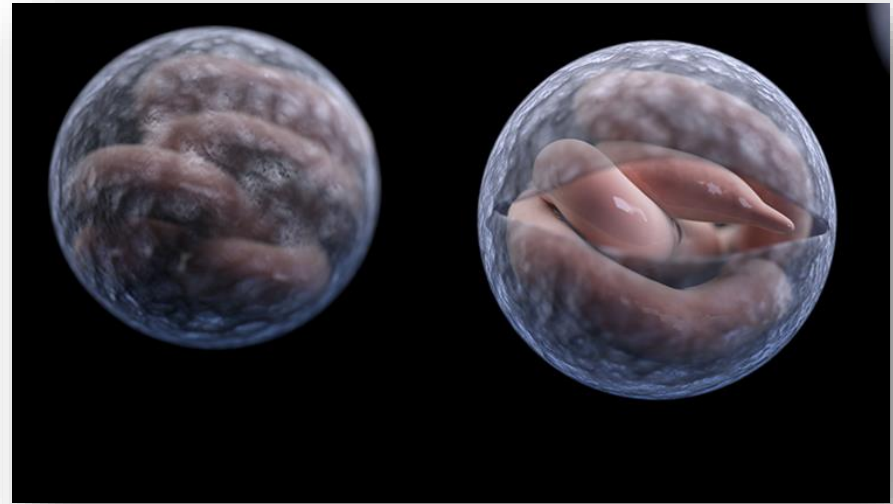
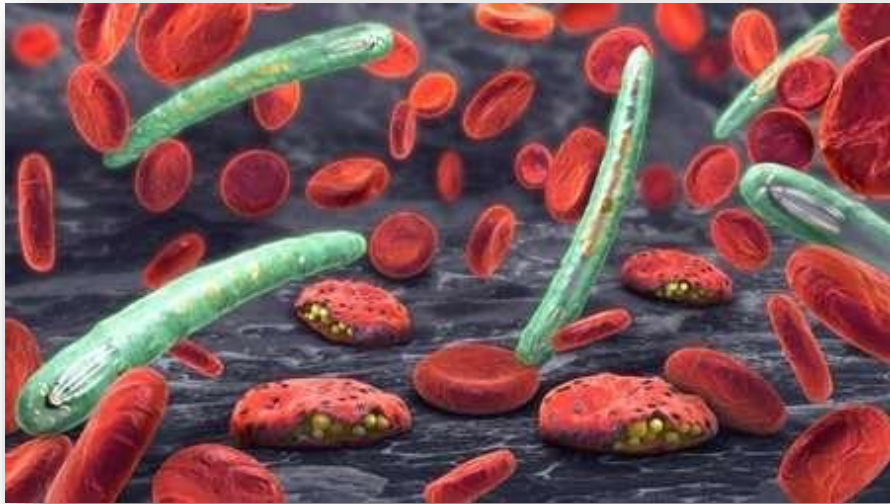


6. CVIČENÍ

APICOMPLEXA



Termíny cvičení:

- helminti 14.10., 21.10., 4.11.
- prvoci 11.11., 18.11., 25.11., 2.12
- členovci 9.12., 16.12., 6.1.

Podmínky k zápočtu:

- účast na **VŠECH** hodinách
- povolena max. 1 absence

v případě 2. absence:

- zpracování vybraného hesla pro Wikipedii (s hodnocením min 7 bodů) / zpracování „manuálu“ pro determinaci vybraného parazita
- nutno odevzdat do **17. 12. 2021**

