Samčí gametofyt

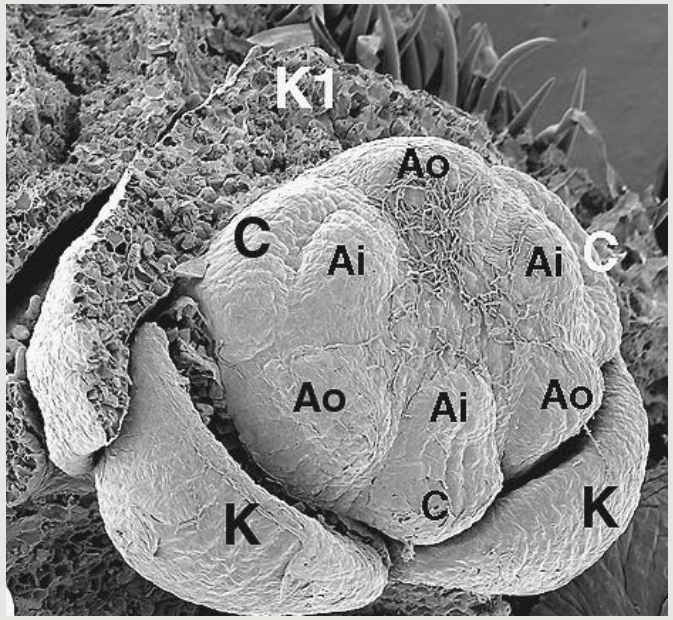
Rostlinná embryologie 2021 – Hana Cempírková

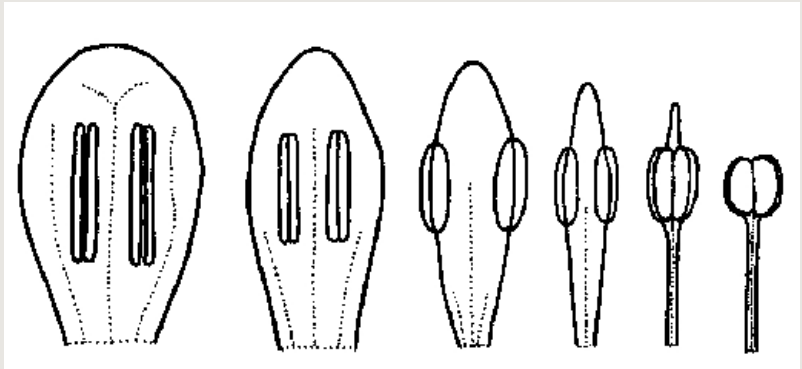
Jak vznikají tyčinky?

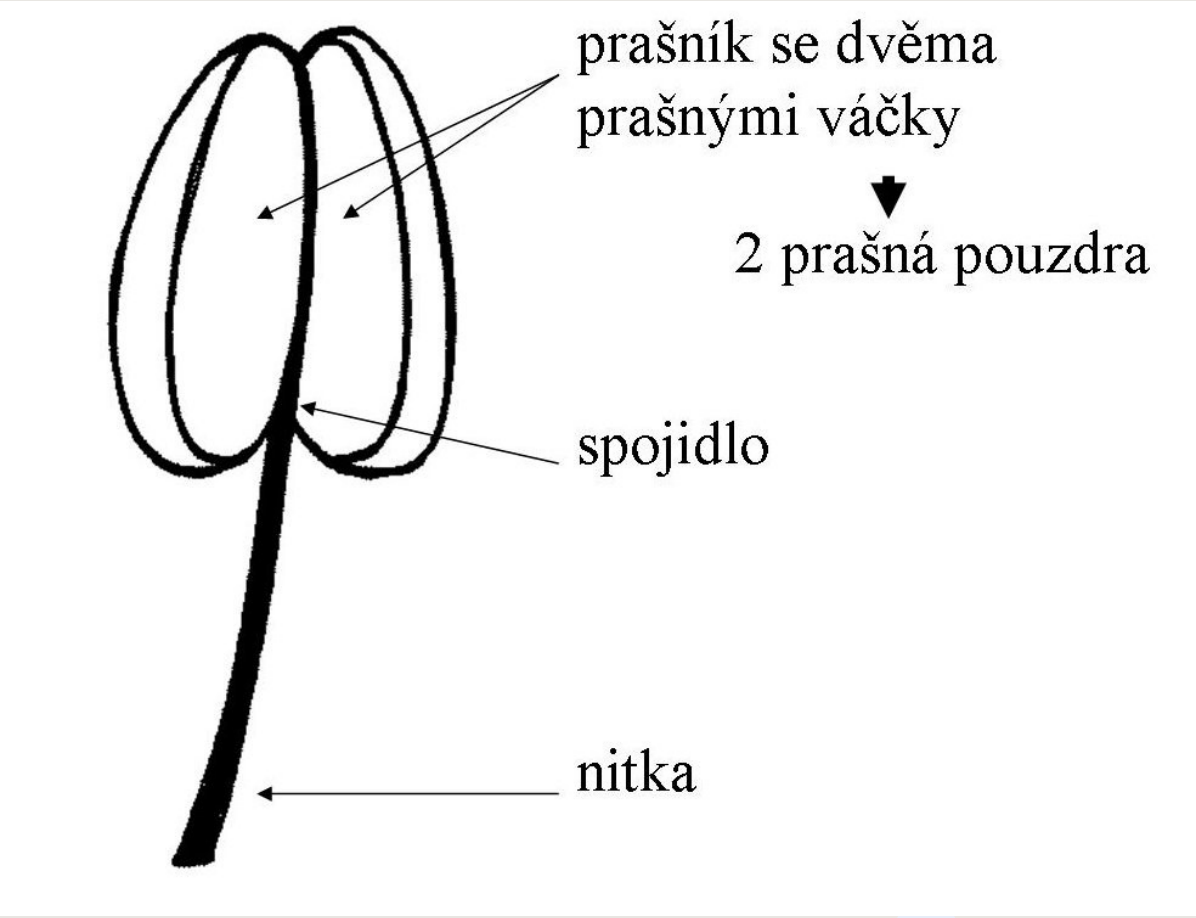
Jak vzniká pyl?

Jak vypadá pylové zrno zblízka?

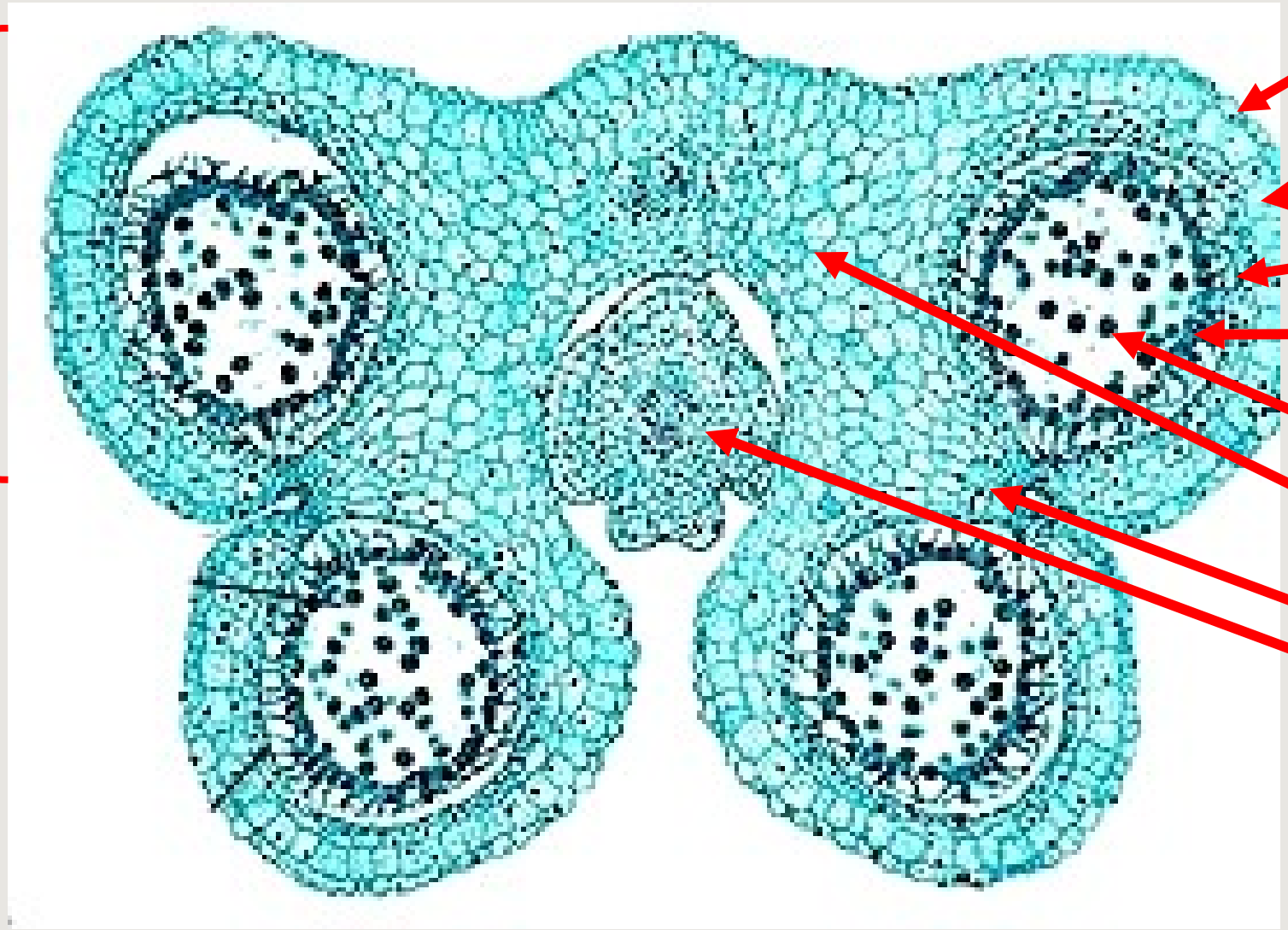
Tyčinka – samčí rozmnožovací orgán
Androeceum – soubor tyčinek



