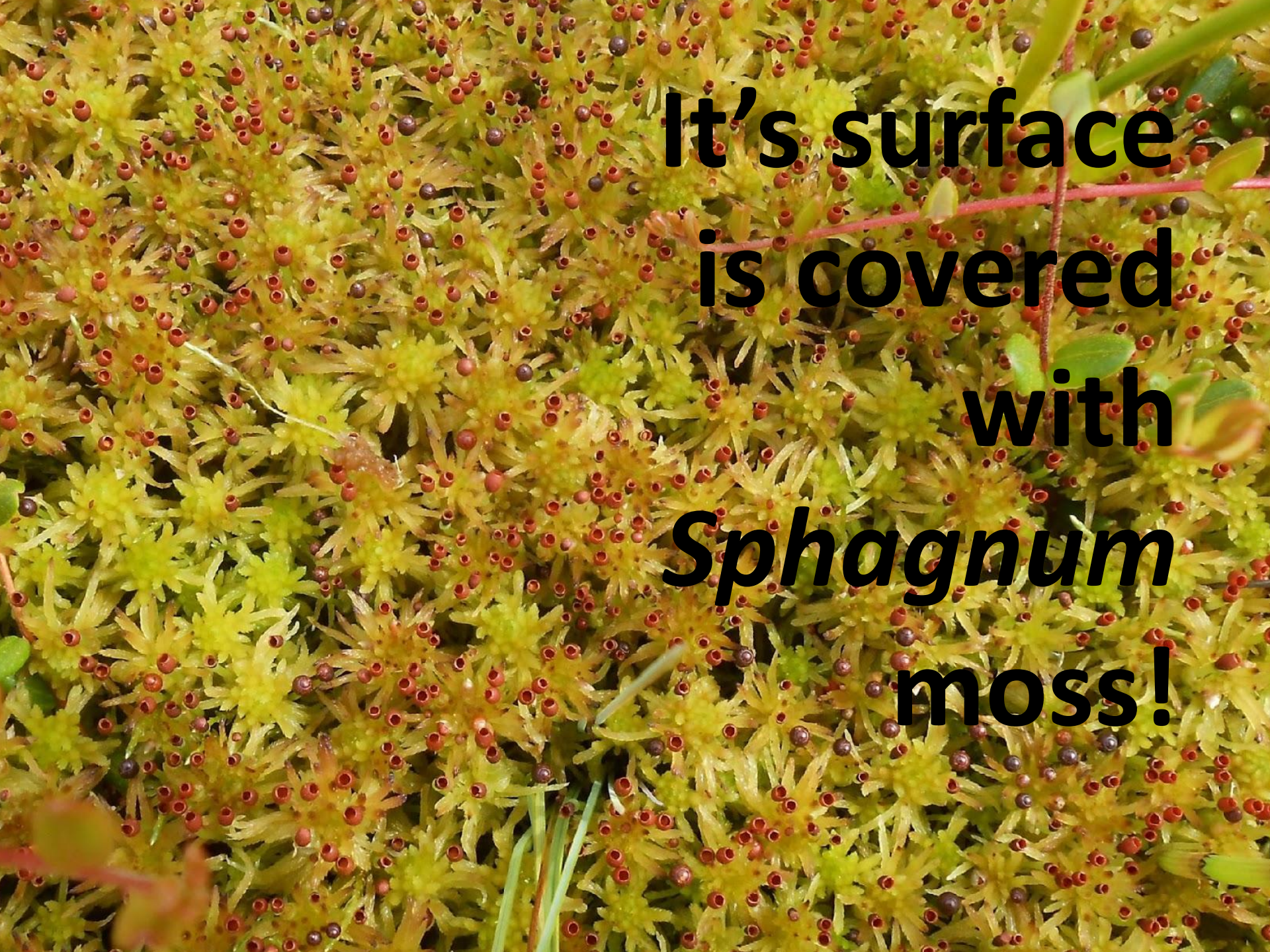
ACCORDING TO THE SOIL
SPECIALIZATION...)))