Jakékoliv dotazy ohledně absence: radrova@natur.cuni.cz

Parazitičtí prvoci

KMEN / Řád

EXCAVATA

Trypanosomatida
Diplomonadida
Trichomonadida

AMOEBOZOA

CHROMALVEOLATA

APICOMPLEXA
CILIOPHORA

OPISTHOKONTA

MICROSPORA
MYXOZOA

Parazitiční prvoci

KMEN / Řád

EXCAVATA

Trypanosomatida
Diplomonadida
Trichomonadida

AMOEBOZOA

CHROMALVEOLATA

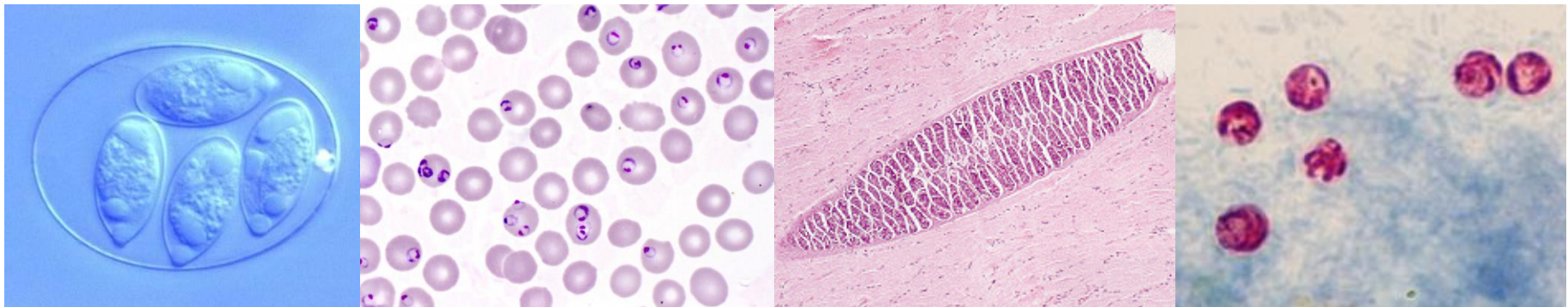
APICOMPLEXA
CILIOPHORA

OPISTHOKONTA

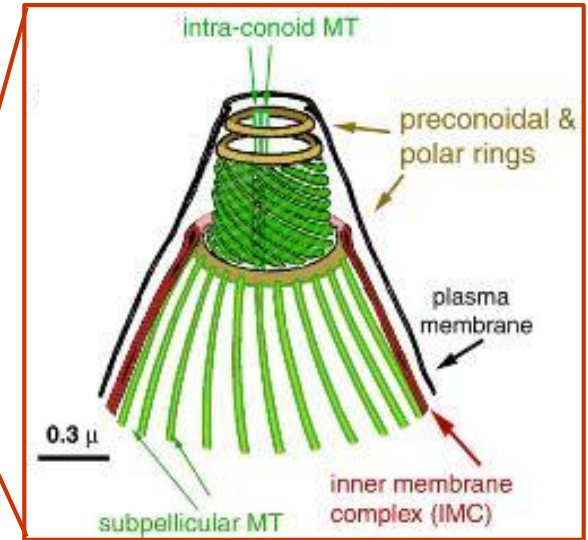
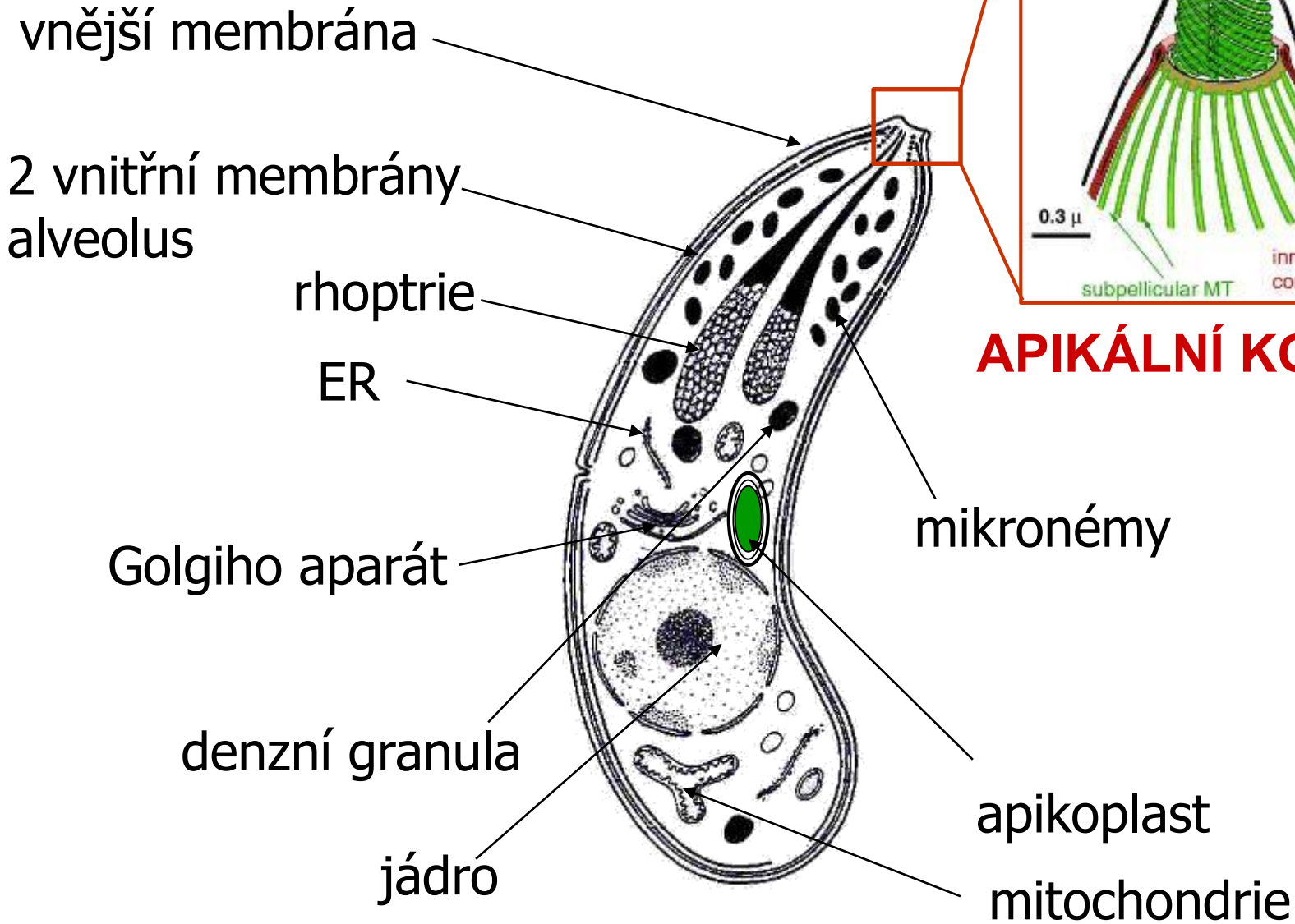
MICROSPORA
MYXOZOA