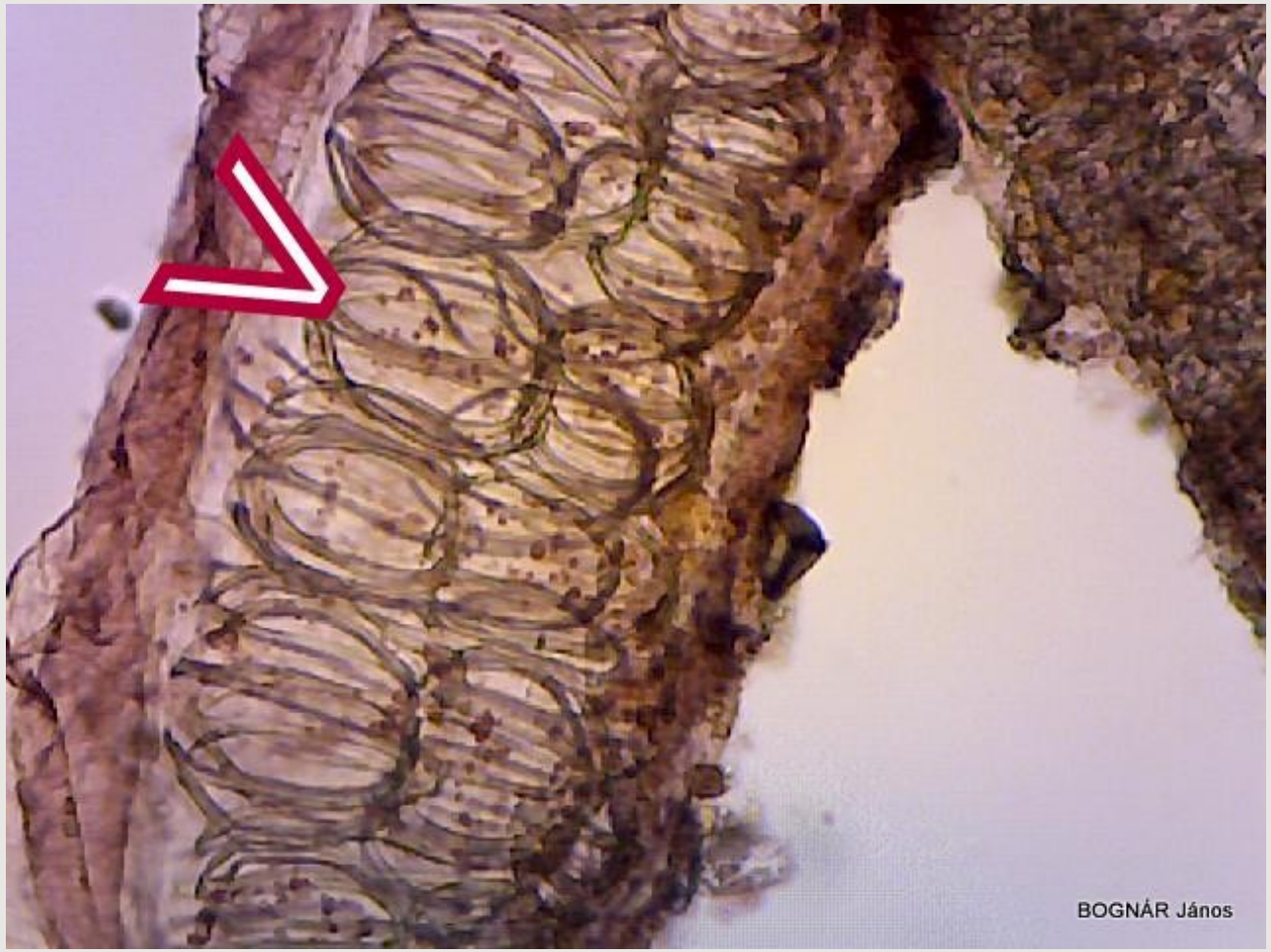




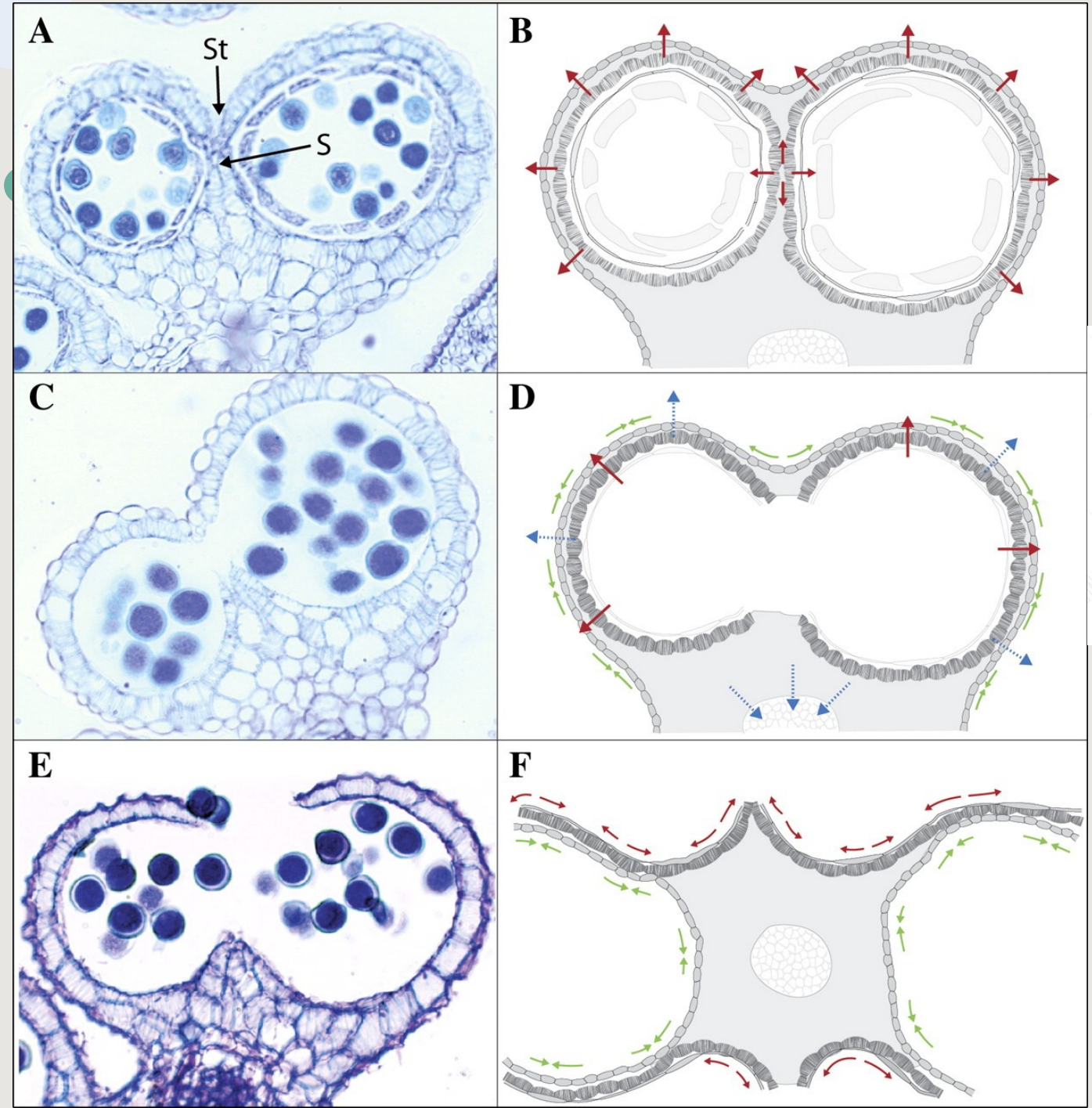
Anatomická stavba prašníku



Endothecium

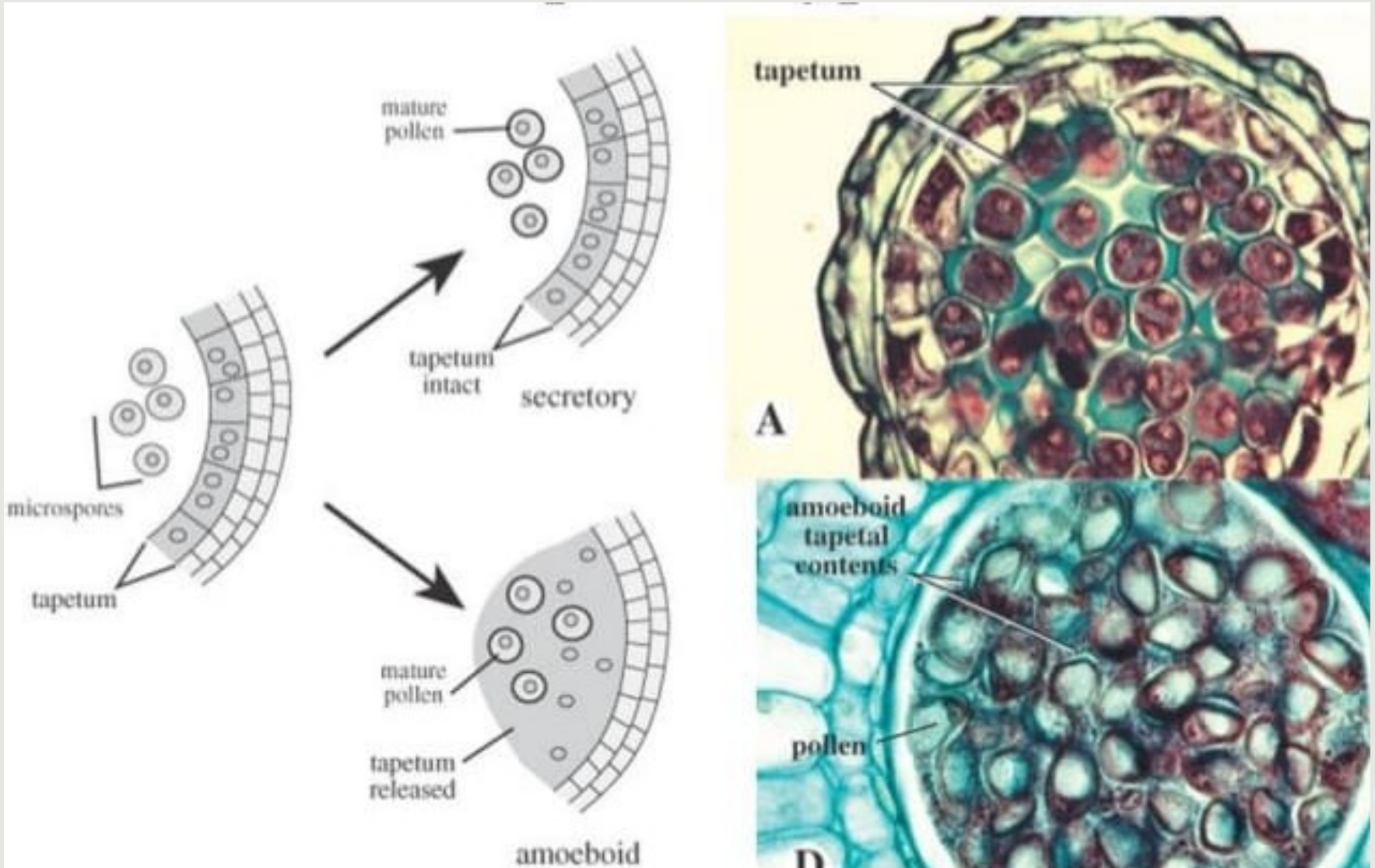


Dehiscence prašníku

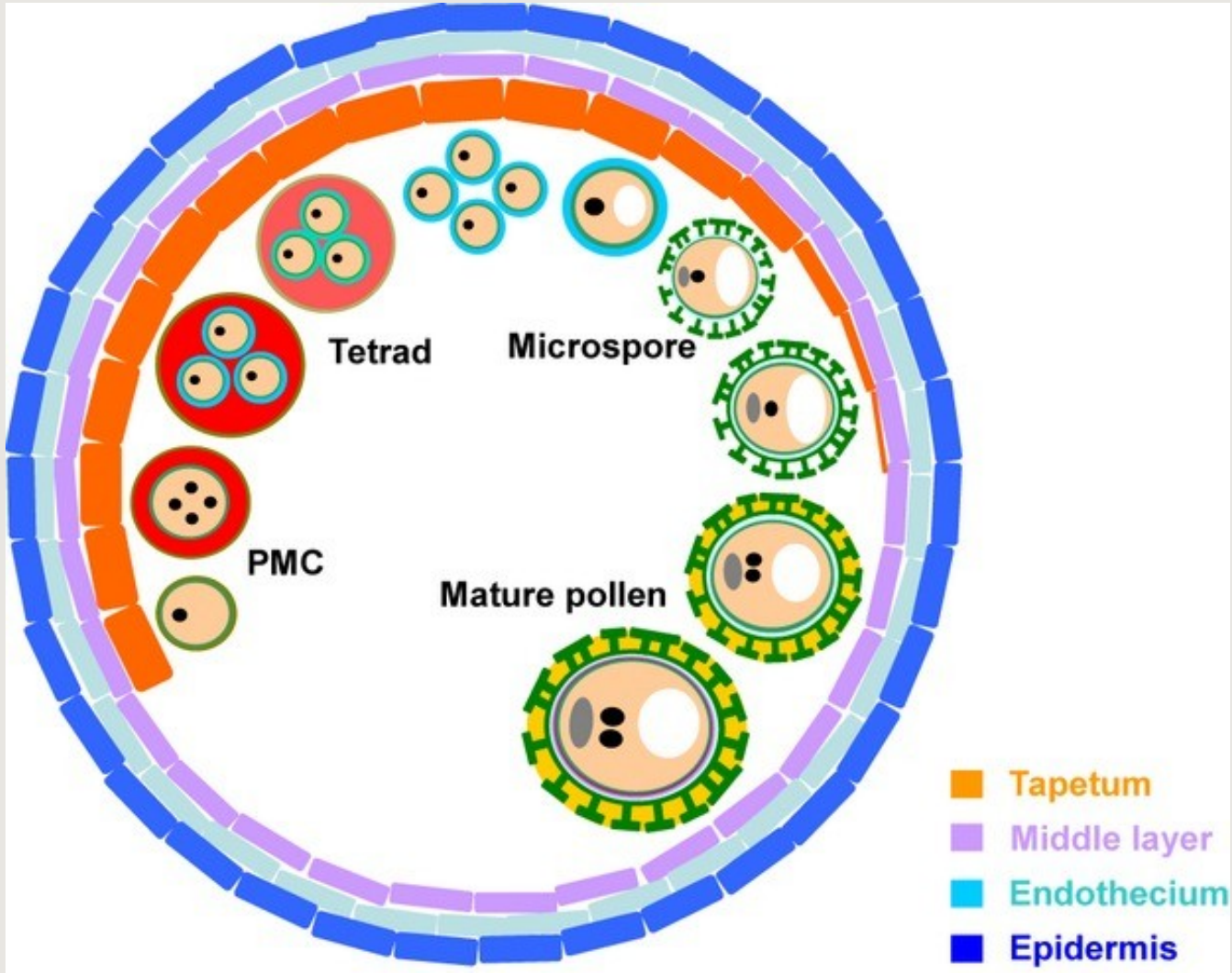


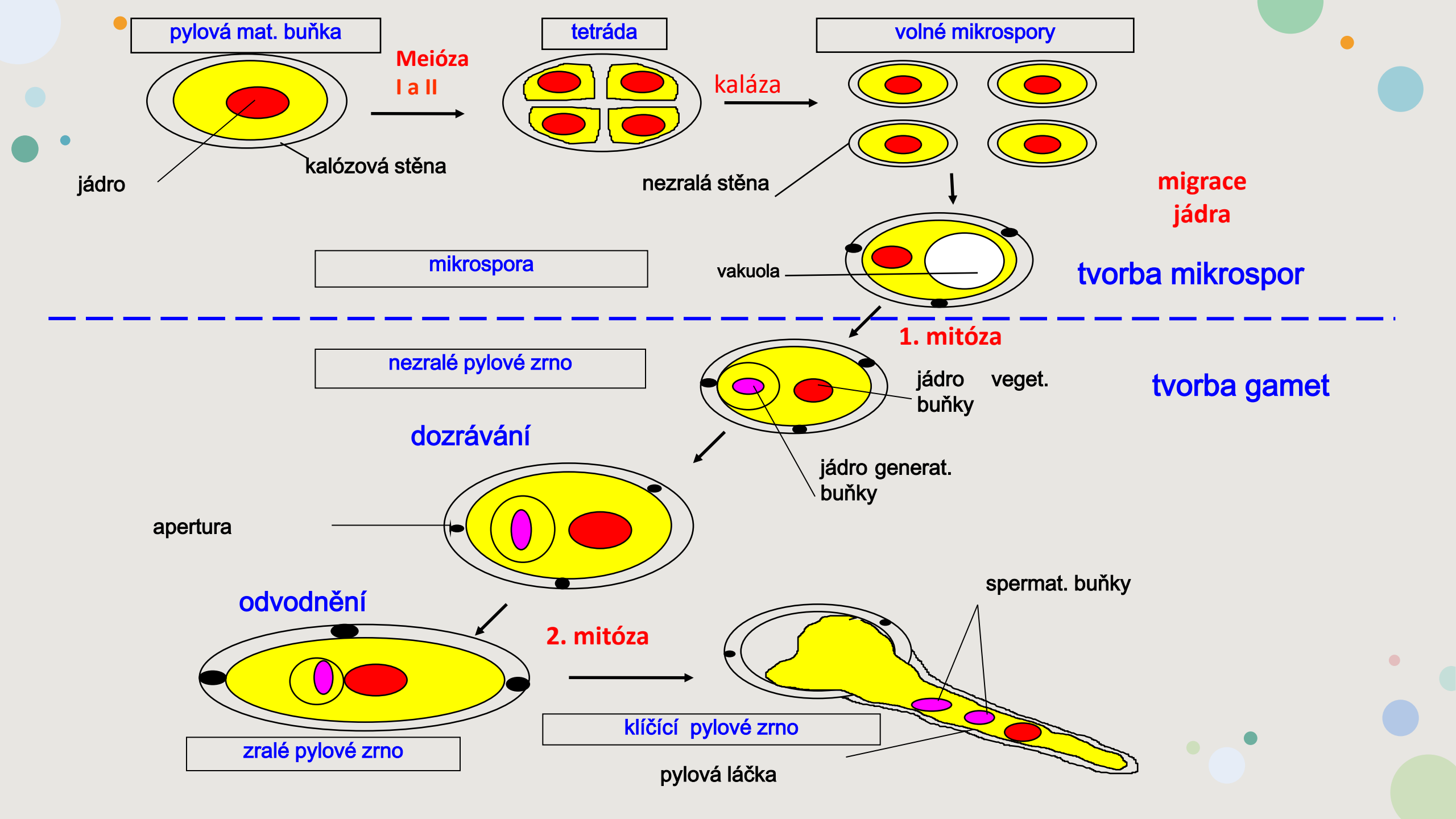
Wilson Z A et al. J. Exp. Bot. 2011;62:1633-1649

Tapetum – žlaznaté a améboidní



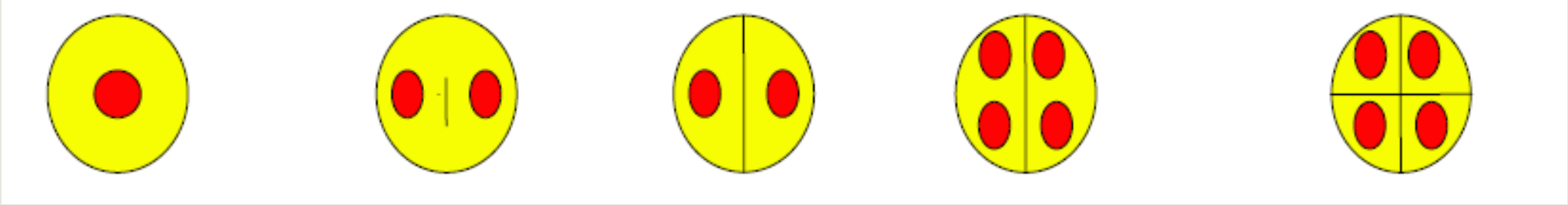