(And some botanical
science...)

Plants of the olygotrophic swamps

An olygotrophic swamp



A close-up photograph of a dense carpet of Sphagnum moss. The moss is a vibrant yellow-green color, and its surface is covered with numerous small, reddish-brown capsules, which are the developing sporophytes. The texture of the moss is intricate, with many small, pointed leaves visible. A few thin, green stems of other plants are visible, protruding from the moss carpet.

**It's surface
is covered
with
Sphagnum
moss!**

1. Lack of nutrition

- Olygotrophic swamps are water reservoirs which are poor with organic matter, actually with nitrogen compounds.

- Due to such severe conditions, plants of swamps, or OXYLOPHYTES, have some special characteristics.
- Here are some of them.

- For example, plants of *Ericaceae* family –

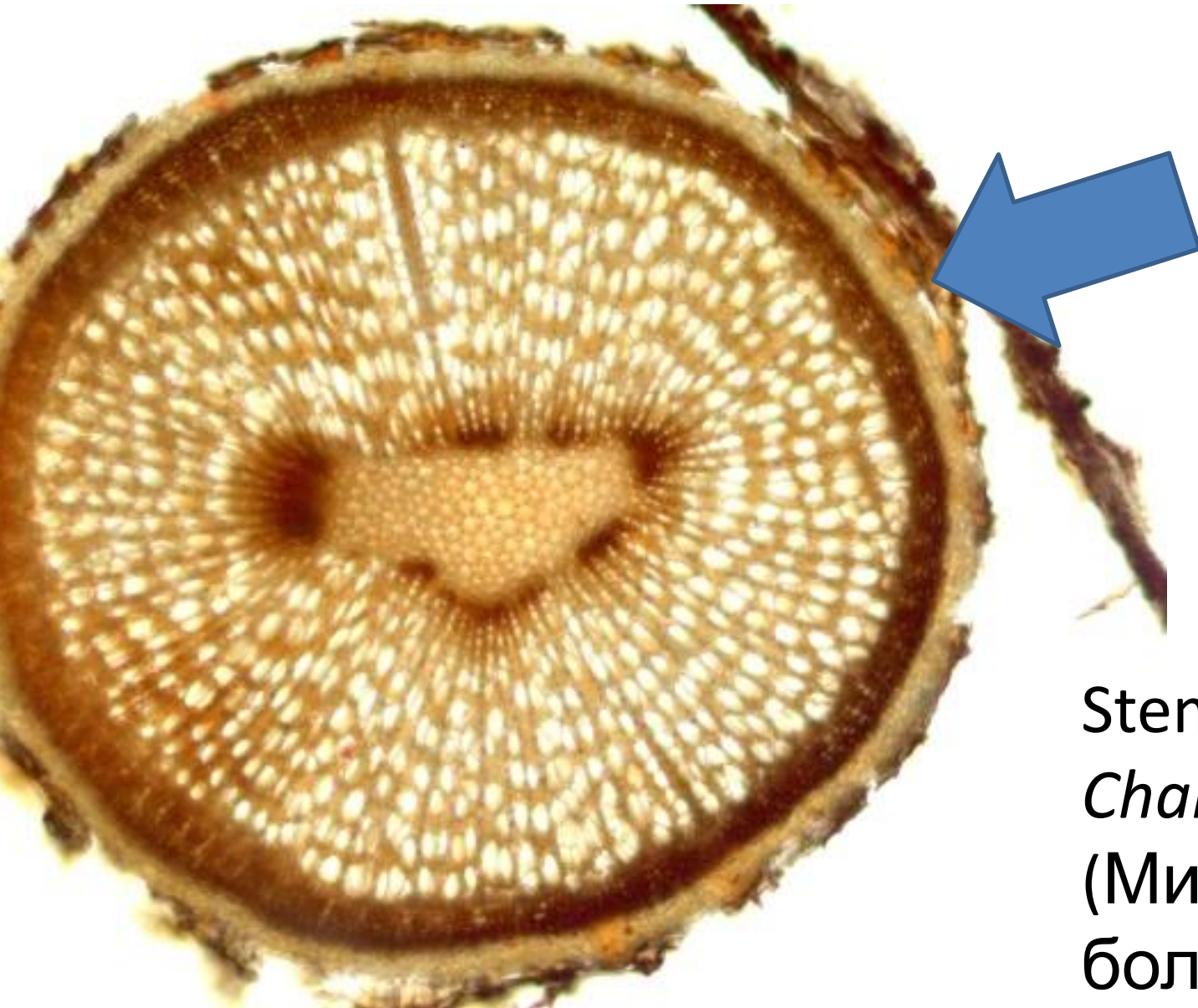


- *Andromeda
polifolia*,
- Подбел
многолистный,



*Chamaedaphne
calyculata, ...*
...Мирт
болотный,...

-have some special cells,
which produce fellein.



Stem of
Chamaedaphne
(Мирт
болотный), and
FELLOGENE cells

- These cells, or FELLOGENE cells, also are A BORDER between a stem and some outer tissues, which are to be separated from the stem.
- Эти клетки, или клетки ФЕЛЛОГЕНА, также находятся на ГРАНИЦЕ стебля и других тканей коры, которые затем отваливаются от стебля.

- So the parts of tissues located ABOVE the FELLOGENE separate from the stem. It leads to decrease in nutrition losses during growing season.

2. Low temperature

- These swamps are regions with relatively low-temperated soil.
- Олиготрофные болота – зоны со сравнительно низкой температурой почвы.

- It influences badly on roots, because **absorption** of water is complicated.
- Это плохо влияет на корни, т.к. **всасывание ВОДЫ** [при низких температурах] затруднено.

- On the other side, the sun rays reach plants very fast, which makes all the aerial runners warmer.

- As a result, subterranean organs of OXYLOPHYTES are subjected to cold, but aerial ones are overheated.



But leaves of *Chamaedaphne* (*mupm*) also have double layers of photosynthetic tissue to accumulate more sun rays.

Due to this fact, the leaves of *Andromeda* (подбел многолистный) are placed at an angle to the horizon.



- It contributes to decrease influence of solar rays.