APICOMPLEXA

- monofyletický kmen
- **apikální komplex:**
konoid, polární prstenec, rhoptrie, mikronémy
- pelikula (povrch ze 3 membrán – „Alveolata“)
- **apikoplast** („plastid“, 4 membrány)
- 3 rozmnožovací fáze: **merogonie, gamogonie, sporogonie**
- pouze parazitičtí



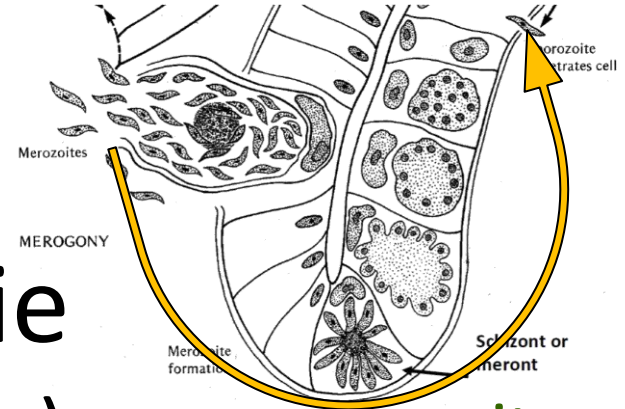
ZOIT



APIKÁLNÍ KOMPLEX

VÝVOJOVÝ CYKLUS

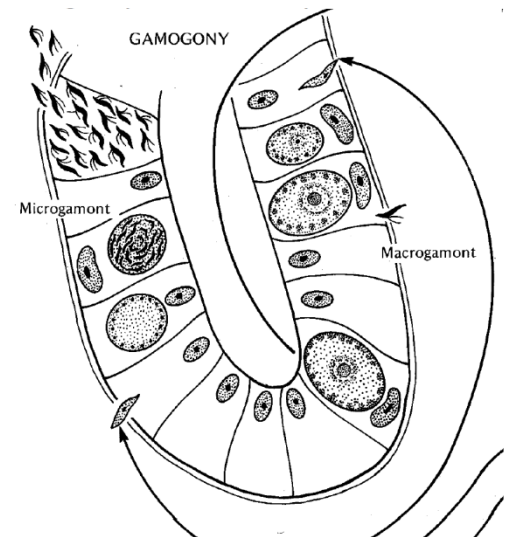
asexuální namnožení
v hostiteli **merogonie**
(schizogonie)



merozoit
(=meront, schizont)