Vývoj tapeta je synchronizovaný z vývojem mikrospor



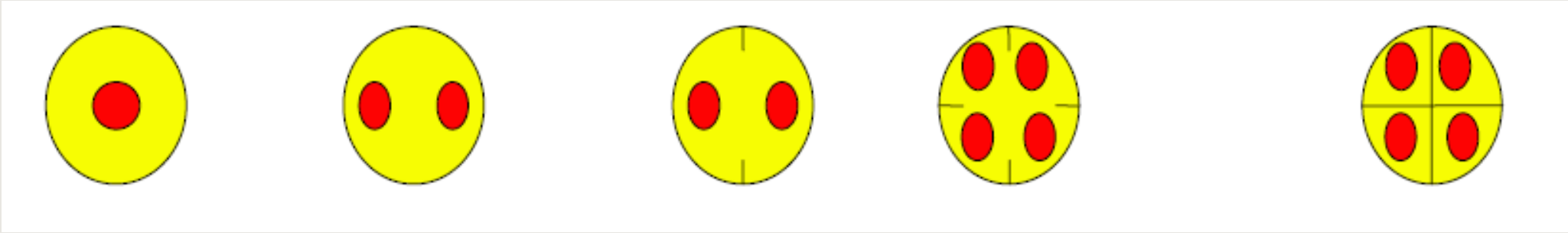

pylová mat. buňka
Meióza I a II
tetráda
kaláza
volné mikrospory
jádro
kalózová stěna
nezralá stěna
migrace jádra
mikrospora
vakuola
tvorba mikrospor
1. mitóza
nezralé pylové zrno
jádro veget. buňky
tvorba gamet
dozrávání
jádro generat. buňky
apertura
spermat. buňky
odvodnění
2. mitóza
klíčící pylové zrno
zralé pylové zrno
pylová láčka

