

Samičí gametofyt a gameta

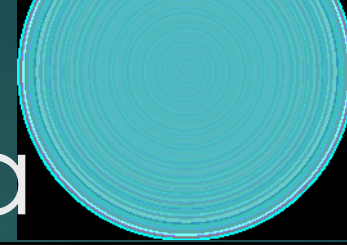
ROSTLINNÁ EMBRYOLOGIE, PODZIMNÍ SEMESTR 2023

MGR. HANA CEMPÍRKOVÁ, PH.D.



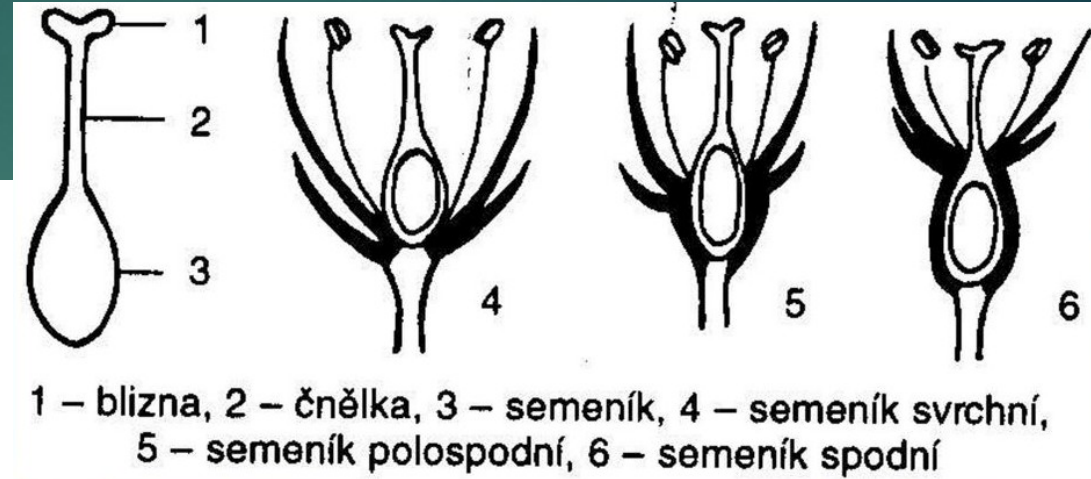
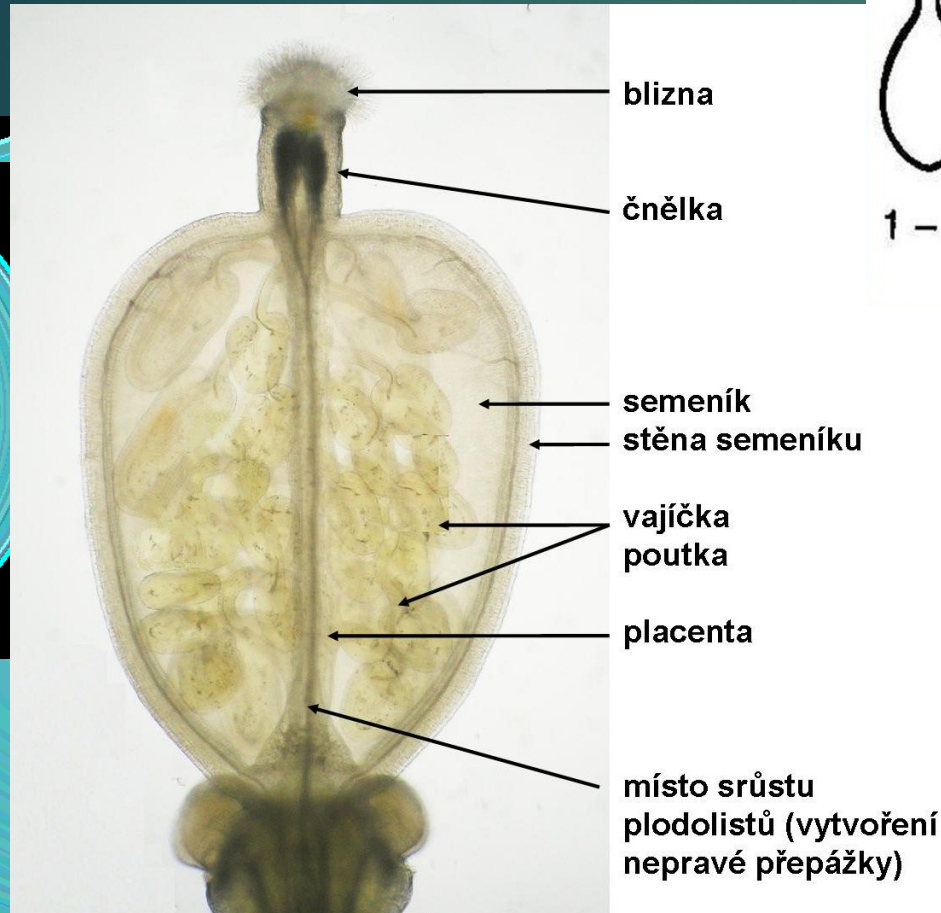
Samičí gametofyt a gameta

- ▶ Jak to vypadá uvnitř pestíku?
- ▶ Co je samičí gameta a jak vzniká?
- ▶ Jak to vypadá uvnitř zralého vajíčka?