gamogonie

tvorba pohlavních stádií



gamont

SEX

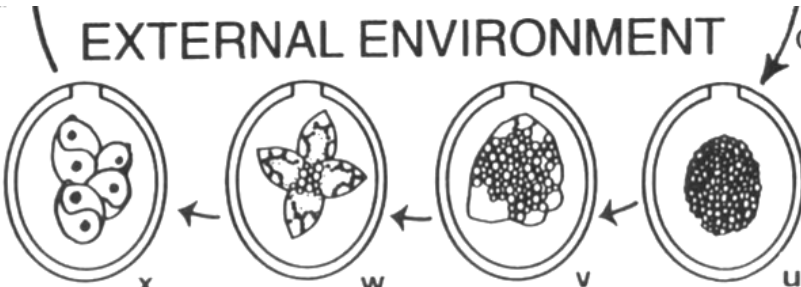
zygota

sporogonie

tvorba cyst tj.
odolných stádií

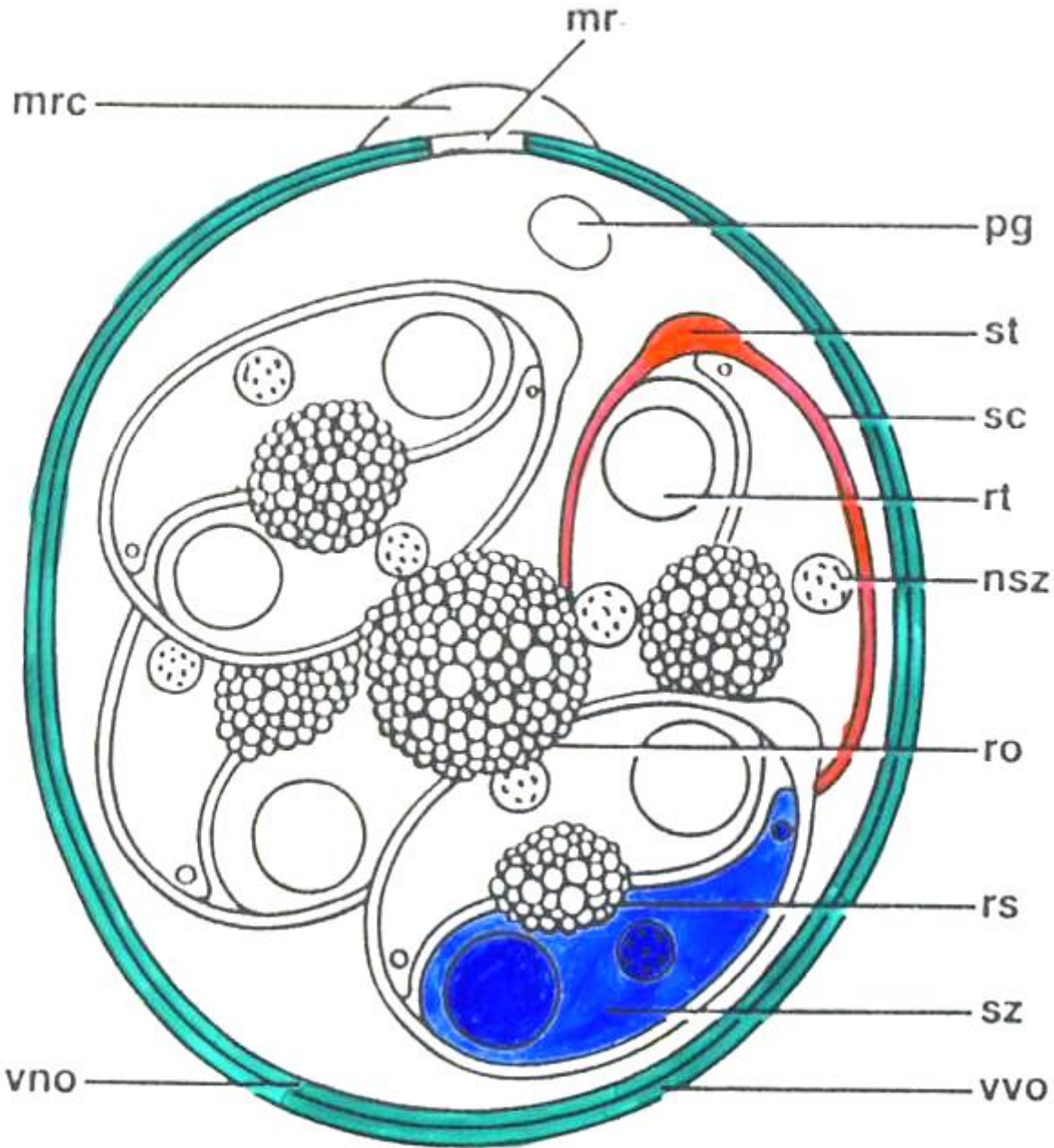
EXTERNAL ENVIRONMENT

O₂



SPOROLOGY

OOCYSTA

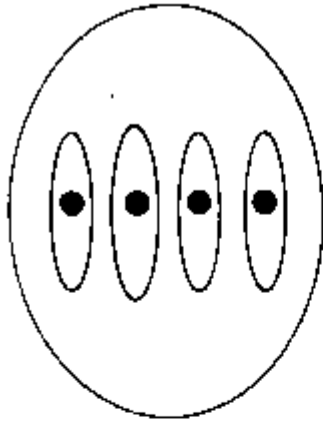


oocysta

sporocysta

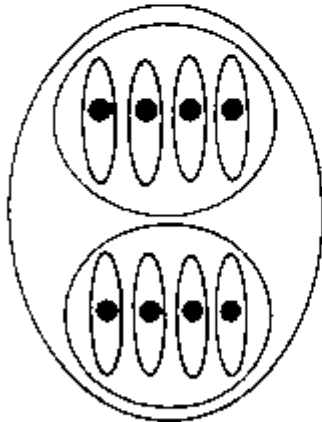
sporozoit

Sporocysts: 0
Sporozoites: 4



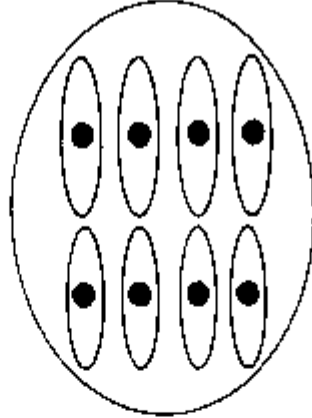
Genus: *Cryptosporidium*

Sporocysts: 2
Sporozoites: 8