Typy tvorby tetrád

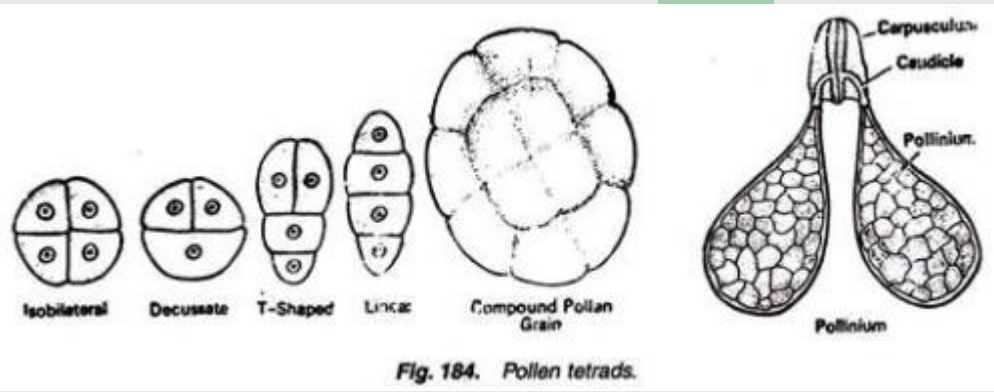
sukcesivní typ

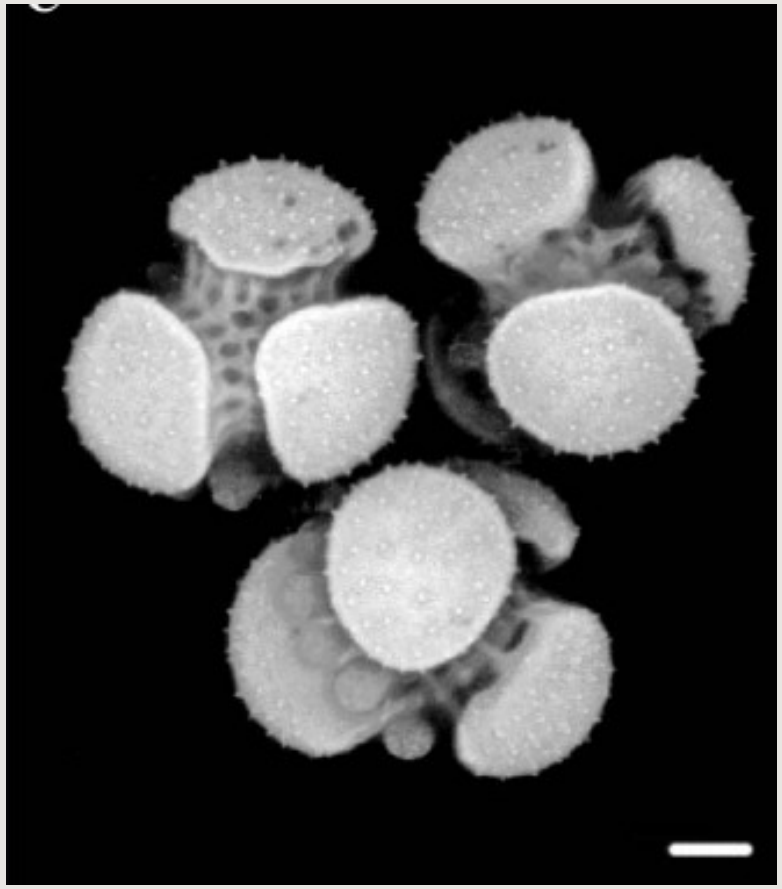


simultánní typ

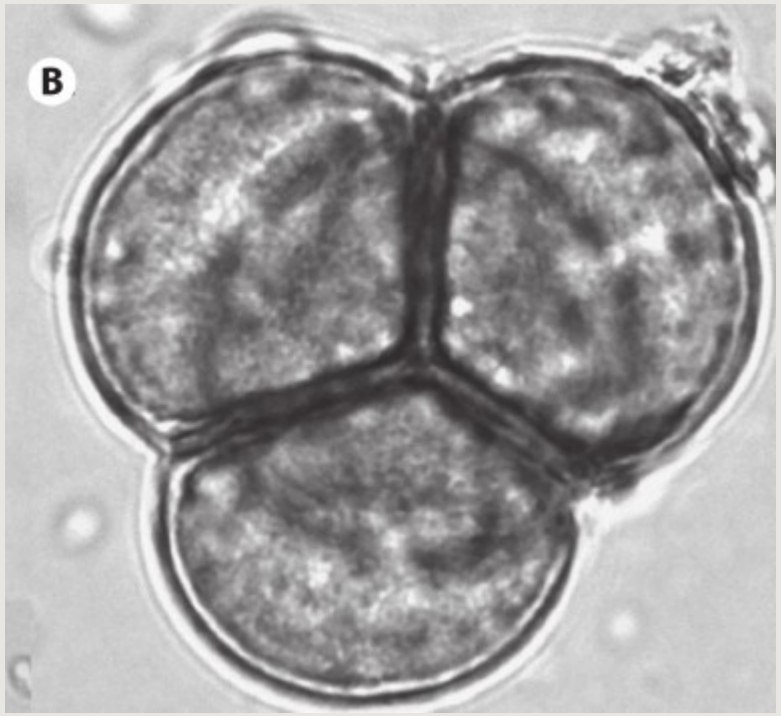


Přirozené tetrády pylu



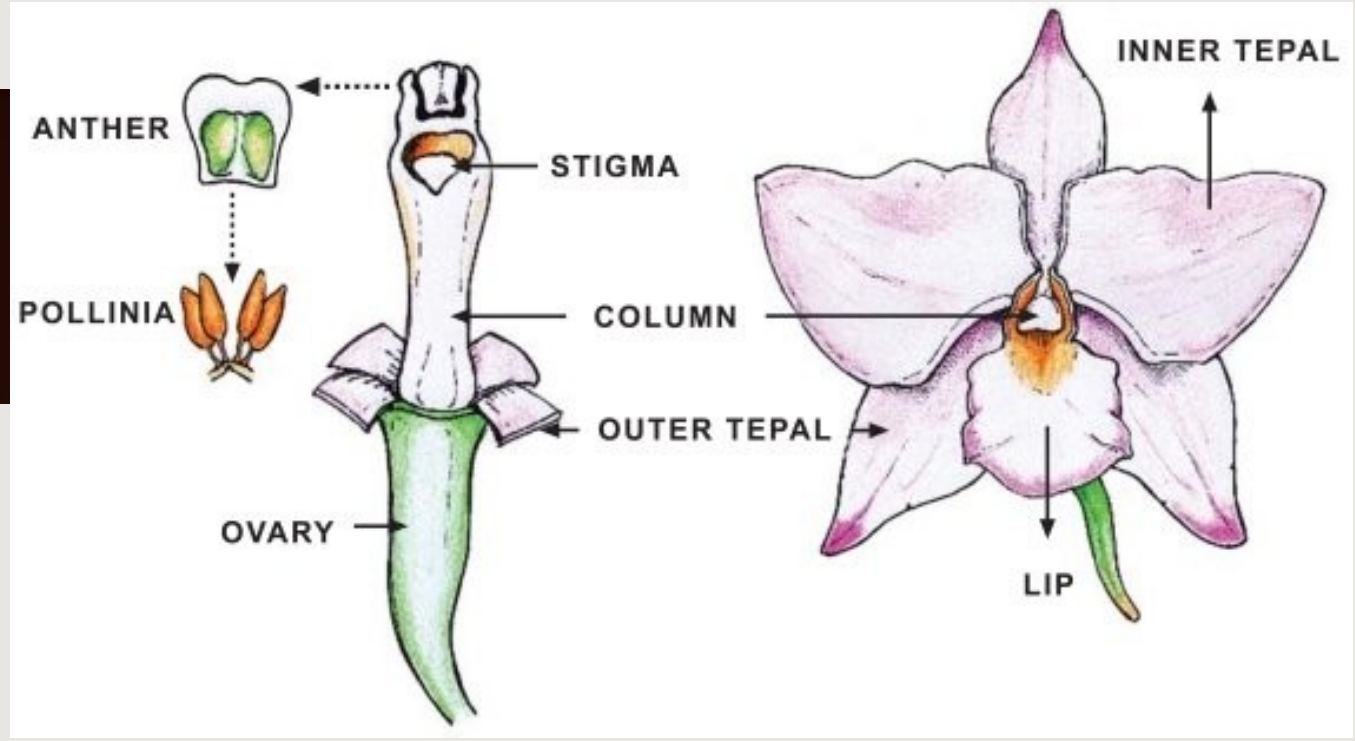


Drosera (rosnatka)

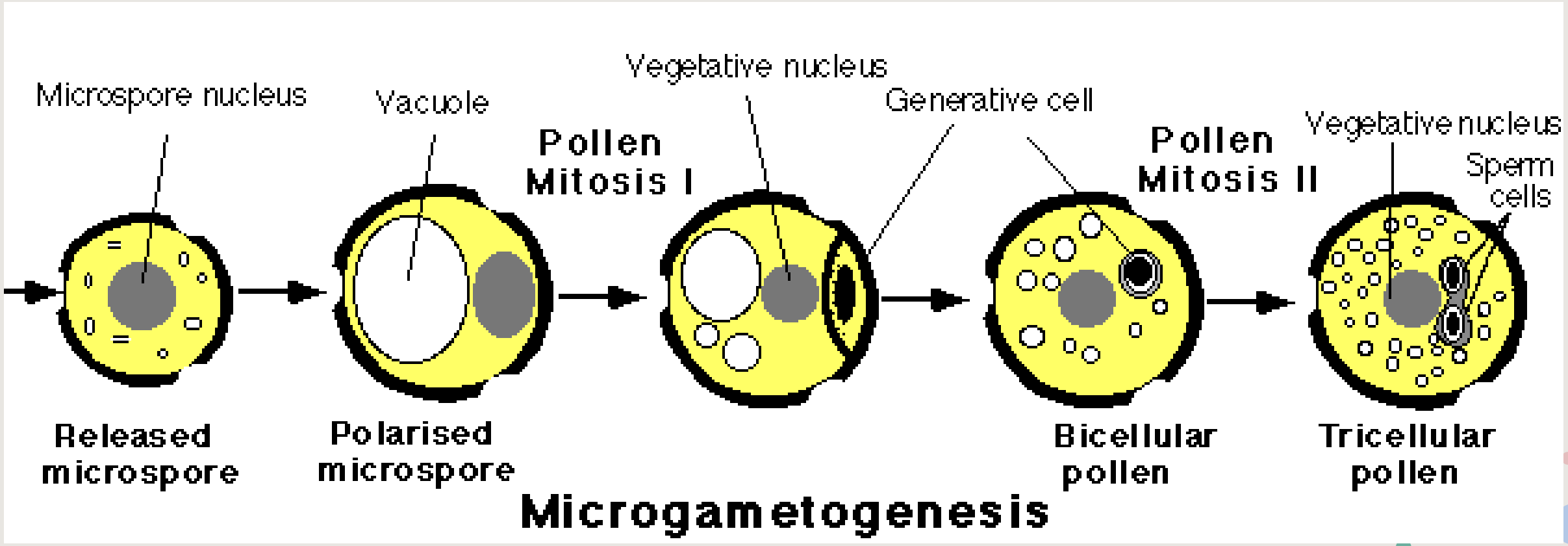


Ericaceae (vřesovité)

Polinárium (brylky) orchidejí

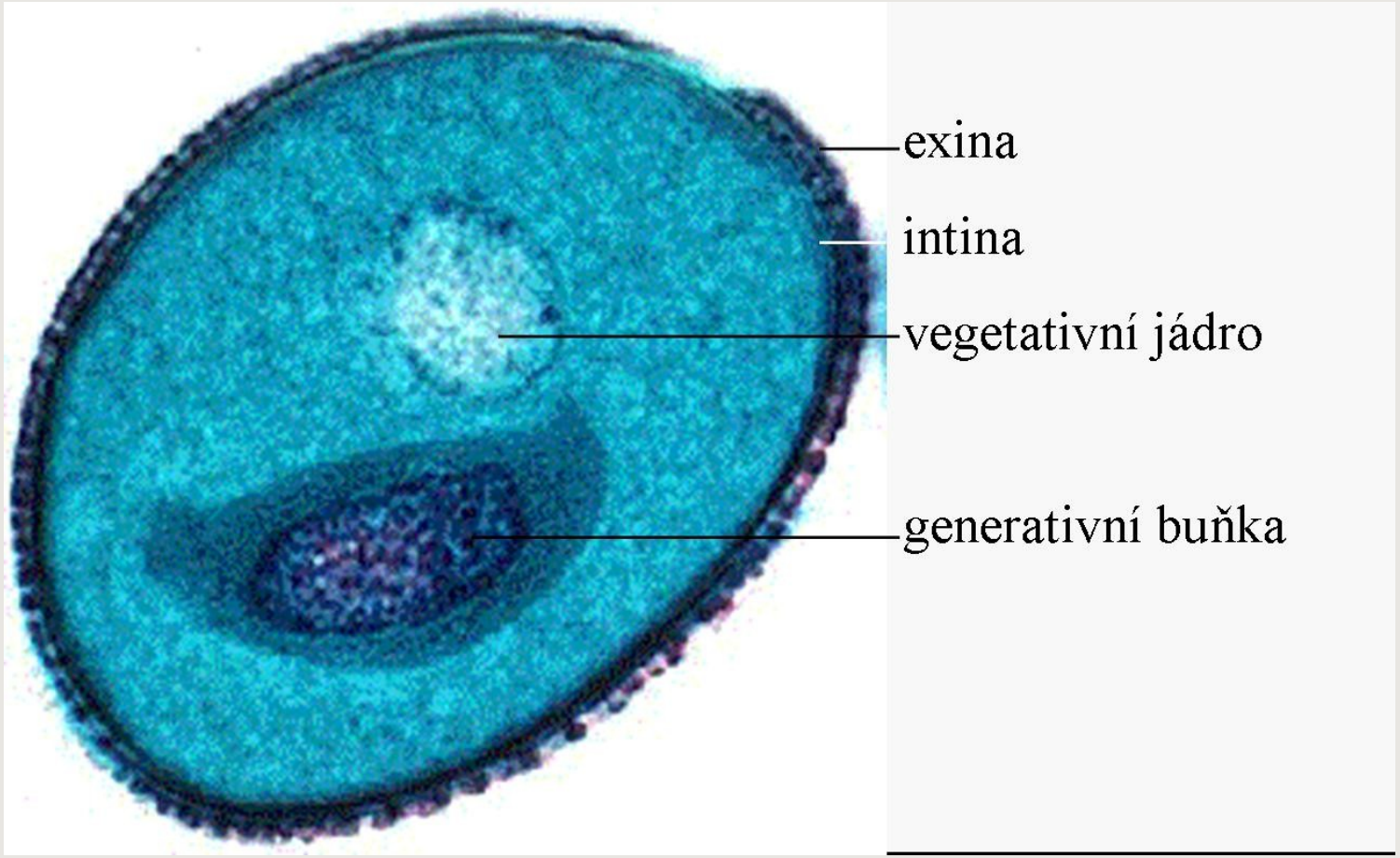


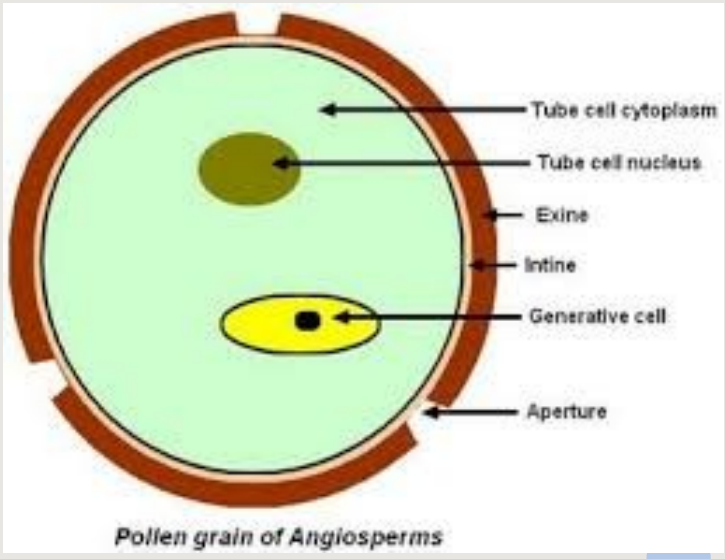
Dvojbuněčný a trojbuněčný pyl



Přestávka

Stavba pylového zrna





Klasifikace pylových zrn NPC

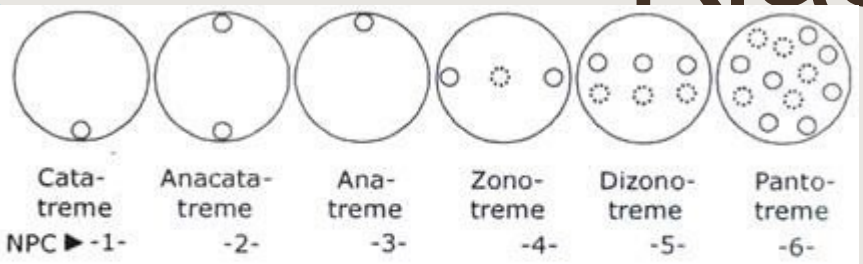


Figure 4.26

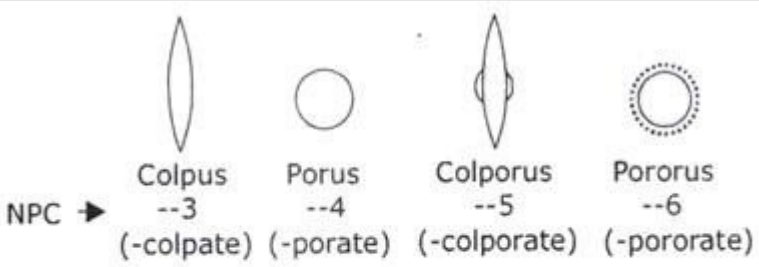


Figure 4.27

Schematic representation of character (C) of some apertures present in a pollen grain and its number in NPC. Dotted line indicates different plane of focus.