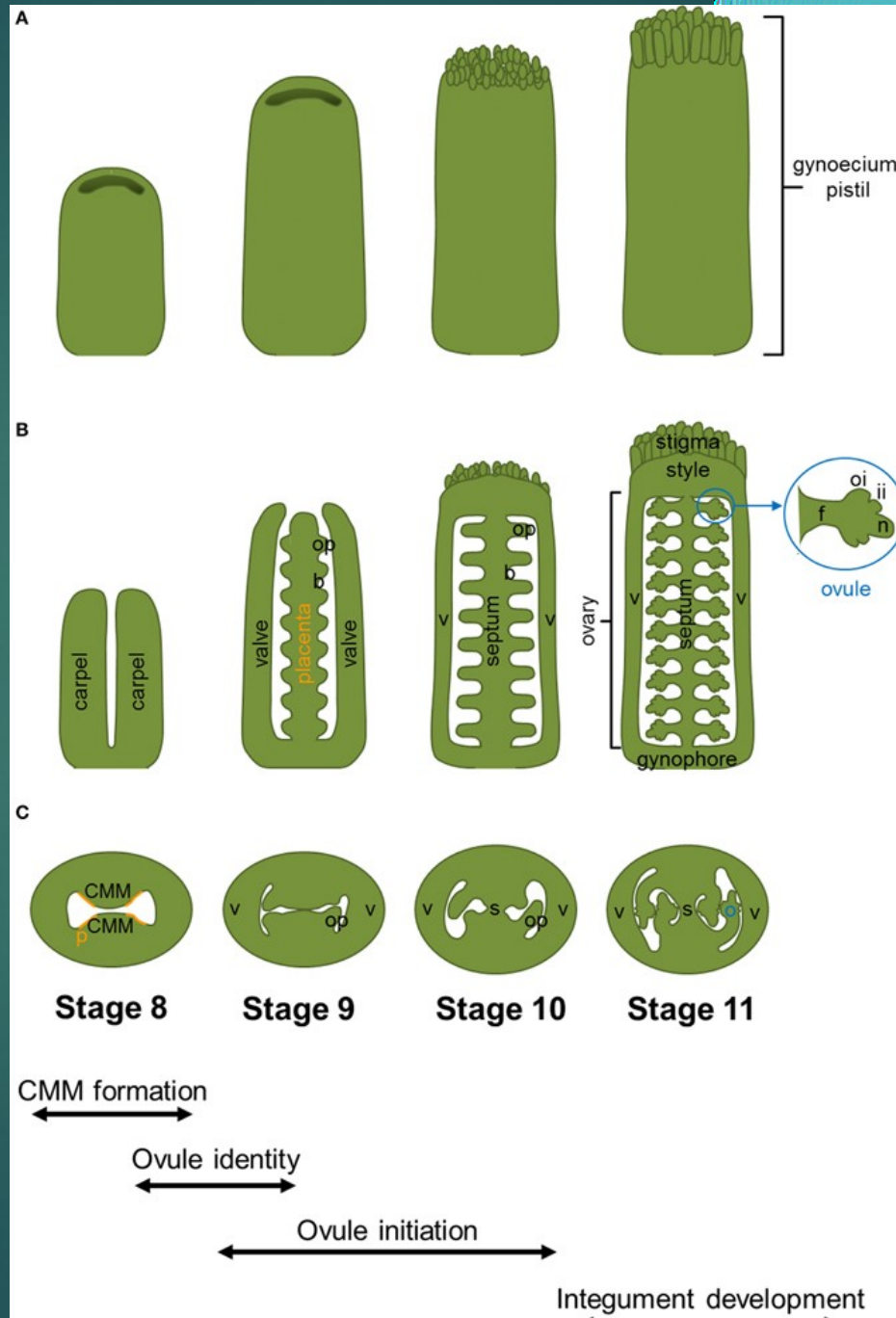


Pestík – samičí pohlavní ústrojí

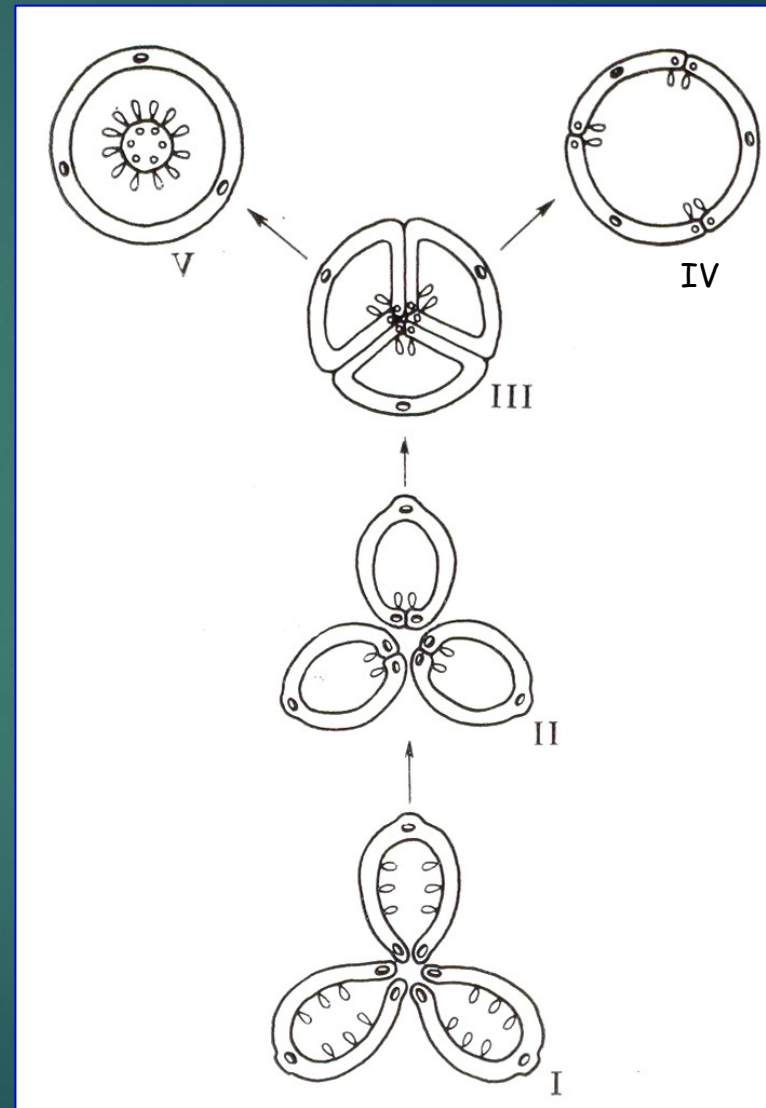
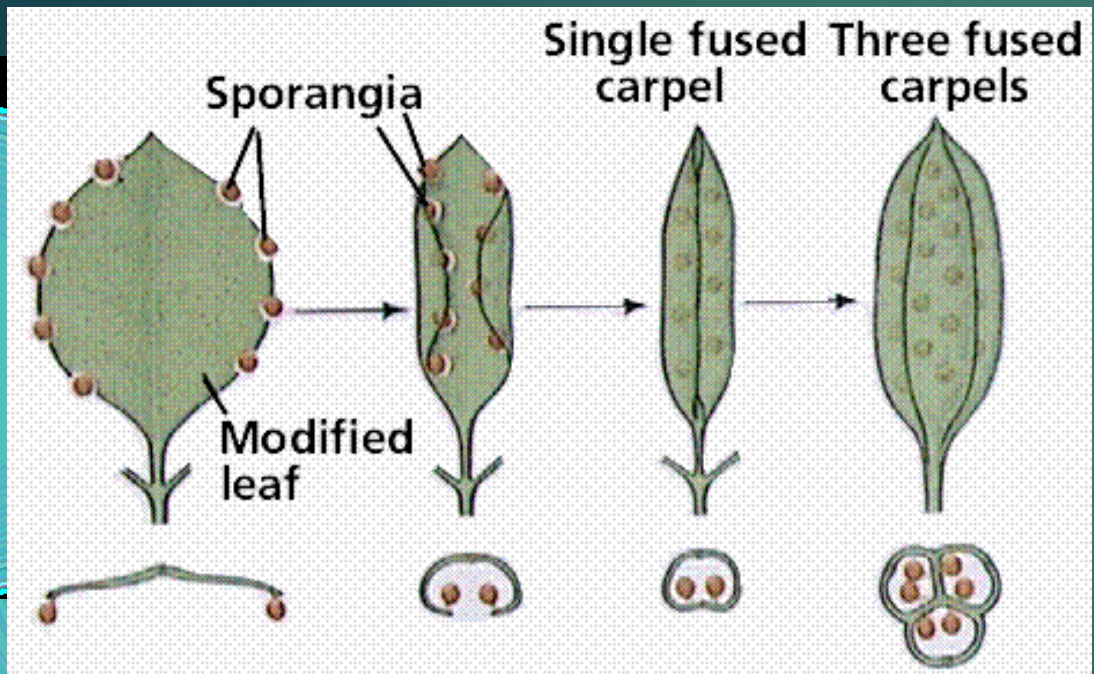
Gyneceum