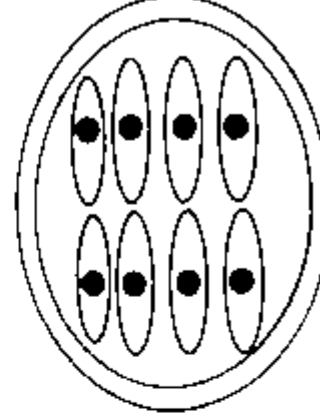
Genus: *Besnoitia*
Cystoisospora
Frenkelia
Hammondia
Isospora
Sarcocystis
Toxoplasma

0
8



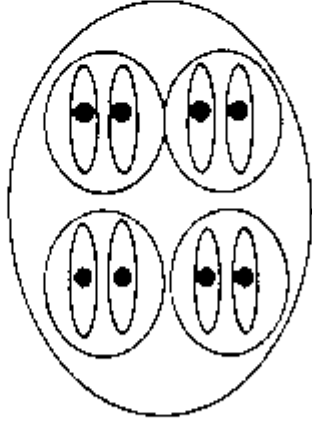
Tyzzeria

1
8



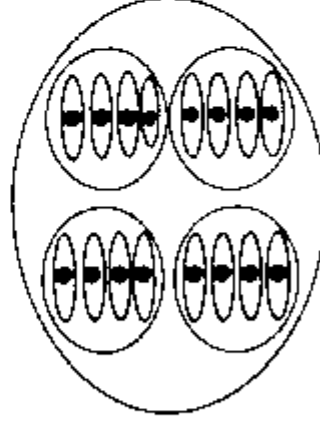
Caryospora

4
8



Calyptospora
Eimeria

4
16



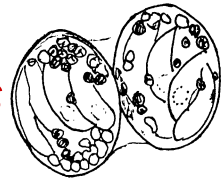
Wenyonella

OOCYSTA

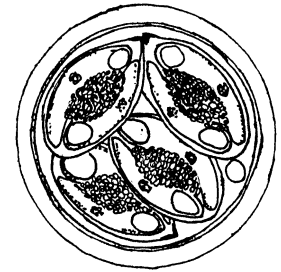
Caryospora



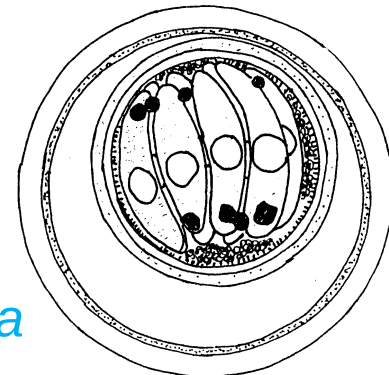
Isospora
(Toxoplasma)