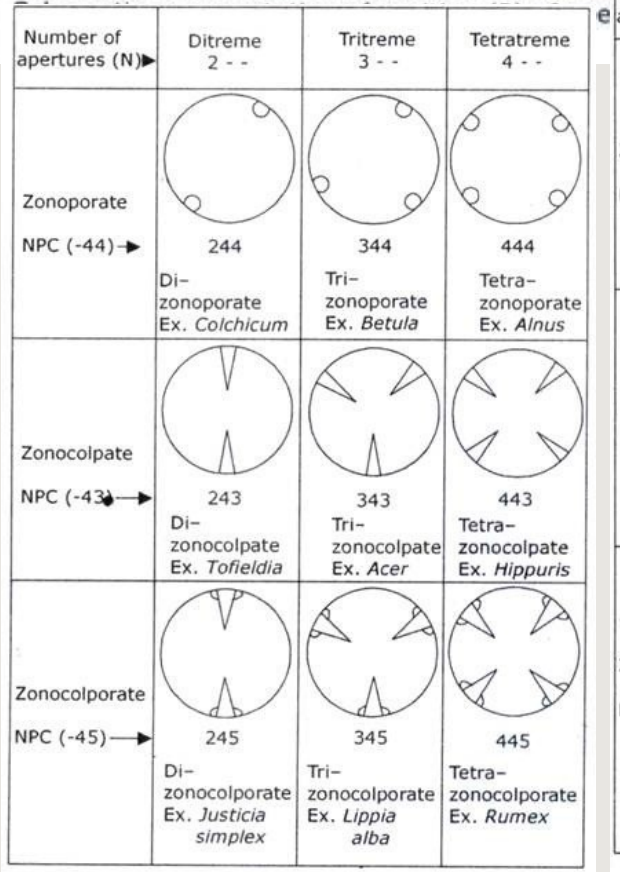


Figure 4.28

Diagrammatic representation of NPC of some pollen in polar view.

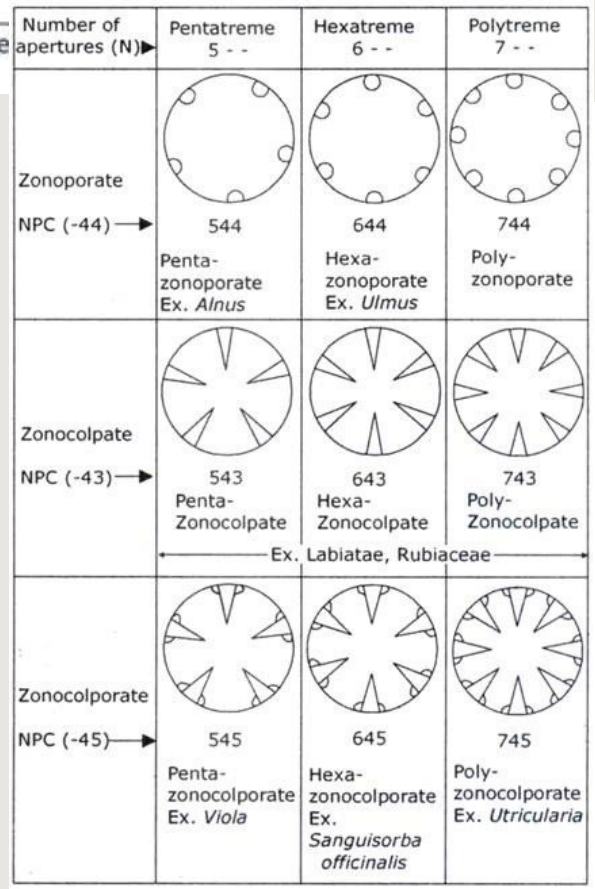


Figure 4.29

Diagrammatic representation of NPC of some pollen in polar view.

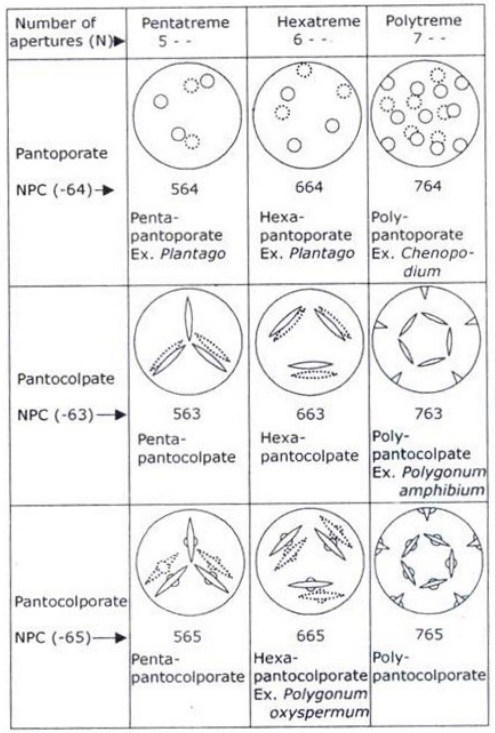
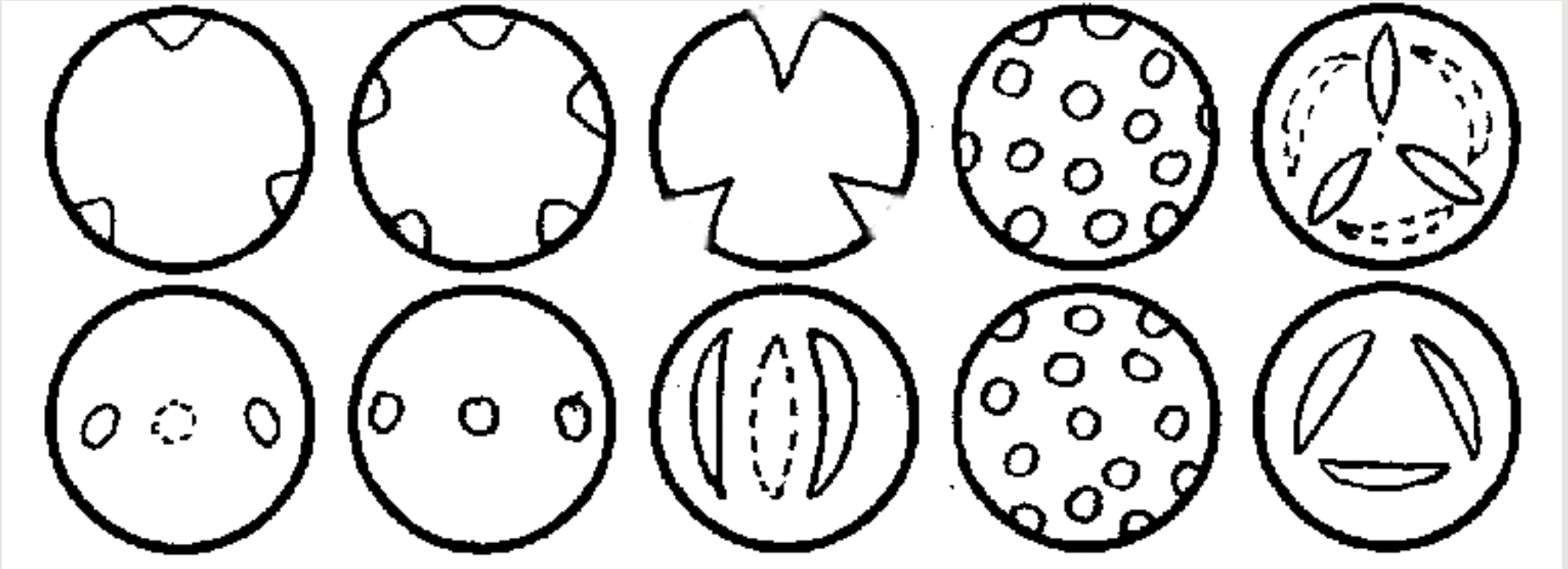


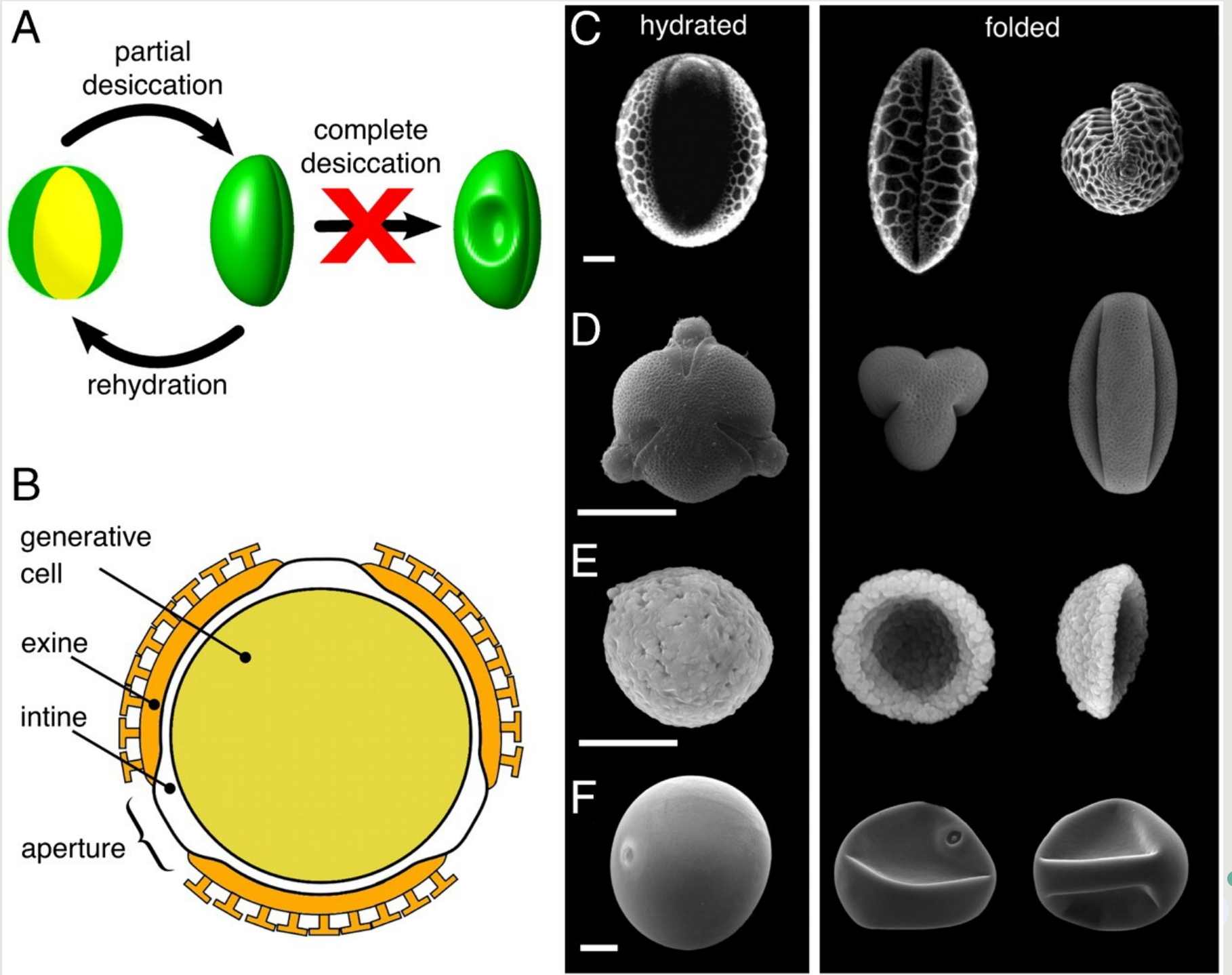
Figure 4.30

Diagrammatic representation of NPC of some pollen in equatorial view. Dotted lines indicate different plane of focus.