3. Water excess

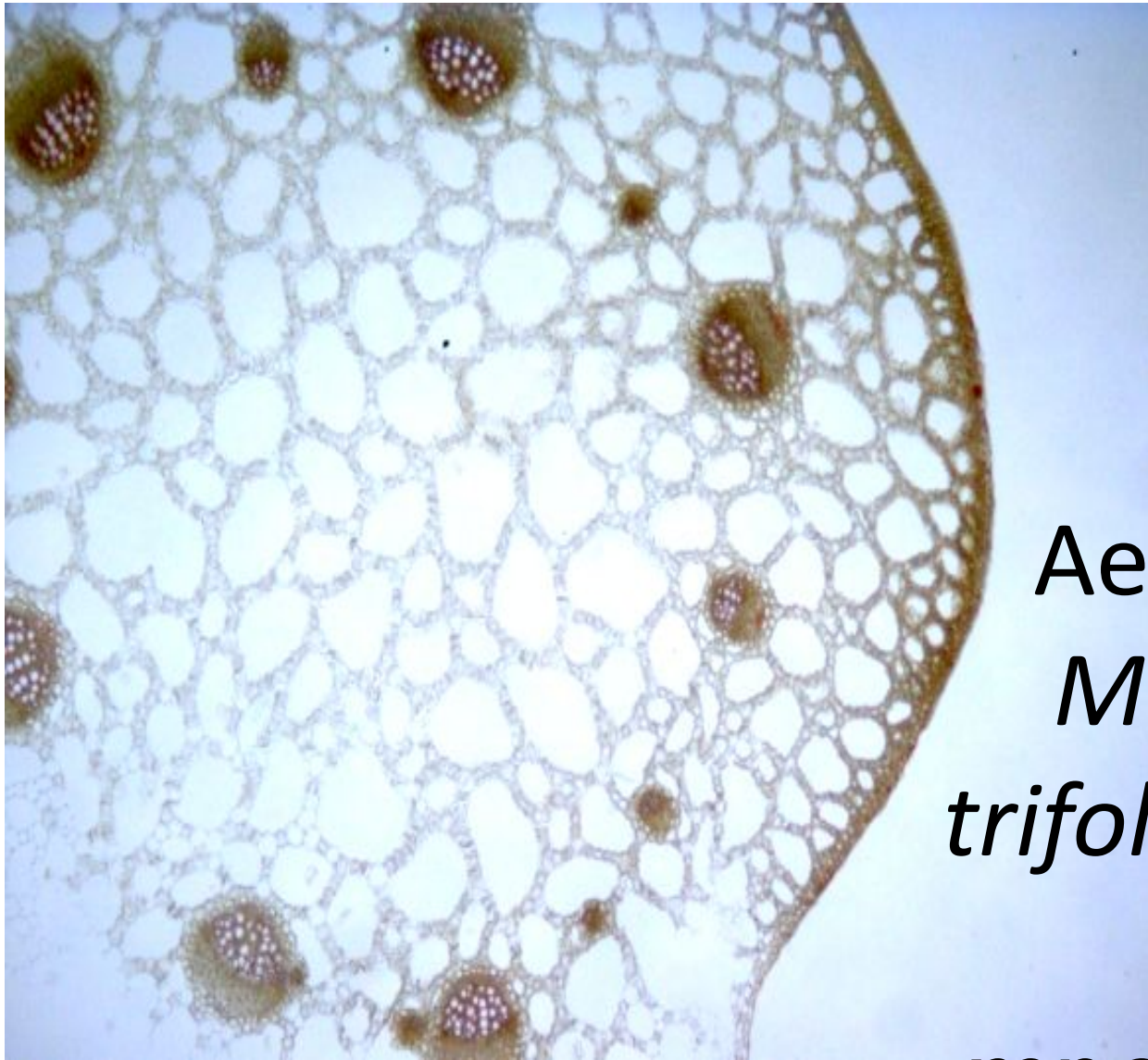
- Finally, the soil of
olygotrophic swamps is
very MOISTENED, so
athmosphere OXYGEN can
not penetrate through it.

- According to this, roots do not get enough oxygen for respiration.

- And OXYLOPHYTES have some adaptations for breath:
- They possess special tissue termed AERENCHIMA. It contains cells and plenty of air cameras!