Sarcocystis



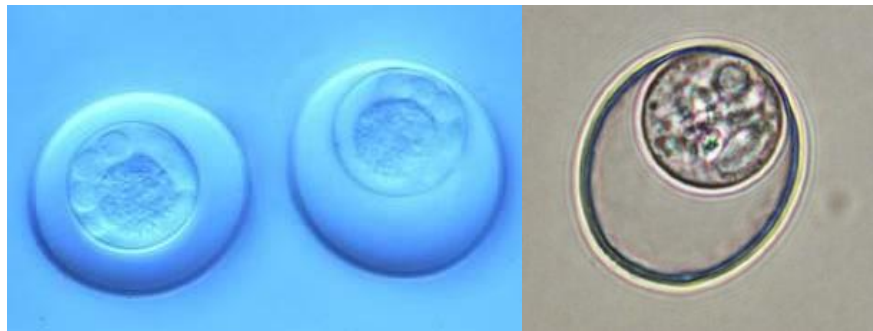
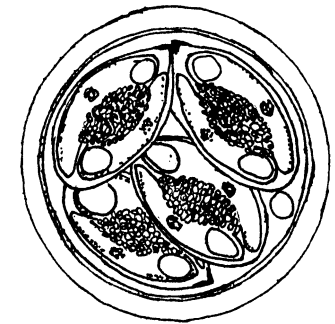
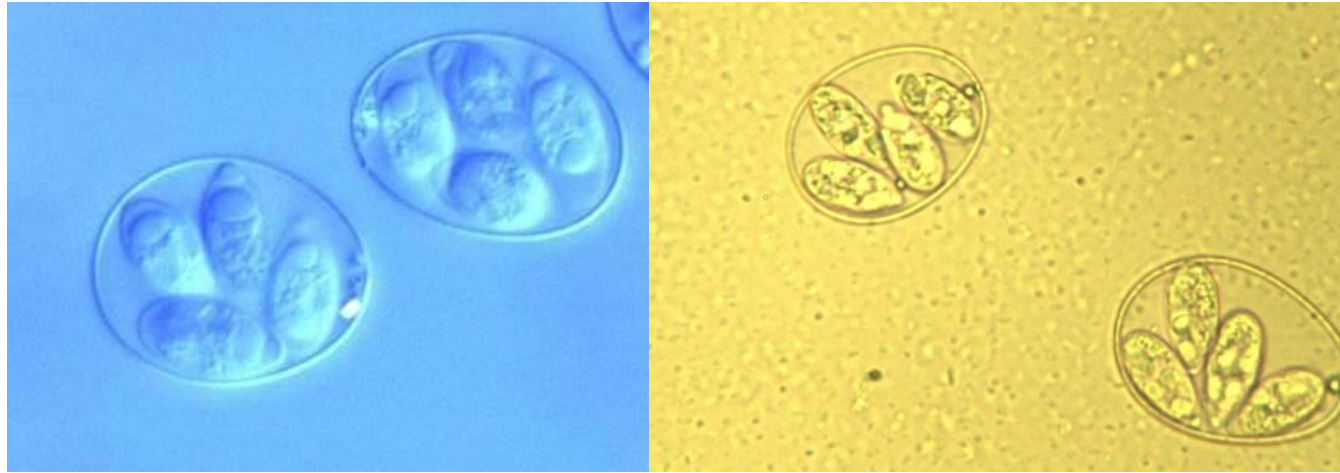
Eimeria



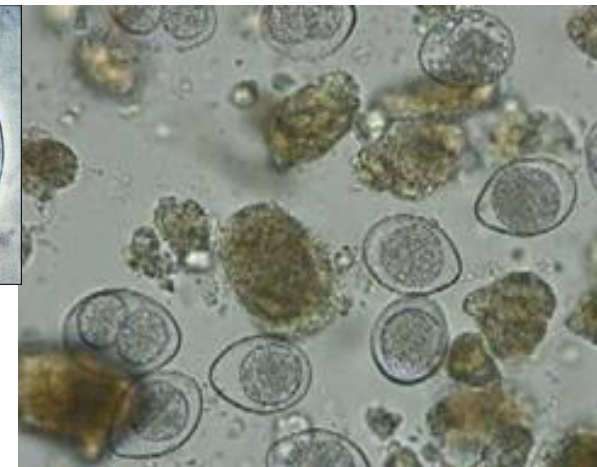
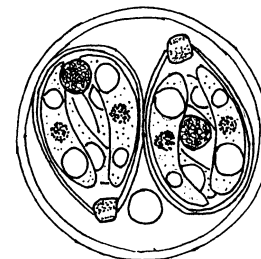
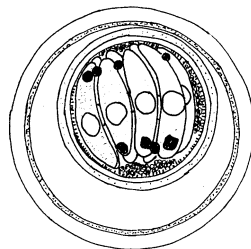
Eimeria acervulina