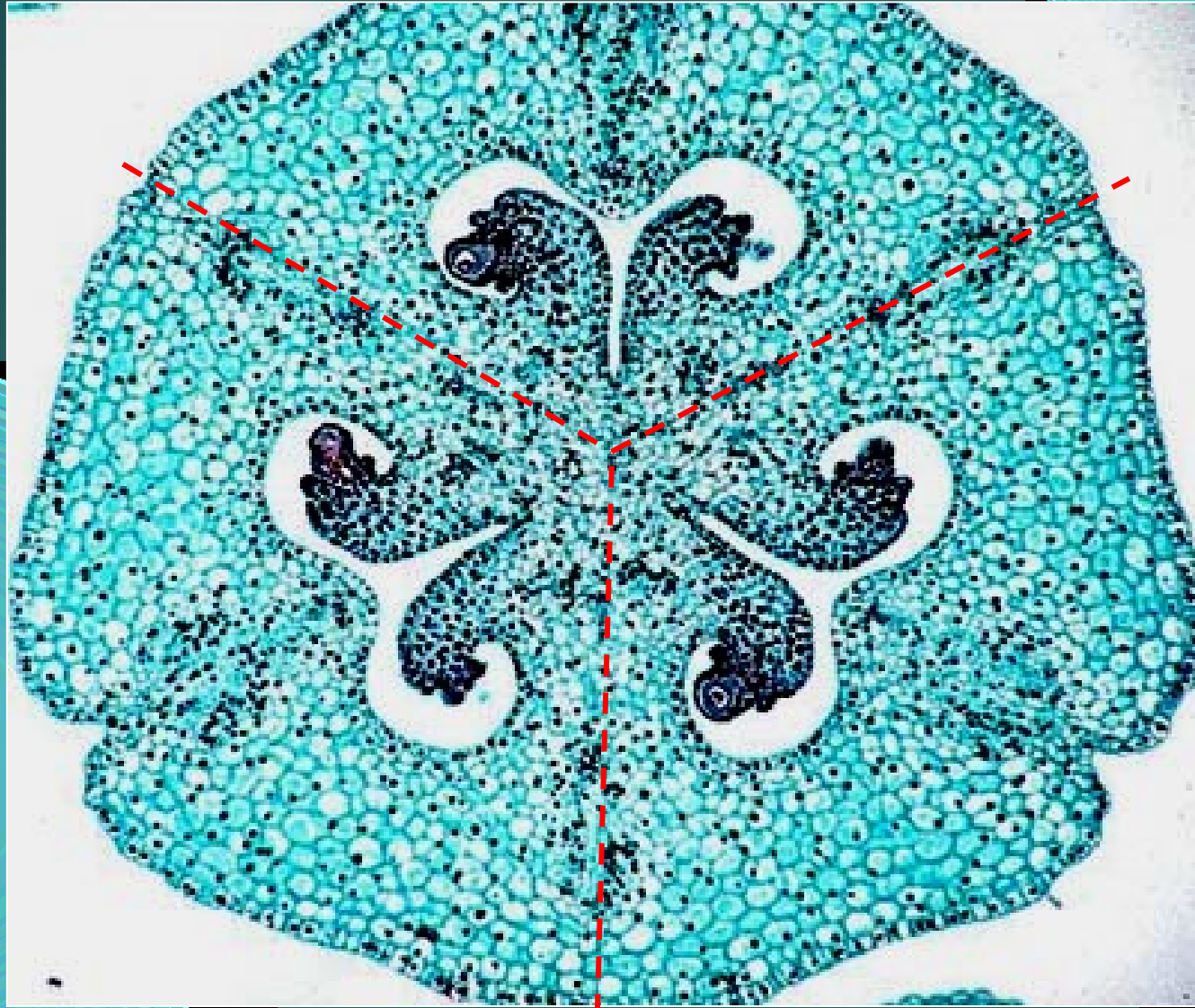


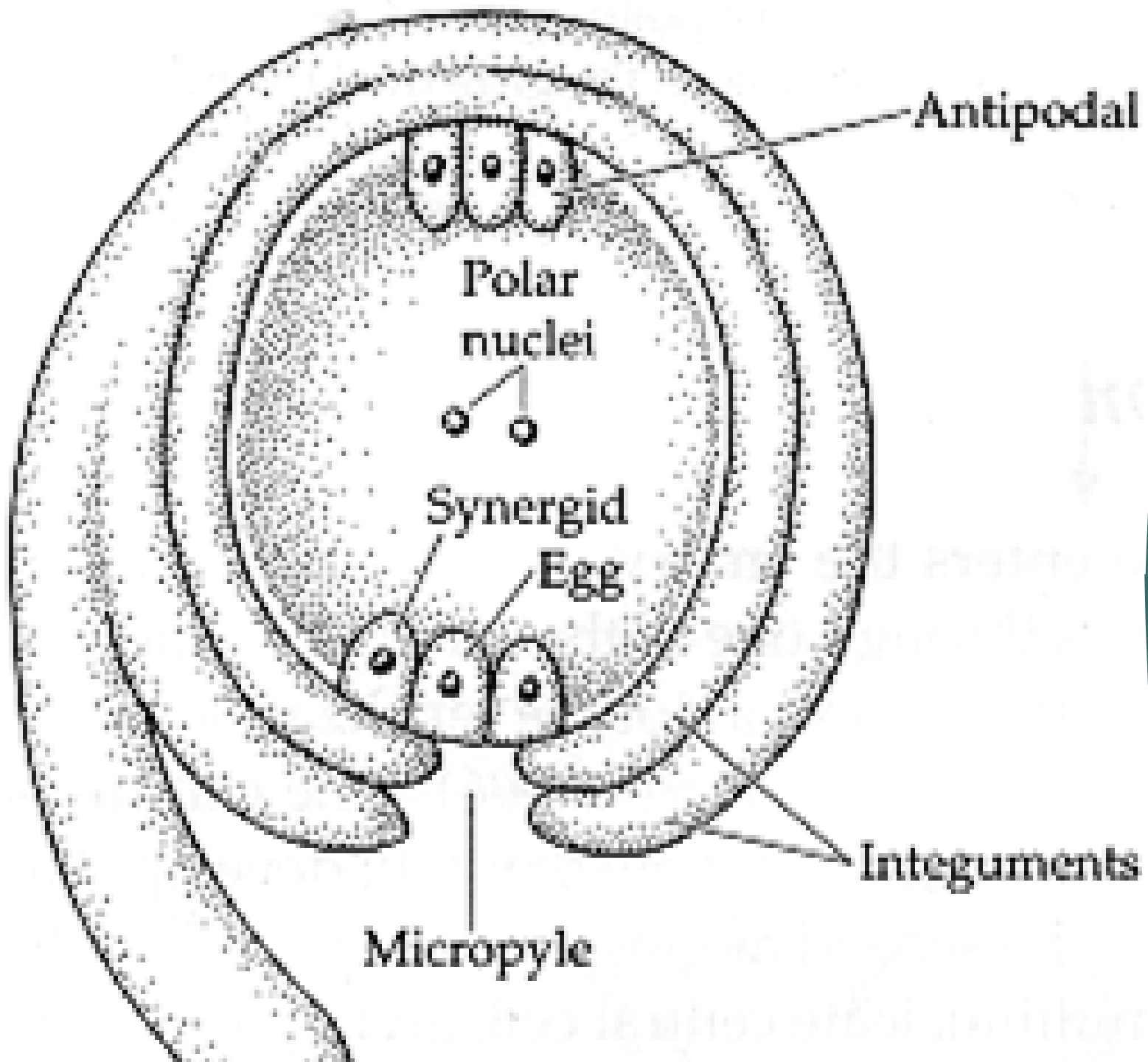
Vývoj pestíku



Typy semeníků a placentace







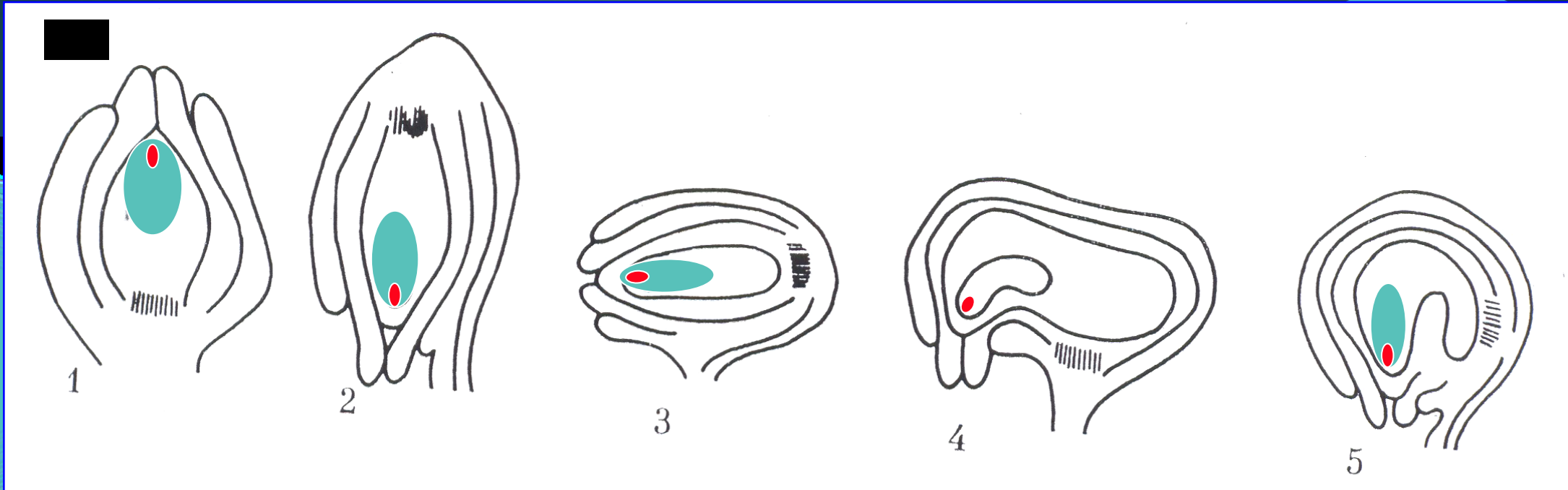
Anatropní vajíčko

Základní typy vajíček

přímé

obrácené

příčné



TYPES OF OVULES