Příklady různých typů pylových zrn



1 – trizonoporátní (bříza)
2 – pentazonoporátní (olše)
3 – trizonokolpátní (javor, tabák)
4 – polypantoporátní (merlík, tykev)
5 – hexapantokolpátní (kuřinka)


A
partial
desiccation
complete
desiccation
rehydration
B
generative
cell
exine
intine
aperture
C
hydrated
folded
D
E
F

Sporoderma – stěna pylového zrna

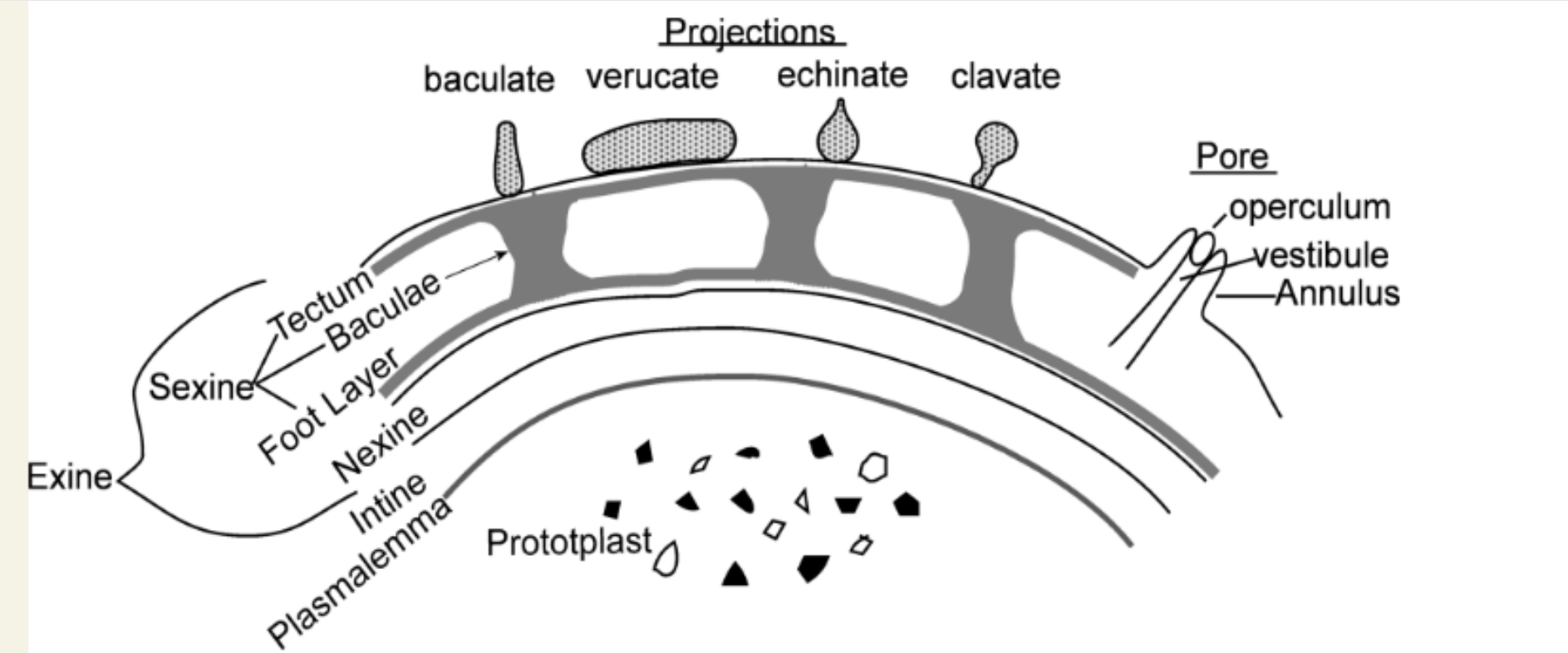


Figure 2 - 1 : A section of pollen wall showing structure and some features.

Sporopolenin

Stavba exiny pylového zrna pelyňku (*Artemisia*)

ektexina

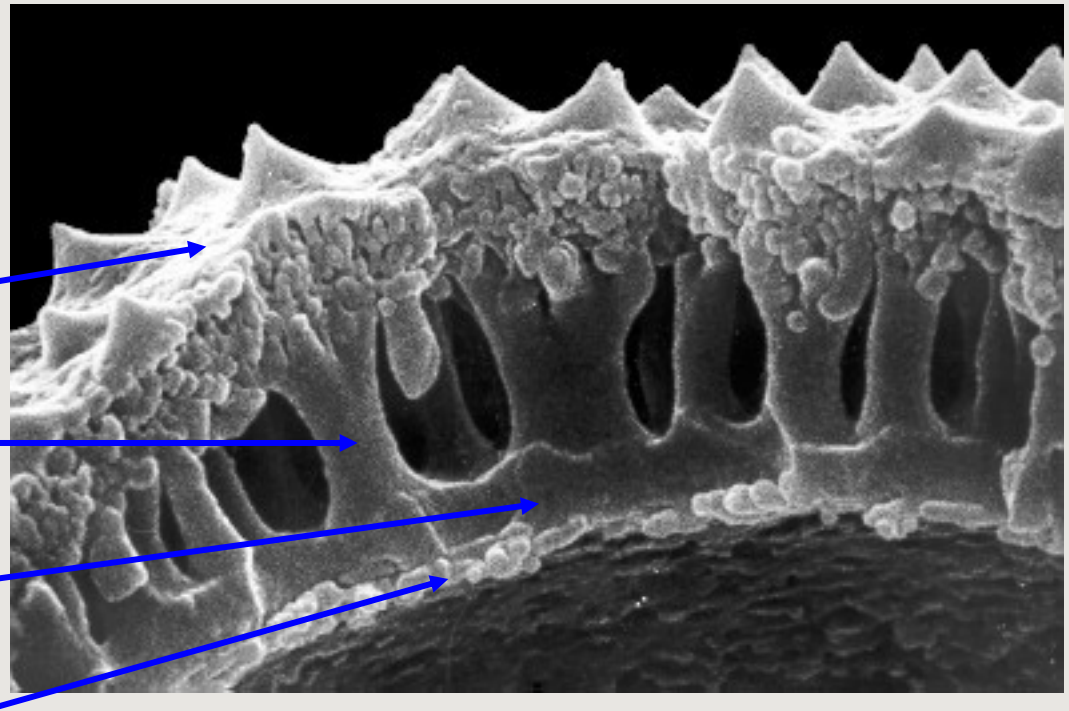
tektum

bakuly

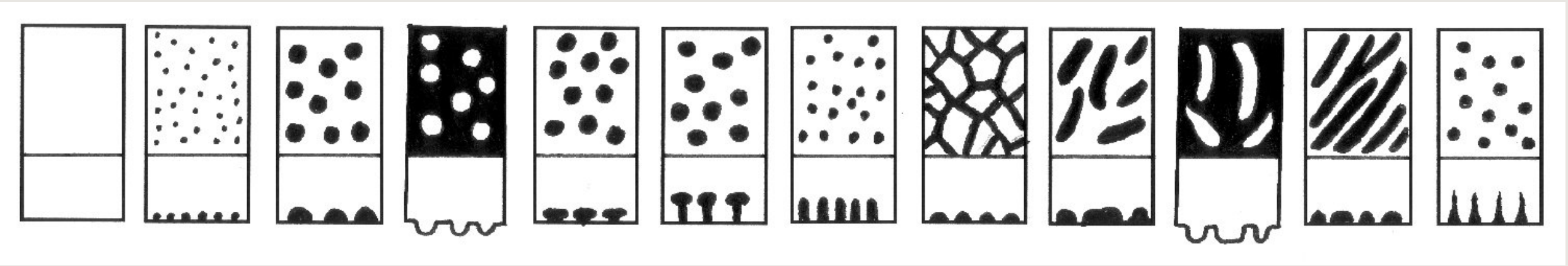
základní vrstva

endexina

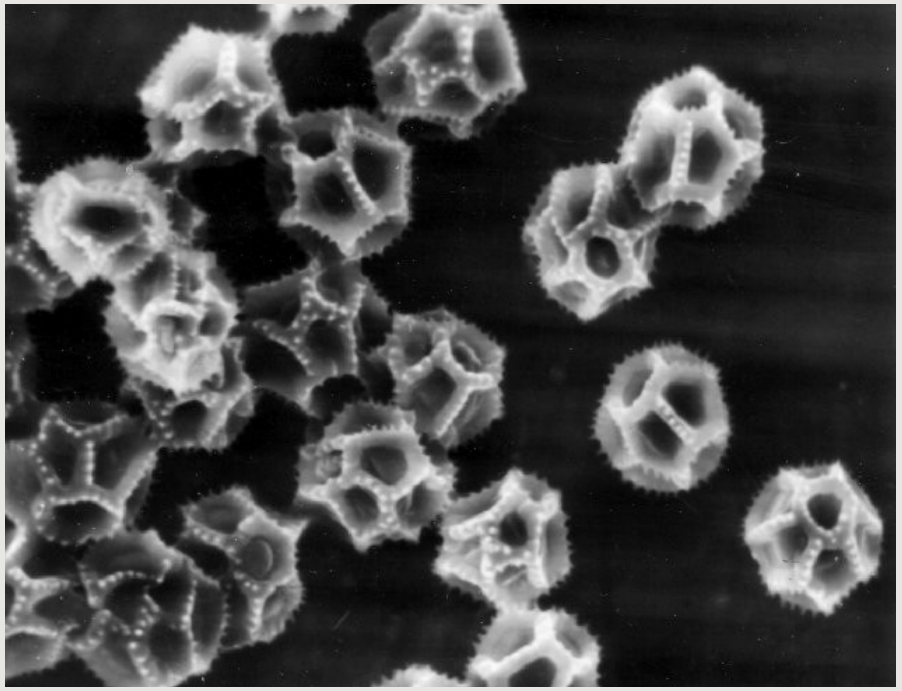
lamelární vrstva

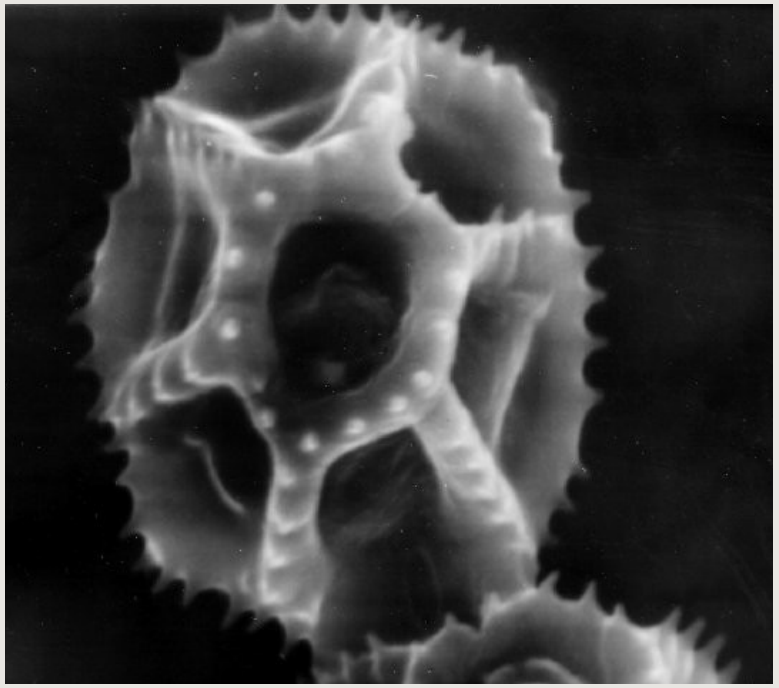


Příklady typů skulptur (ornamentace) exiny:



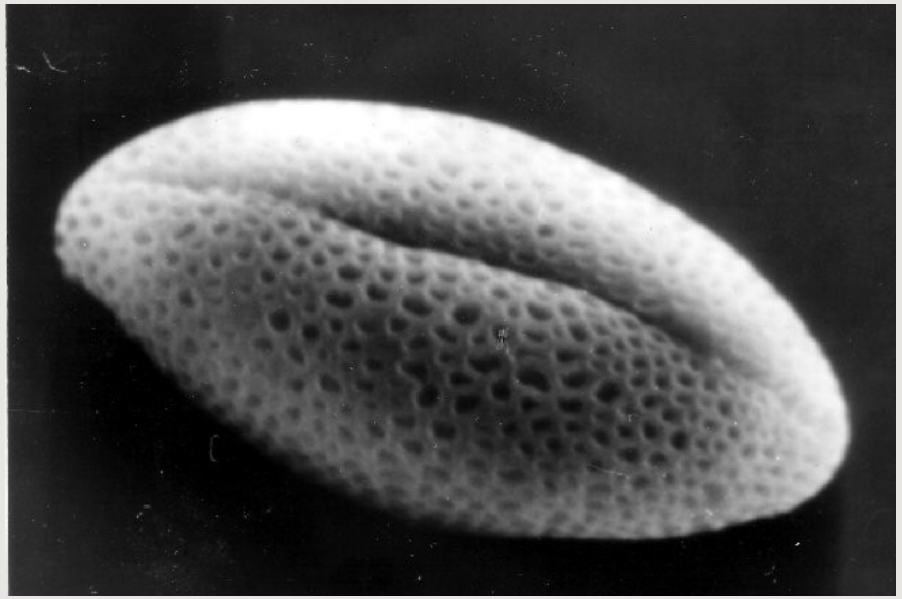
psilátní granulátní verukátní foveolátní gemátní klavátní bakulátní retikulátní rugulátní fosulátní striátní echinátní



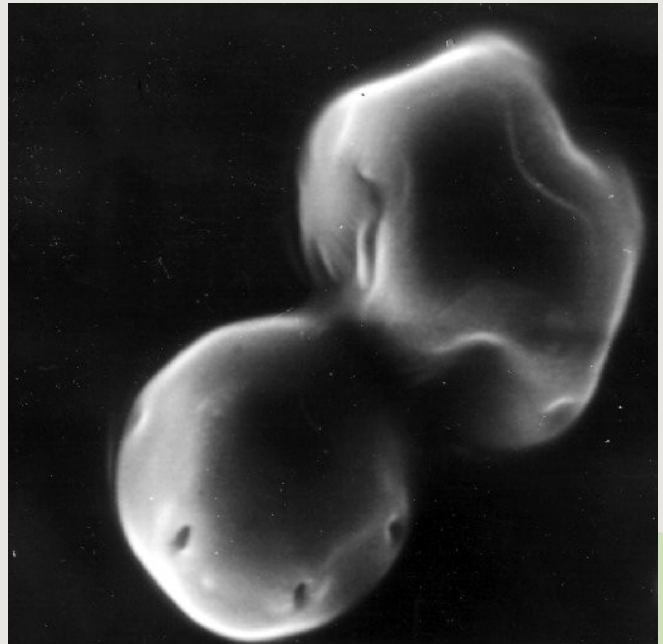


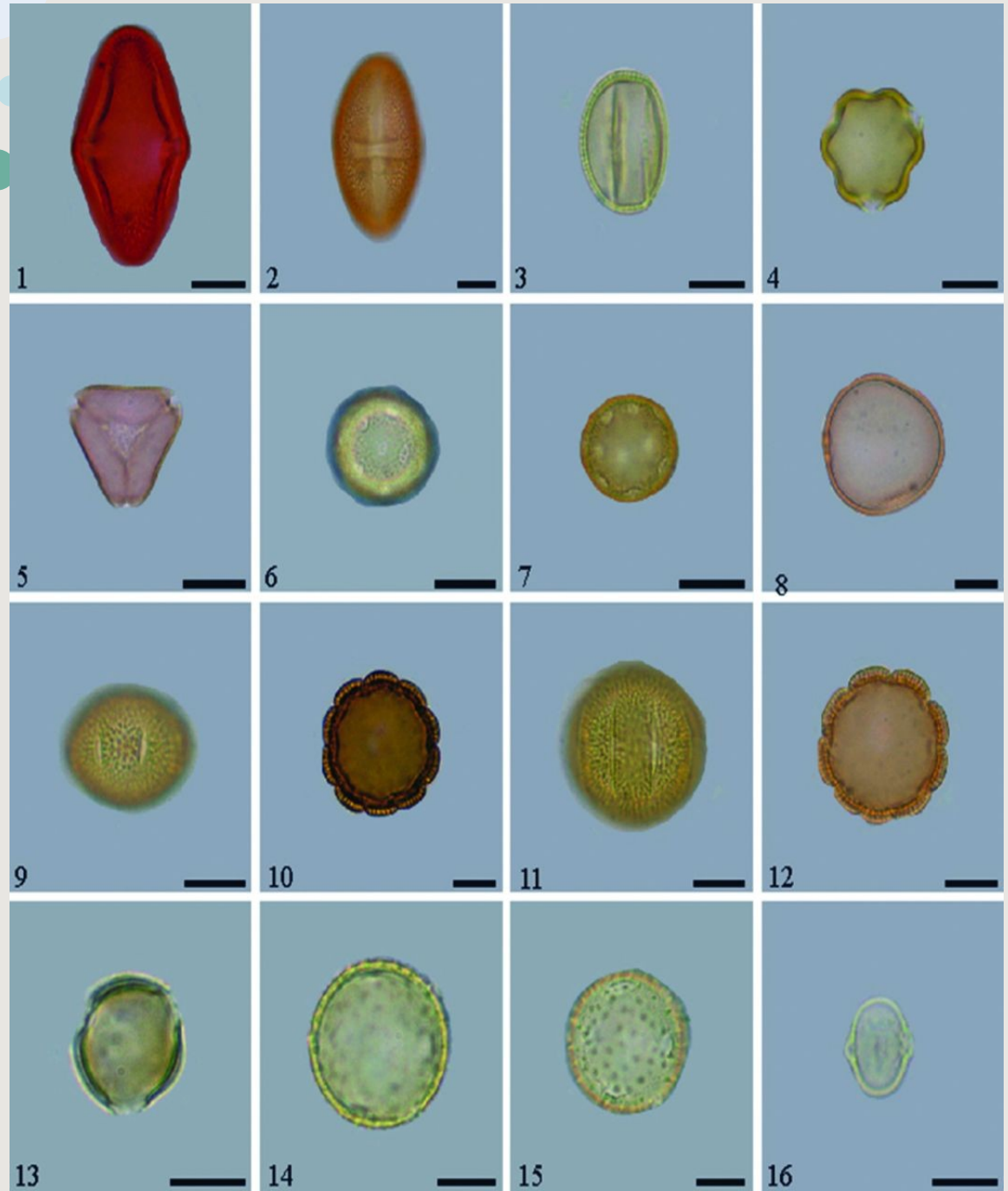
fenestrátní pylová zrna
locika kompasová
(*Lactuca serriola*).

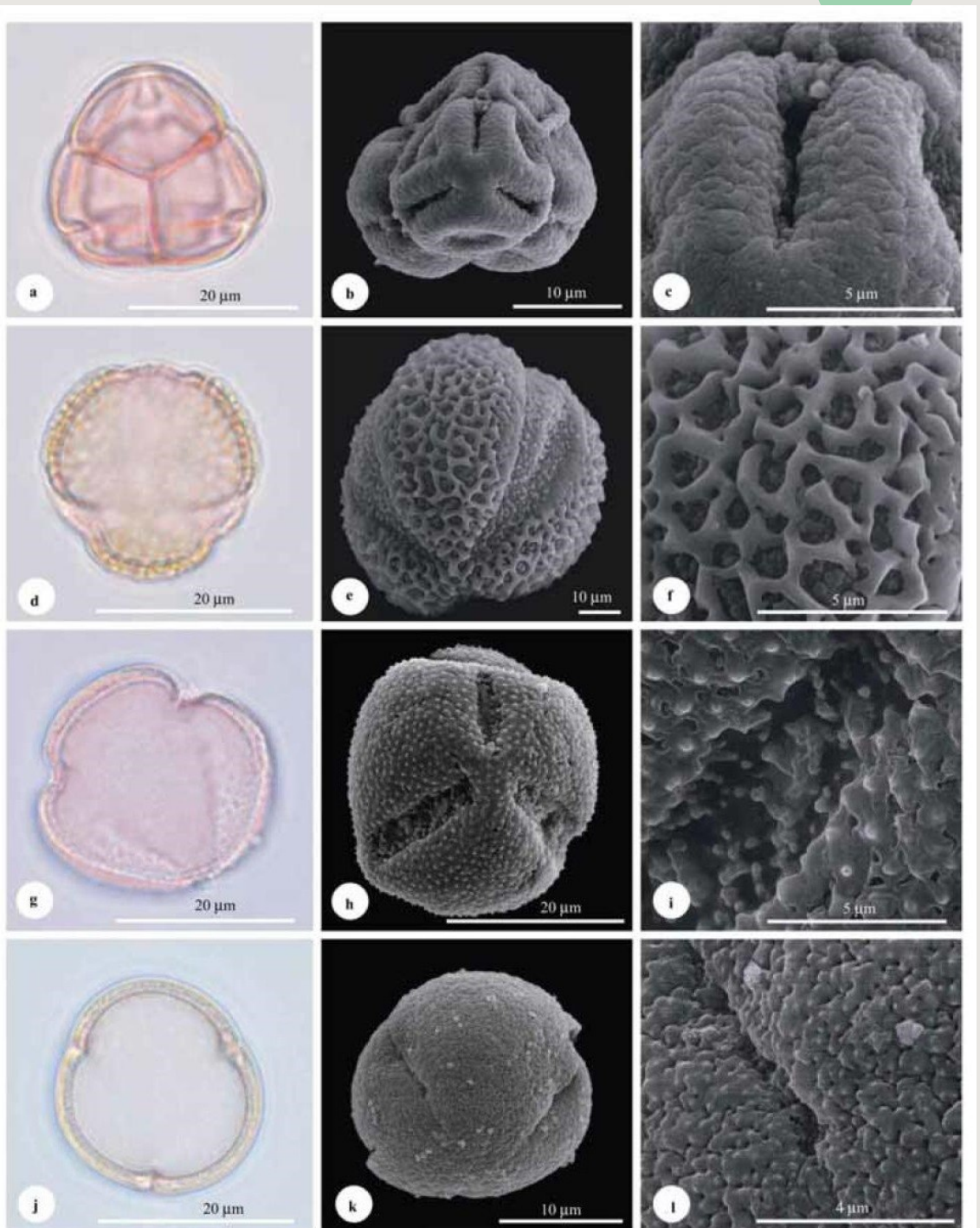
pentazonokolpátní pylové zrno
olše zelené (*Alnus viridis*)



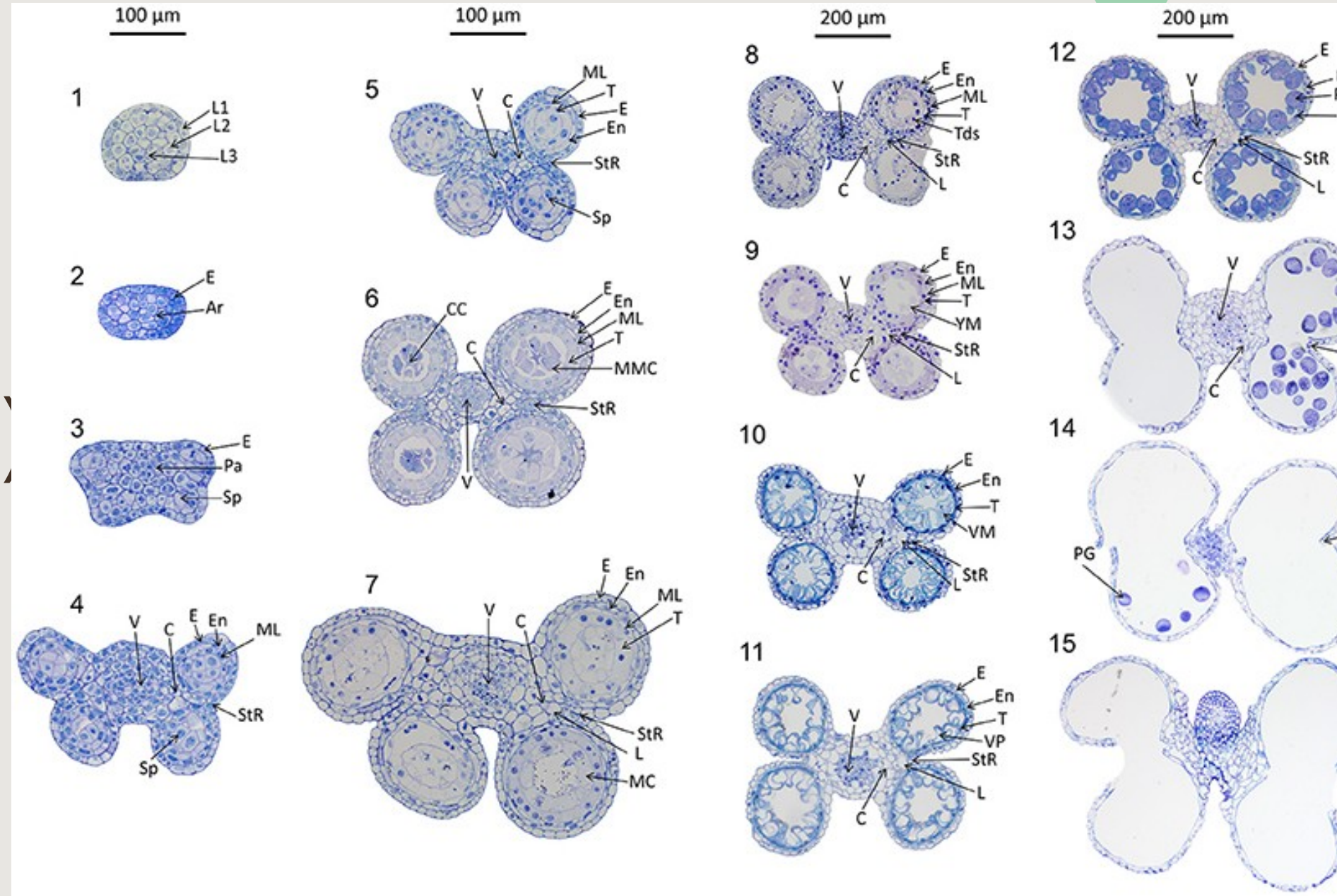
kolpátní pylové zrno
s povrchem retikulátním
brukev řepka olejka
(*Brassica oleracea*)