Eimeria/Caryospora/Isospora – nativní preparát

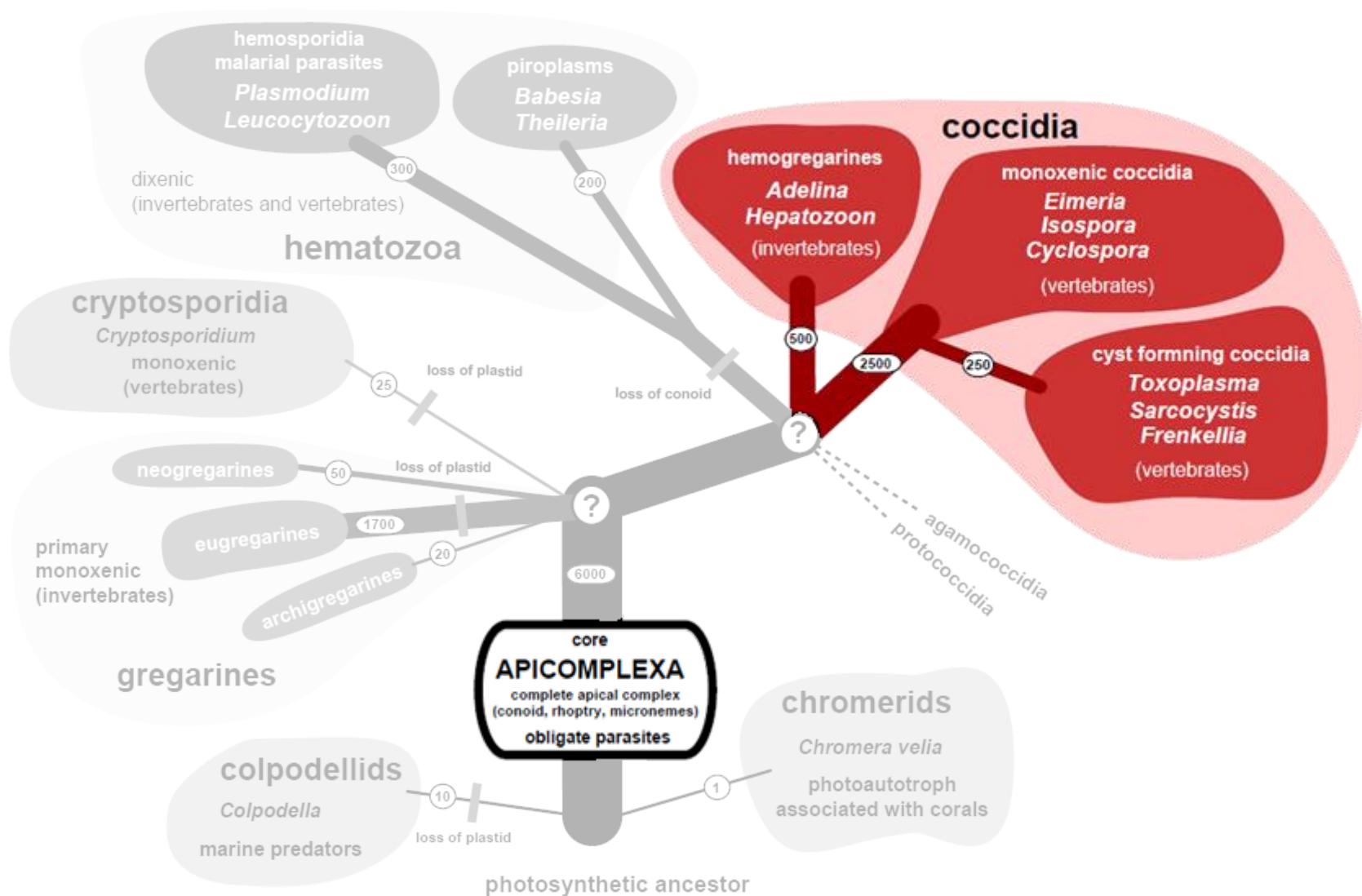
Eimeria maxima – větší než *E. acervulina*