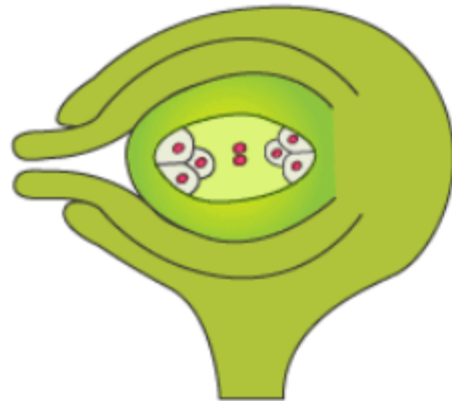
Atropous



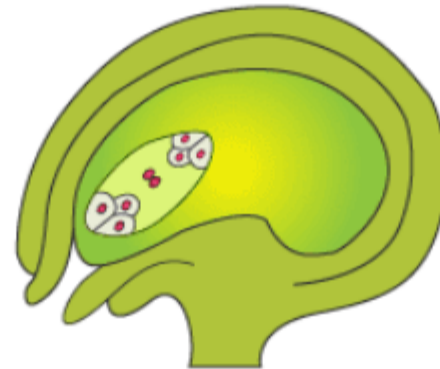
Anatropous



Amphitropous



Hemianatropous

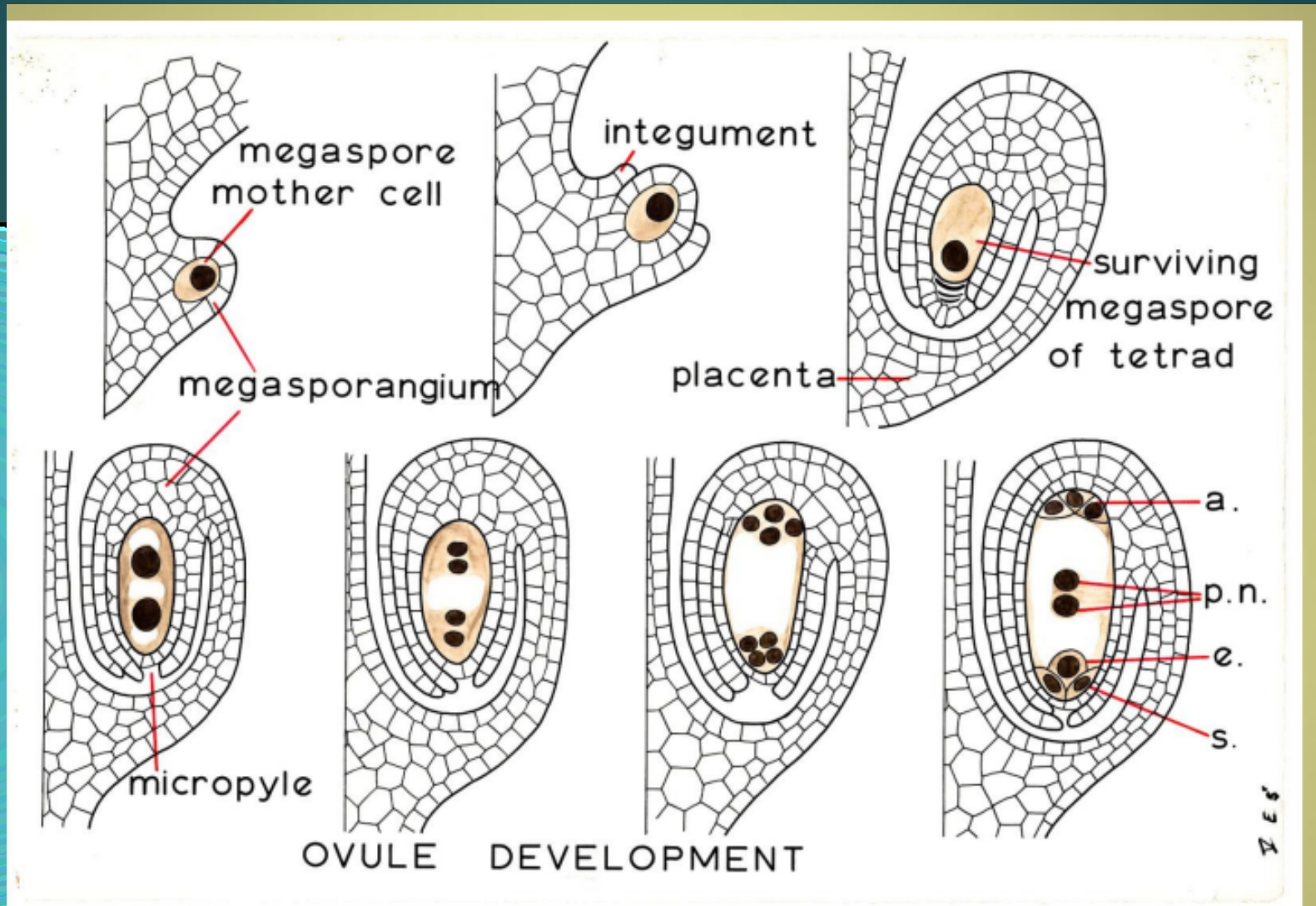


Campilotropous



Circinotropous

Vývoj vajíčka



Přehled typů zárodečných vaků

Erdelská 1981 (podle Maheshwari 1951)