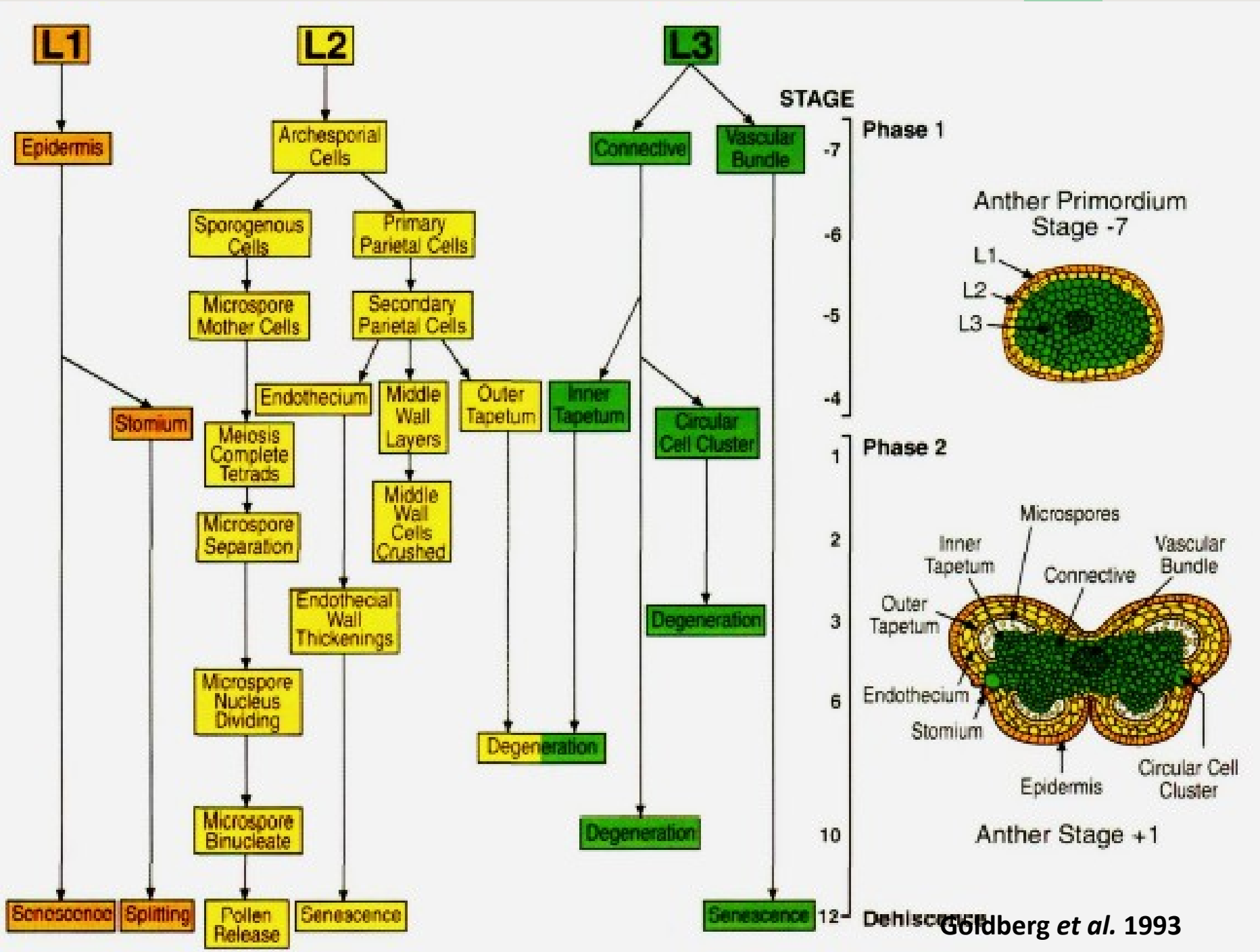

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16


a
20 µm
b
10 µm
c
5 µm
d
20 µm
e
10 µm
f
5 µm
g
20 µm
h
20 µm
i
5 µm
j
20 µm
k
10 µm
l
4 µm

Vývoj prašníku (*Triticum aestivum*)

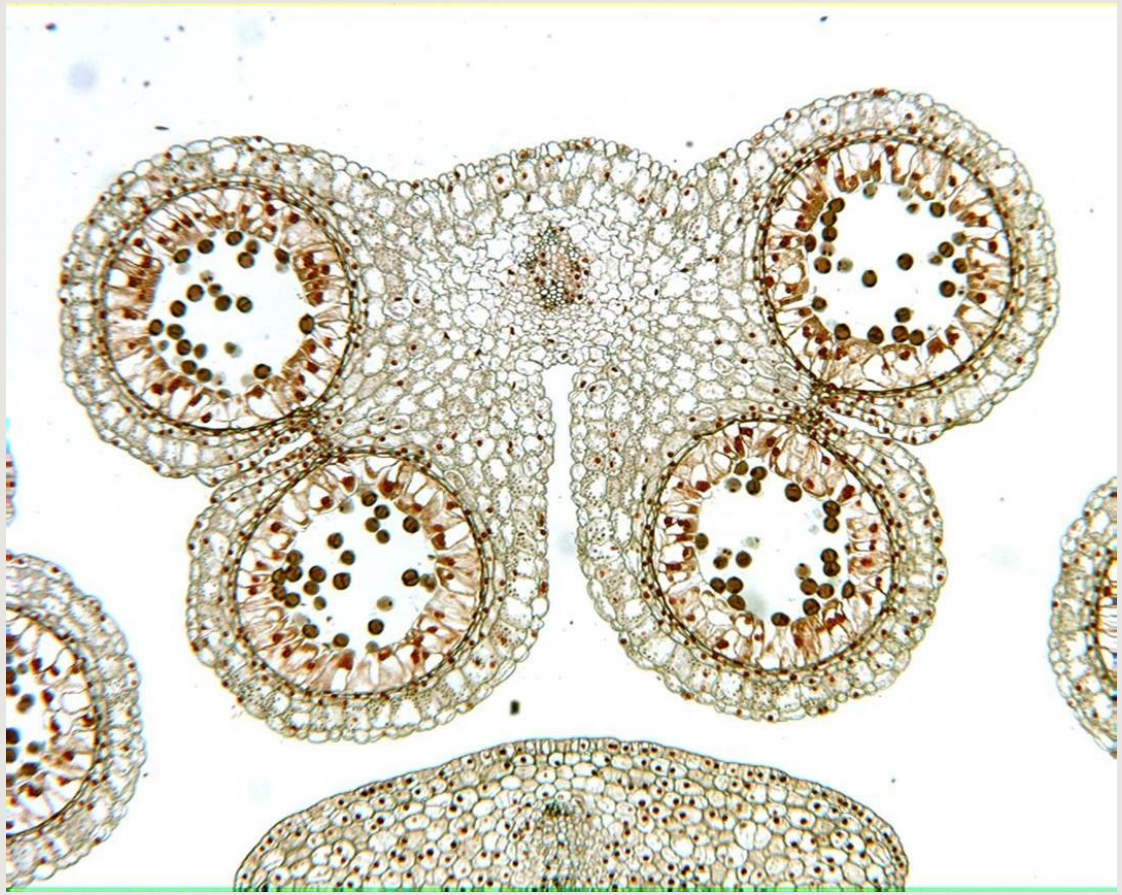


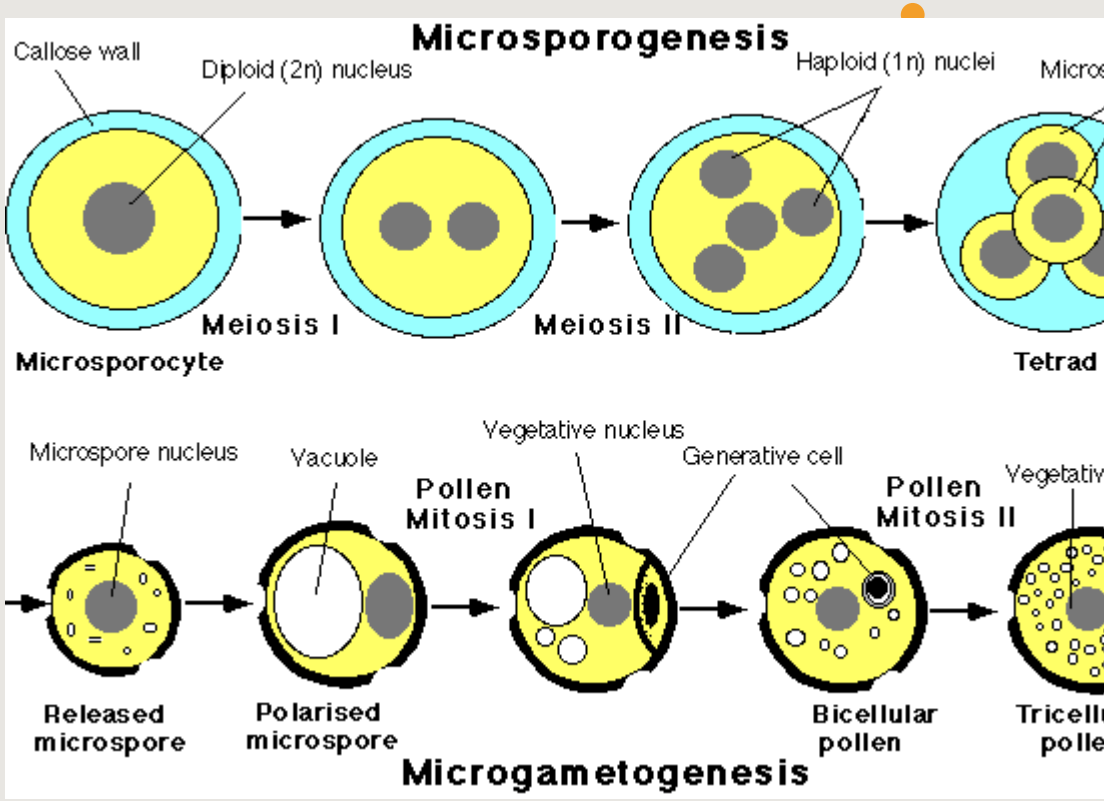
Vývoj prašníku tabáku



Goldberg *et al.* 1993

Shrnutí




Microsporogenesis
Callose wall
Diploid (2n) nucleus
Haploid (1n) nuclei
Meiosis I
Meiosis II
Microsporocyte
Tetrad
Microspore nucleus
Vacuole
Vegetative nucleus
Generative cell
Pollen Mitosis I
Pollen Mitosis II
Released microspore
Polarised microspore
Bicellular pollen
Microgametogenesis