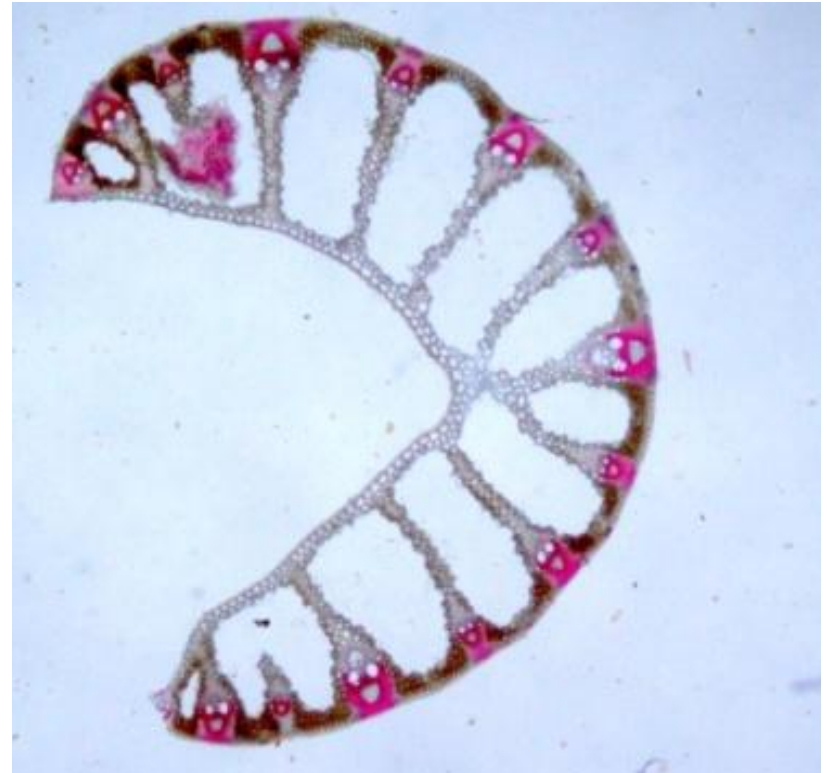
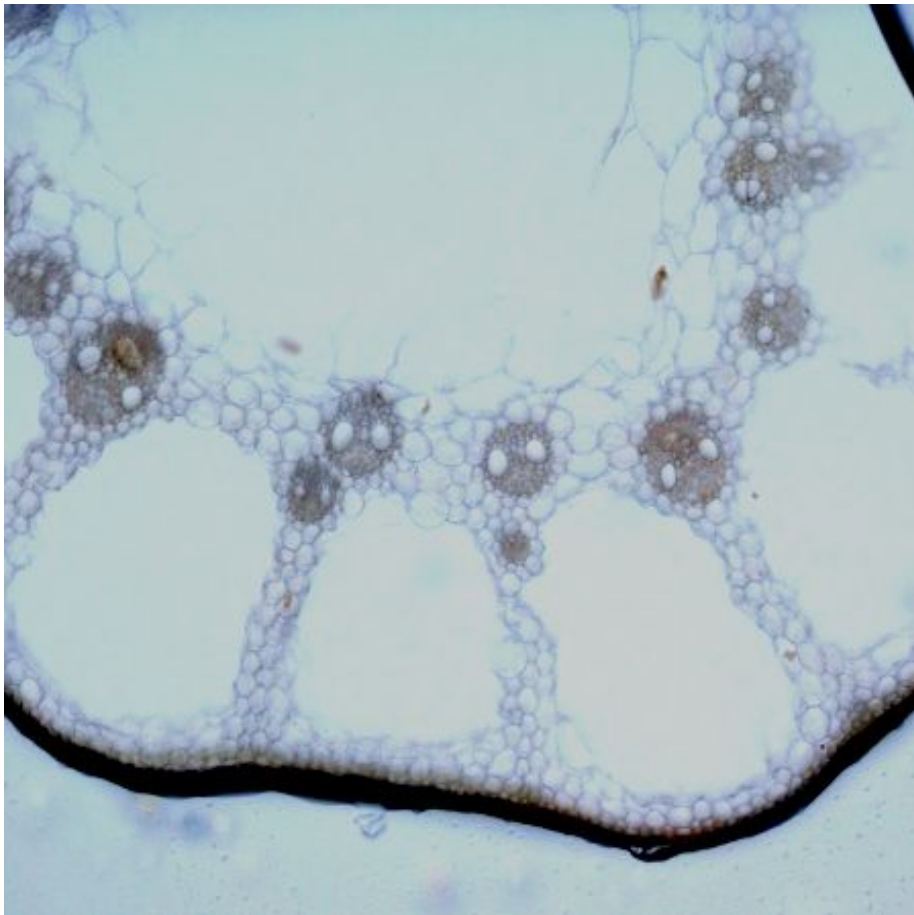
Вахта
трехлистная



Aerochima in
Menyanthes
trifoliata rhizome
(вахта
трехлистная)

Aerochima of *Eriophorum* (пушица):

stem



leave

- There are much more ecological factors, which influence on the OXYLOPHYTES; these factors caused evolutionary adaptations in plants.

- So the plants of oligotrophic swamps are adapted to high and low temperatures, lack of nutrients and oxygen.

Thanks for listening!!!



- (this was a leafstalk of *Comtarum palustre* – сабельник болотный, черешок листа)