monosporické

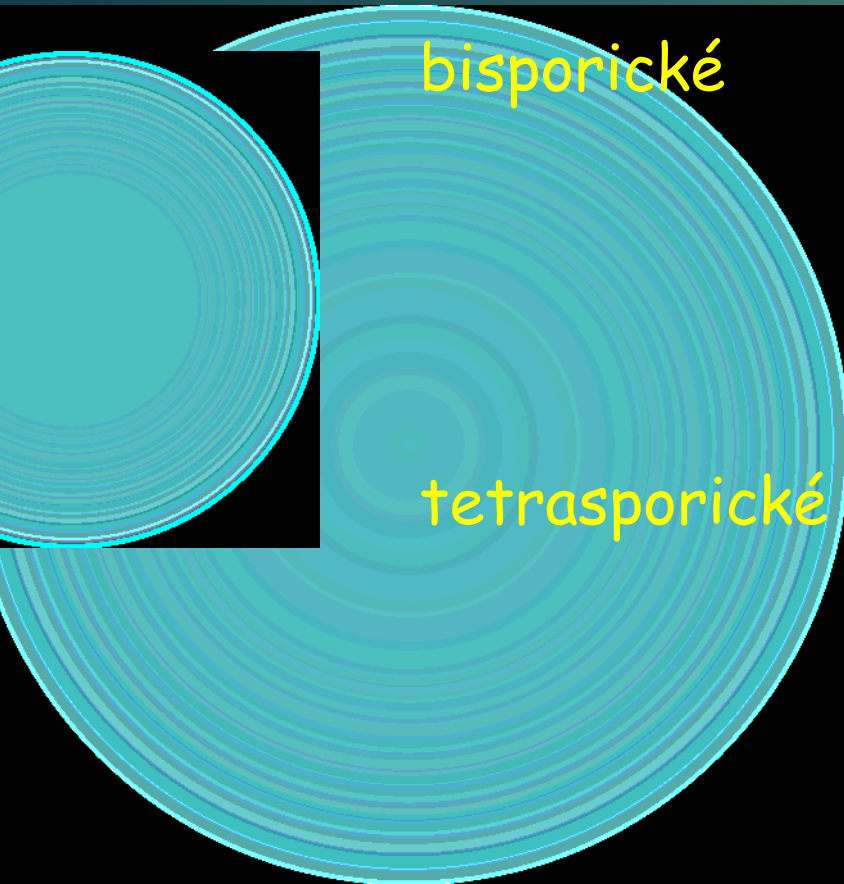
Polygonum
Oenothera

bisporické

Allium
Podostemon







































tetrasporické

Adoxa
Fritillaria
Plumbagella
Drusa
Peperomia
Penea
Plumbago

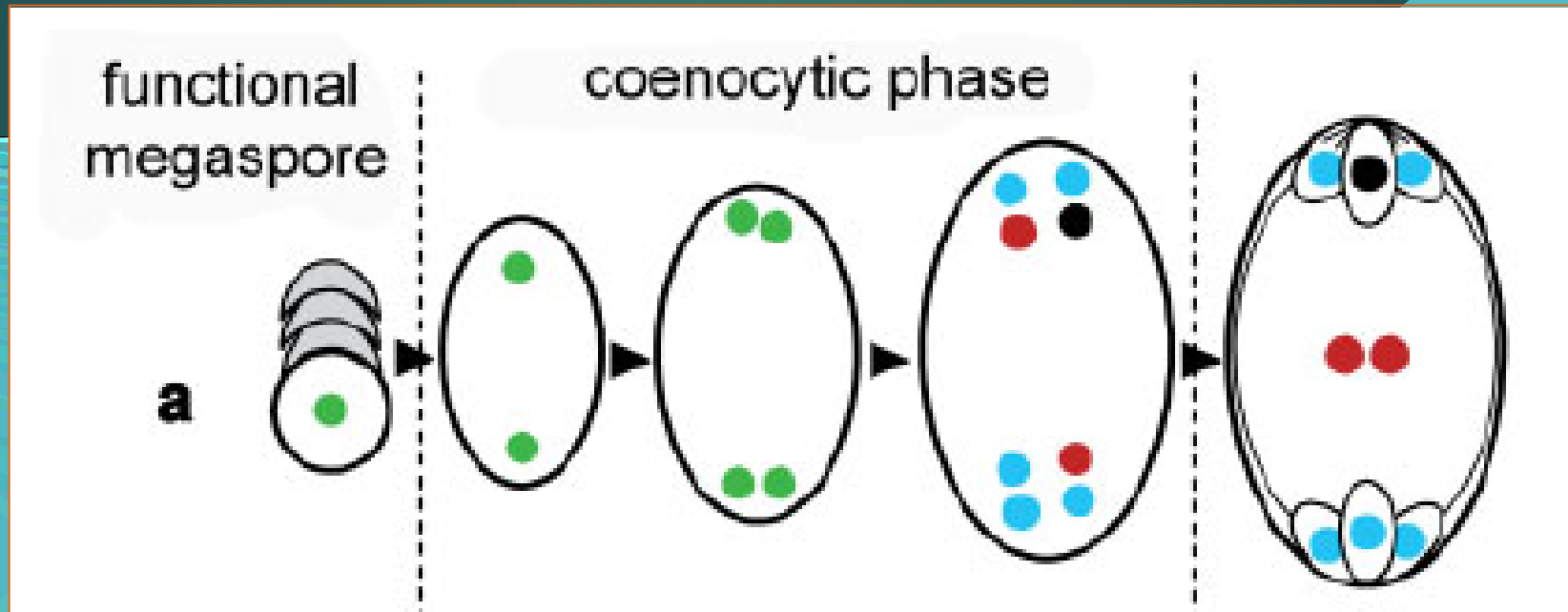
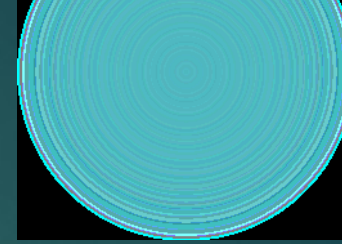


Megasporogenesis

Megagametogenesis

MMC	Meiosis I	Meiosis II	Mitosis I	Mitosis II	Mitosis III	Mature Embryo sac			
							Polygonum 8-nucleate 7-celled	Monosporic	
					—		Oenothera 4-nucleate 4-celled		
					—		Nuphar/Schisandra 4-nucleate 4-celled		
					—	—		Helosis 4-nucleate 4-celled	Bisporic
				—	—		Podostemon		
				—	—		Polypleurum		
							Allium 8-nucleate 7-celled		
					—			Adoxa 8-nucleate 7-celled	Tetrasporic
				—	—		Plumbagella		

Zárodečný vak typu *Polygonum*



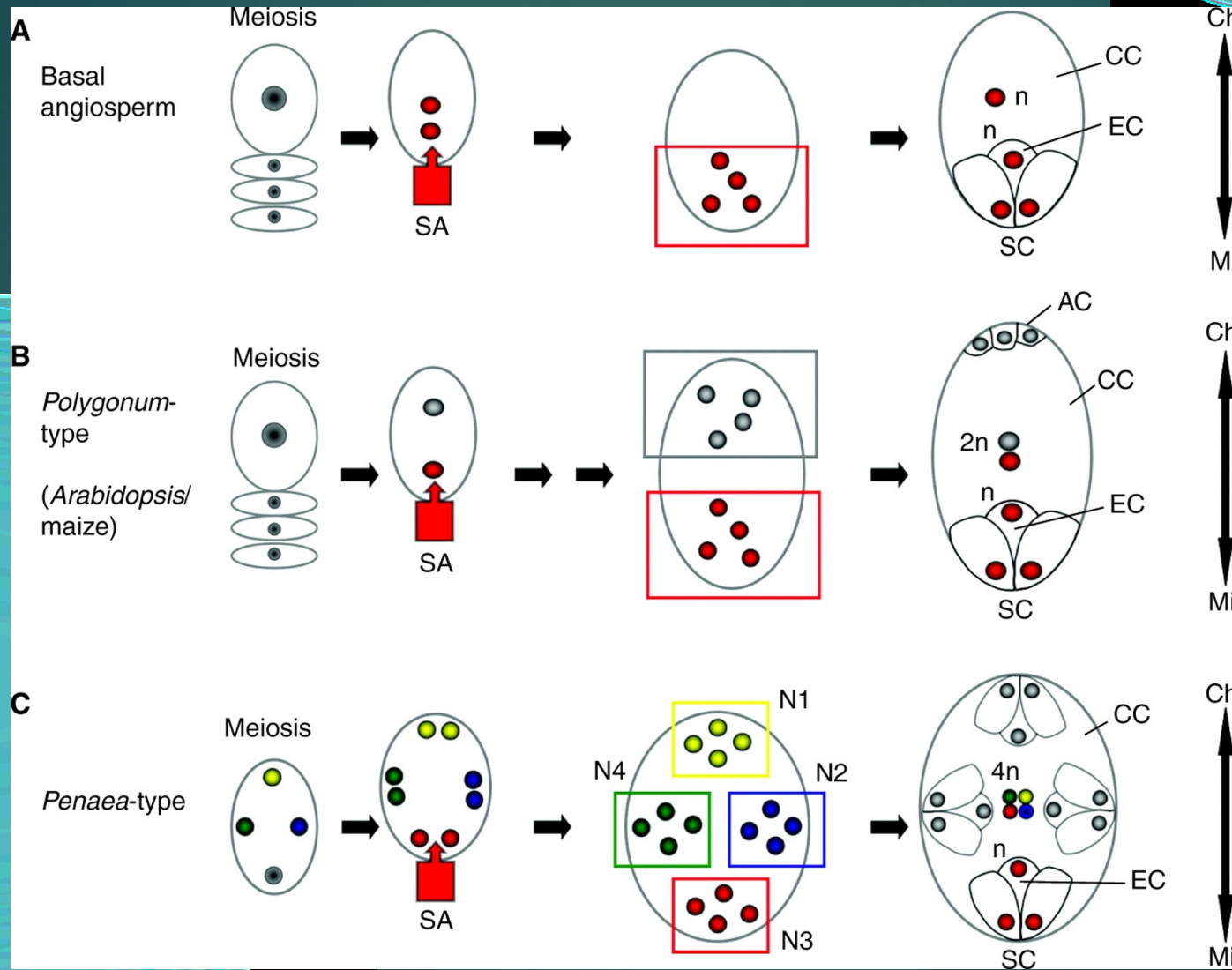
fungující megaspóra

mladý zárodečný vak

zralý zárodečný vak



Modulární hypotéza vývoje zárodečného vaku kombinovaná s modelem gradientu auxinu



monosporický
monopolární z.v.

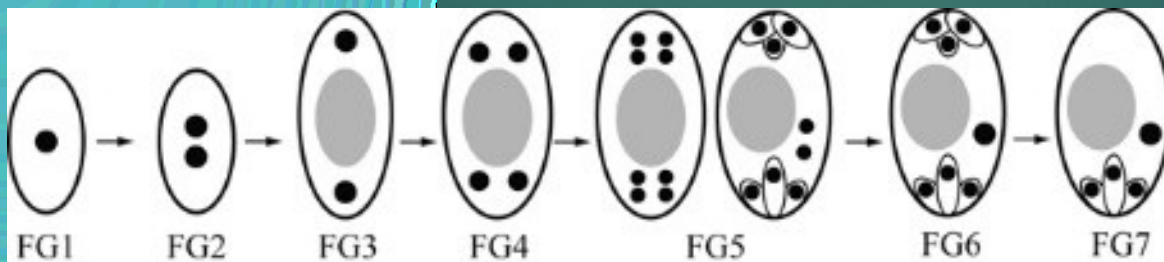
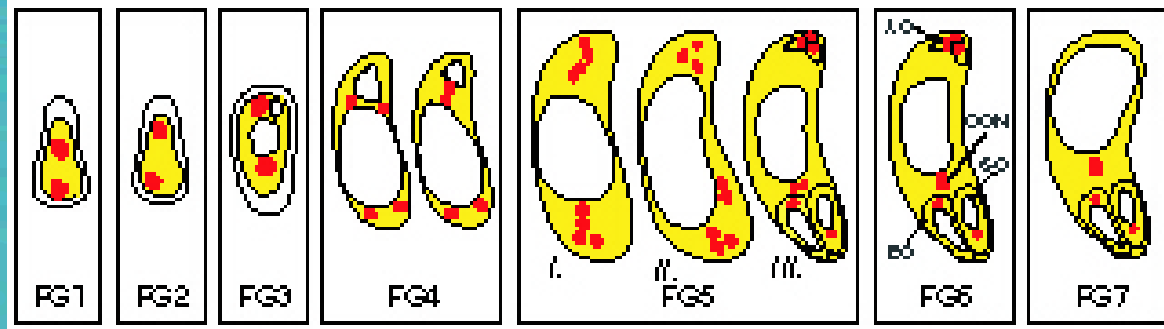
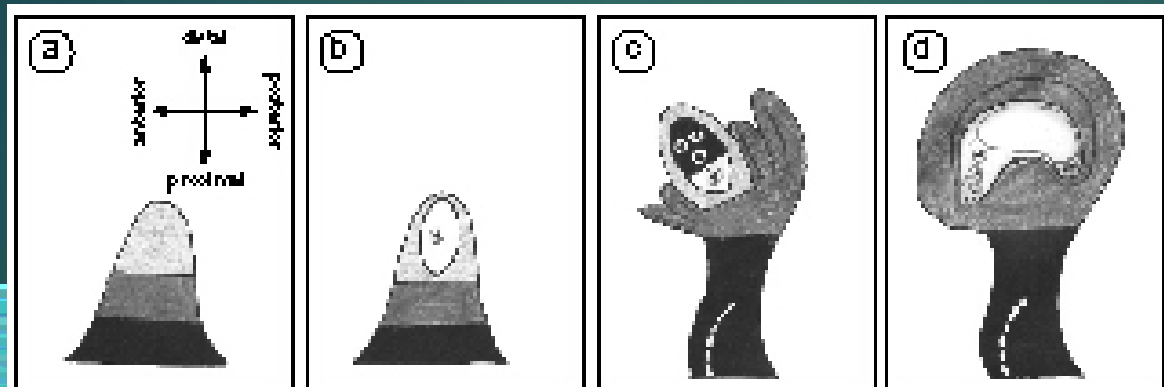
monosporický
bipolární z.v.

tetrasporický
tetrapolární z.v.

SA - zdroj auxinu

Sundaresan et Alandete-Saez 2010

Vývoj vajíčka a zárodečného vaku u *Arabidopsis*



Grossnilaus a
Schneitz
1998

Hejátko *et al.*
2003

vývojová stádia

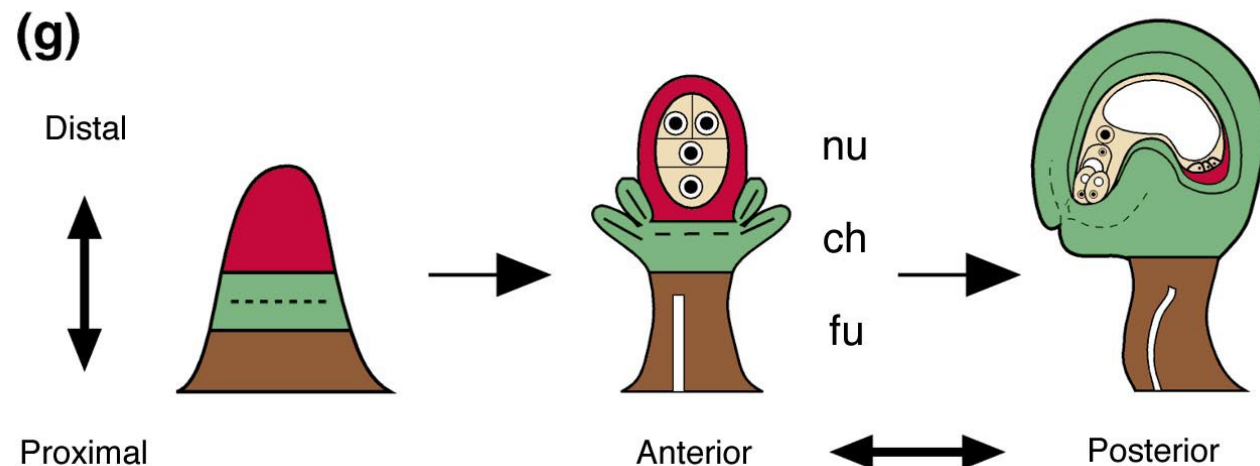
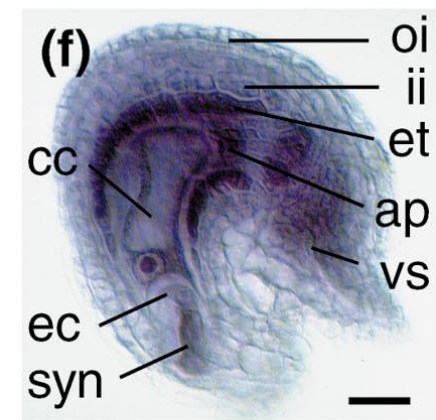
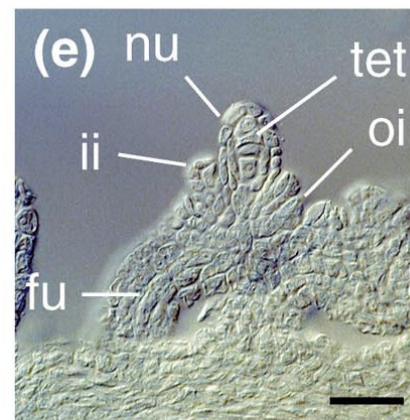
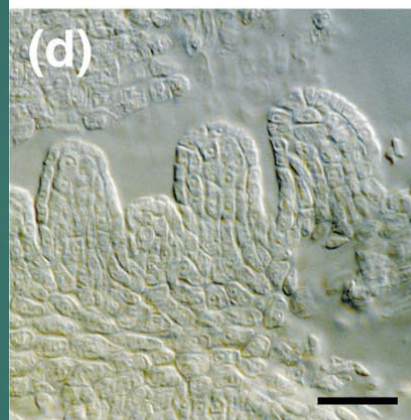
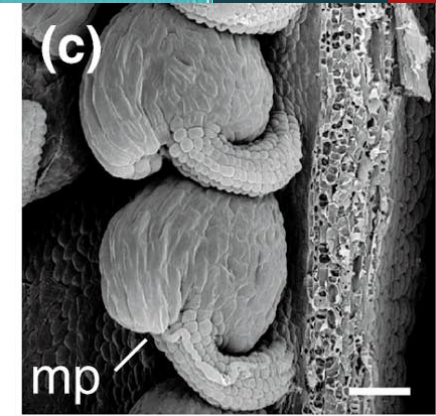
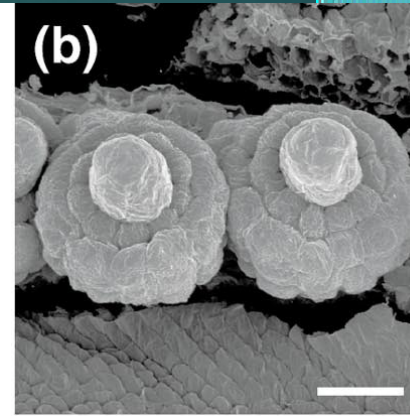
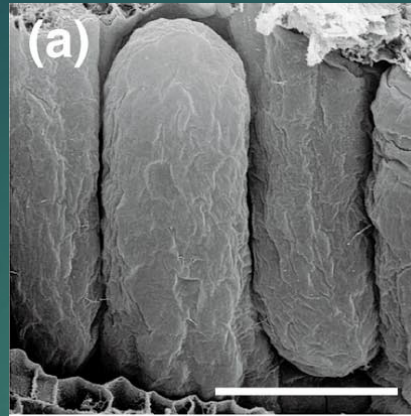
Vývoj vajíčka *Arabidopsis*

a, d = primordia vajíček
před diferenciací
megasporocytu

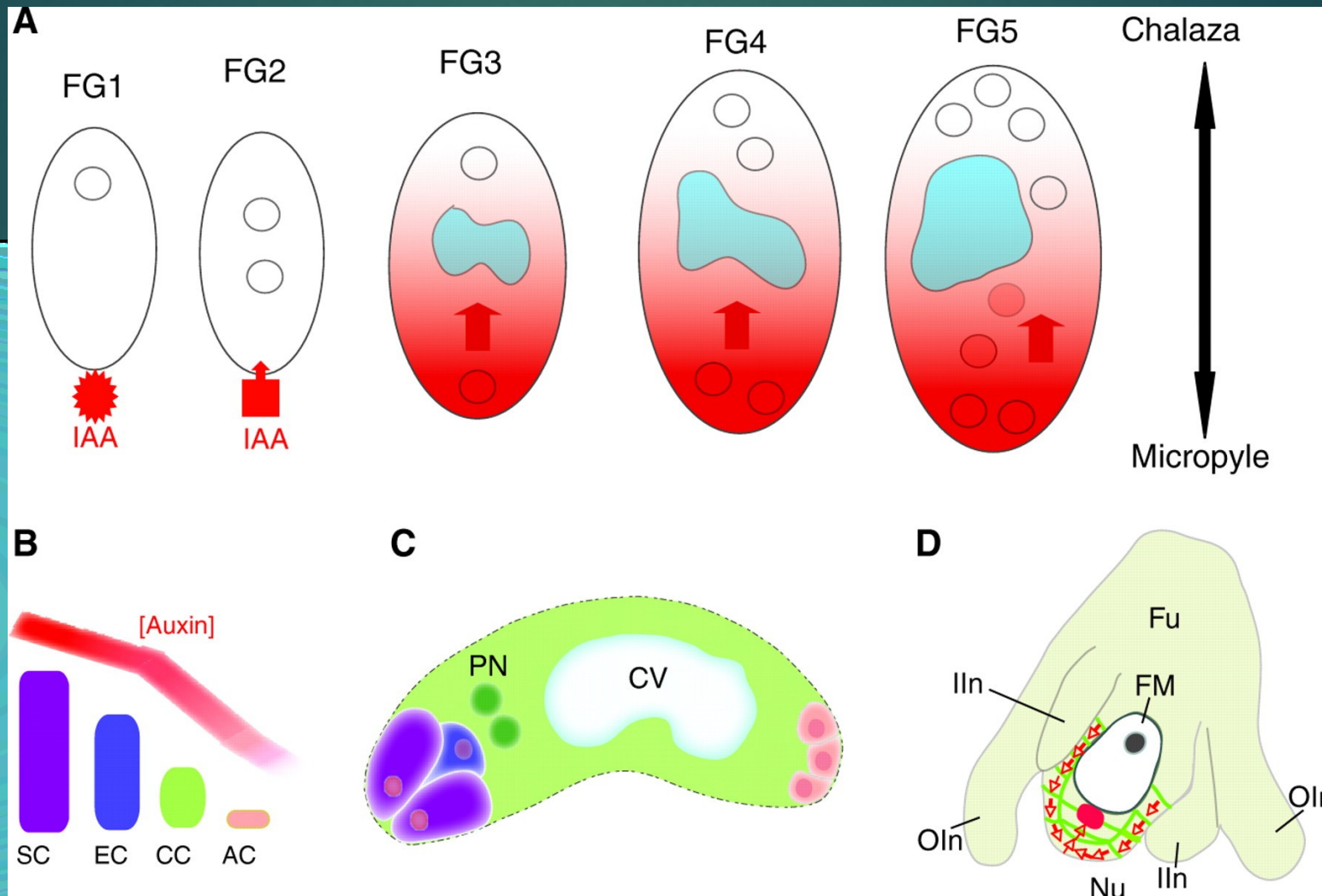
b, e = stadium tetrády
a základů integumentů

c - vajíčko s pylovou
láčkou na funikulu

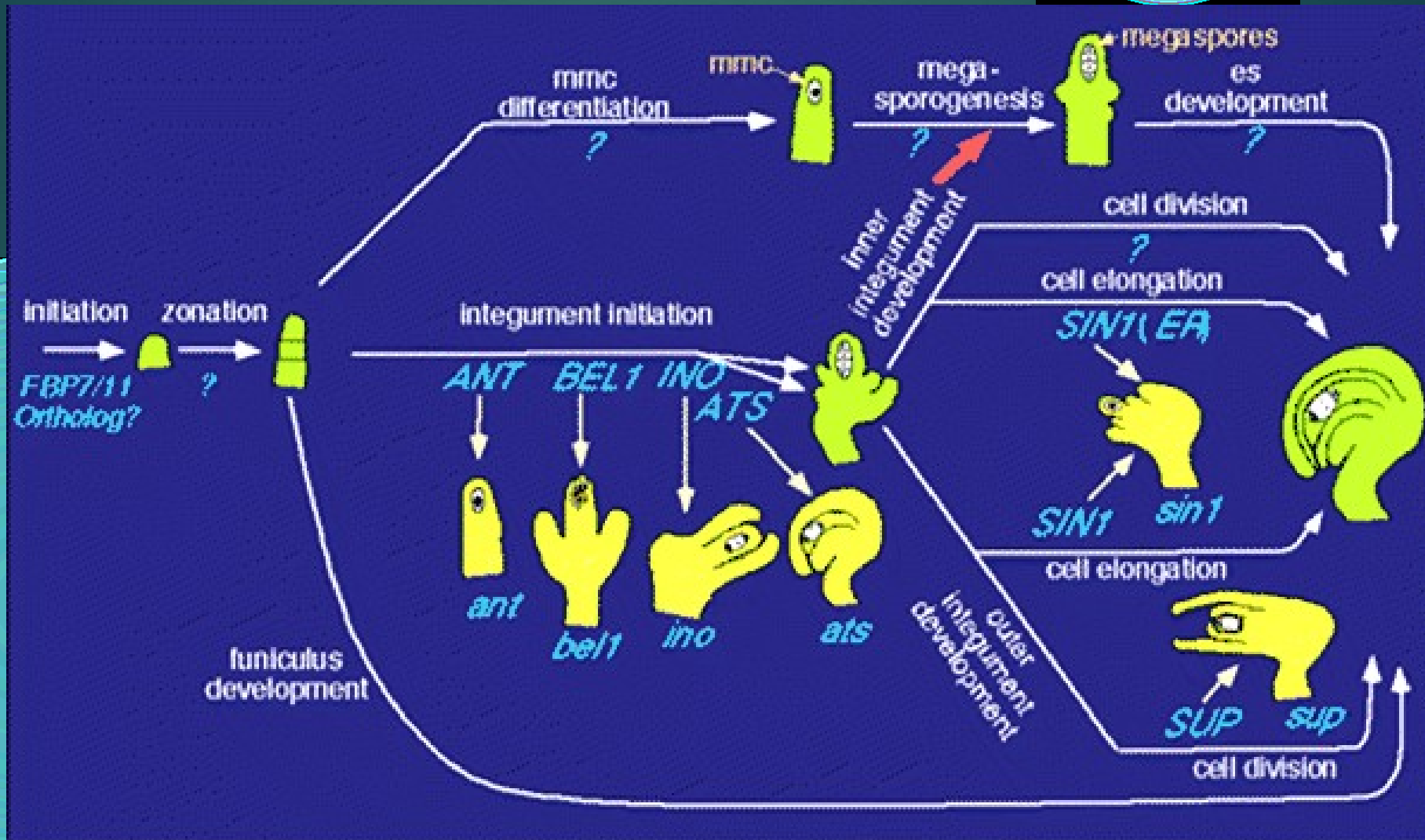
Schneitz *et al.*
TIPS 1998



Vývoj vajíčka a zárodečného vaku u *Arabidopsis* a gradient auxinu

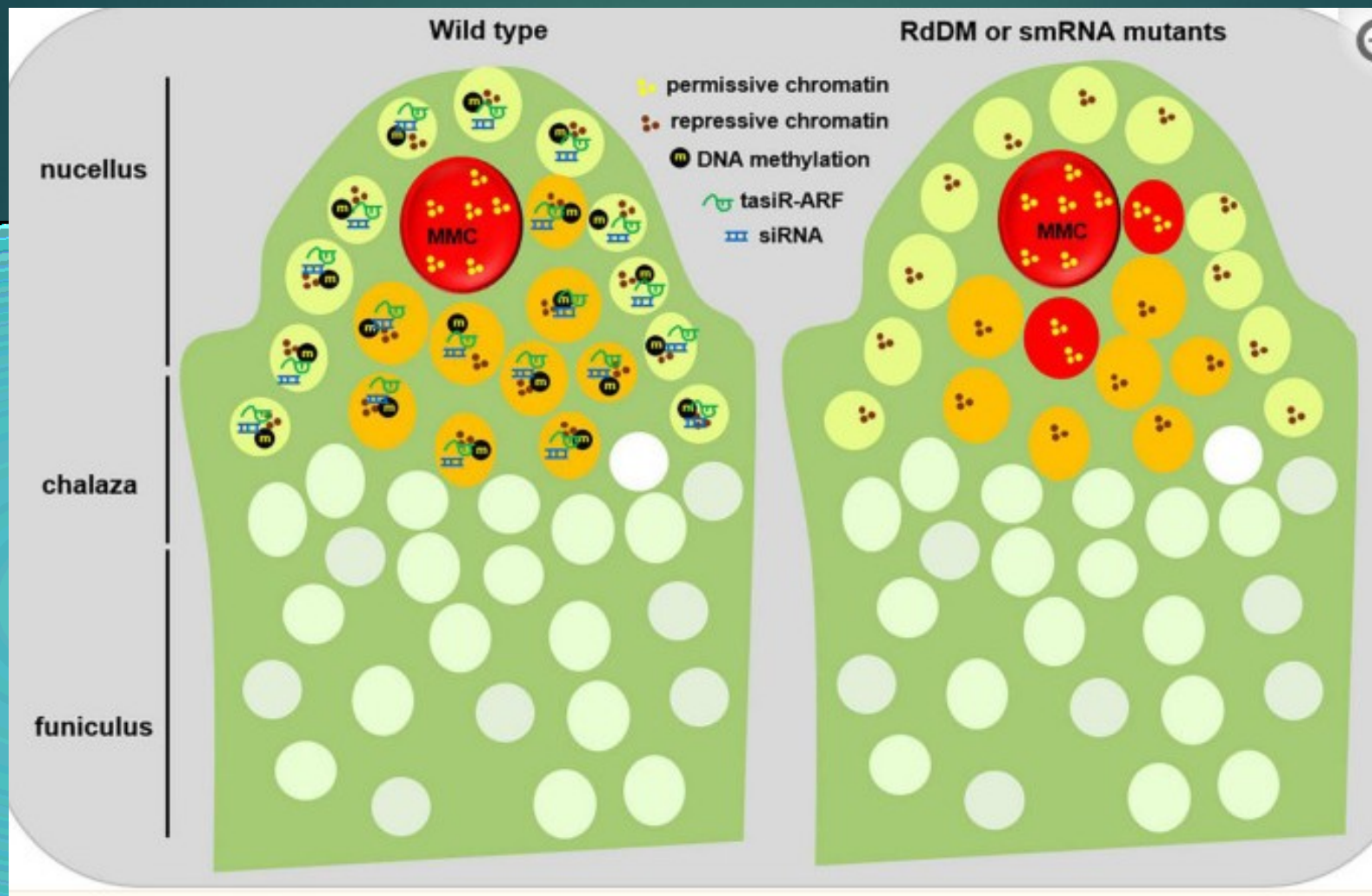


Regulace vývoje vajíčka *Arabidopsis*

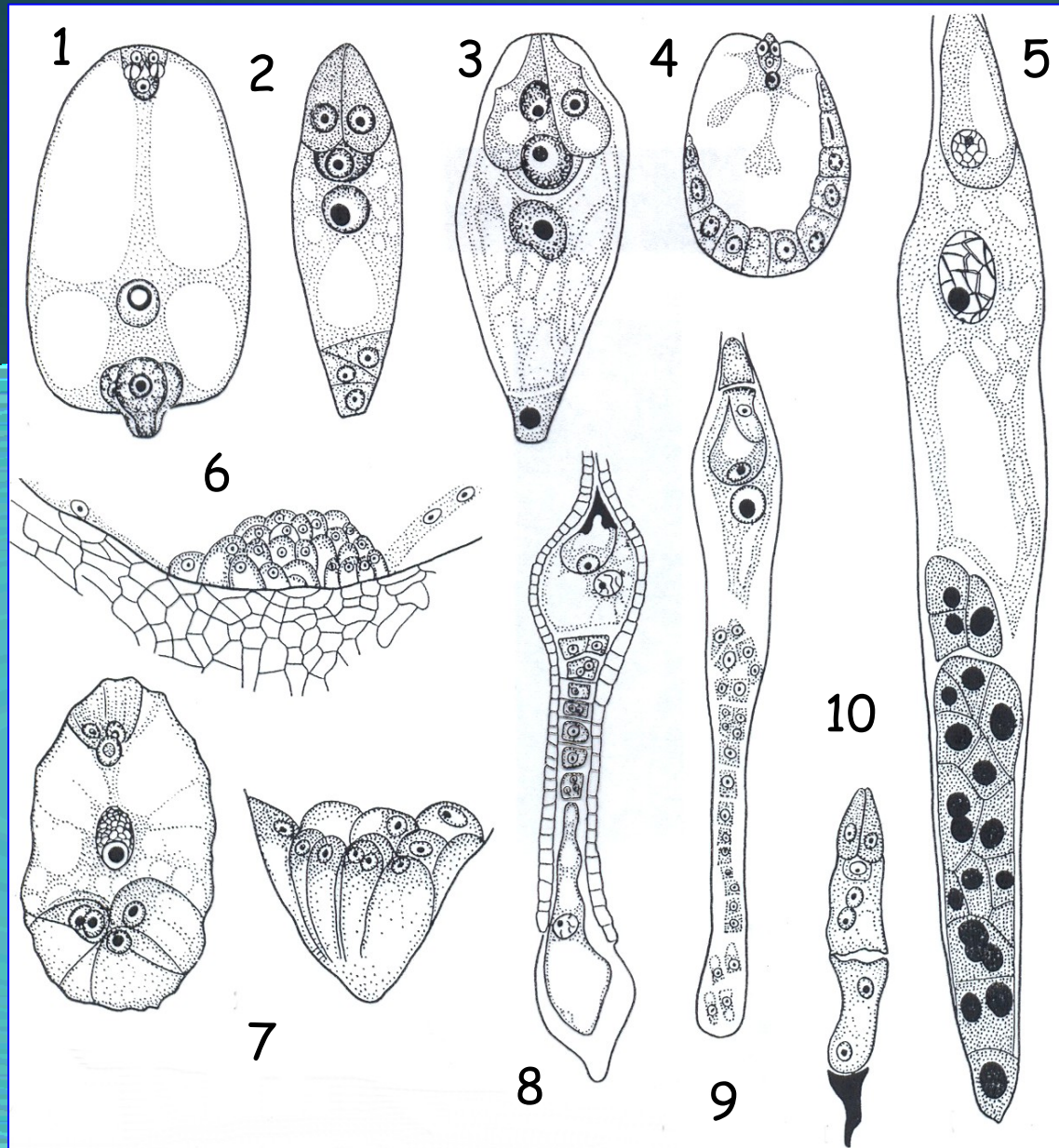


Info: Baker et al. 1997, Skinner et al. 2004, novější: Cucinotta et al. 2014

Vývoj a regulace MMC



Variabilita utváření antipod



- 1 *Delphinium*
- 2 *Sedum*
- 3 *Butomopsis*
- 4 *Gentiana*
- 5 *Ligularia*
- 6 *Spargania*
- 7 *Trautweteria*
- 8 *Chrysocoma*
- 9 *Anthemis*
- 10 *Bidens*

Shrnutí

<https://www.iaspr.org/old/iaspr-pix/lily/>