Caryospora



Isospora



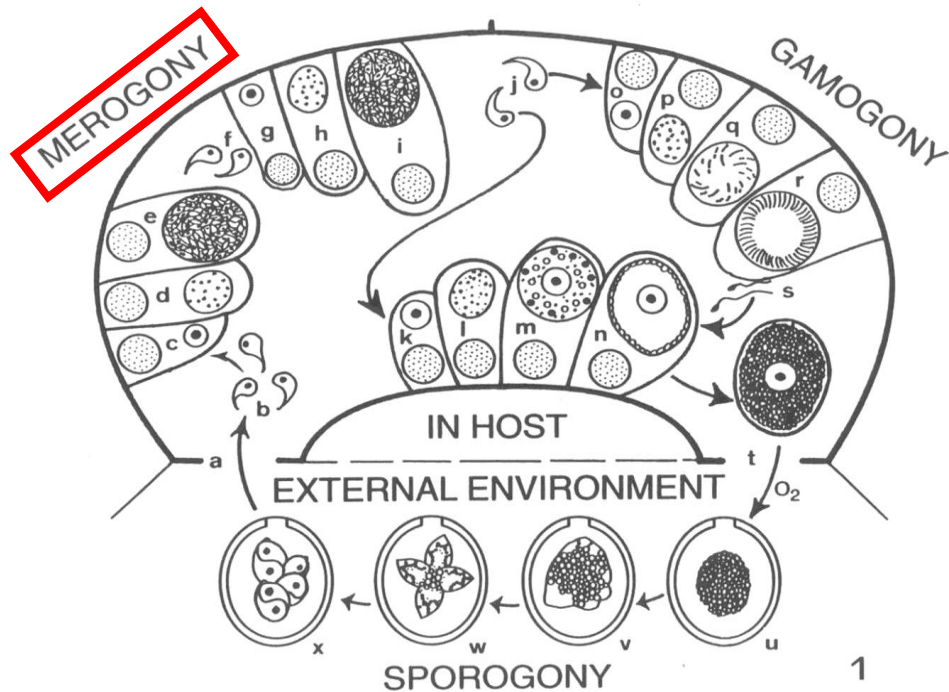
Eimeria tenella

Eimeria tenella (merogonie) – trvalý preparát (16×)

- kur domácí – krvavý zánět slepého střeva

- merogonie

asexuální množení
střevo

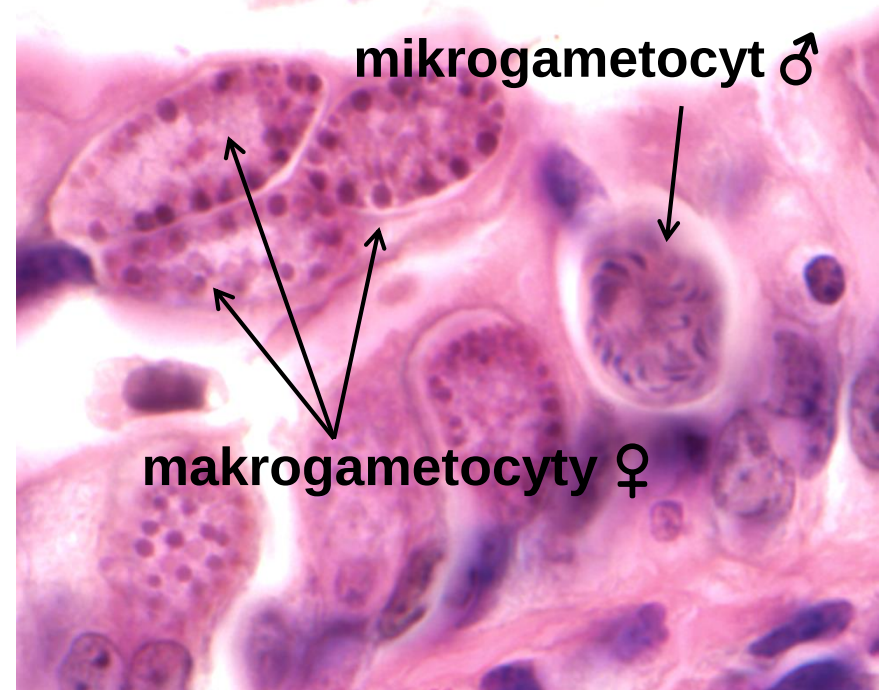
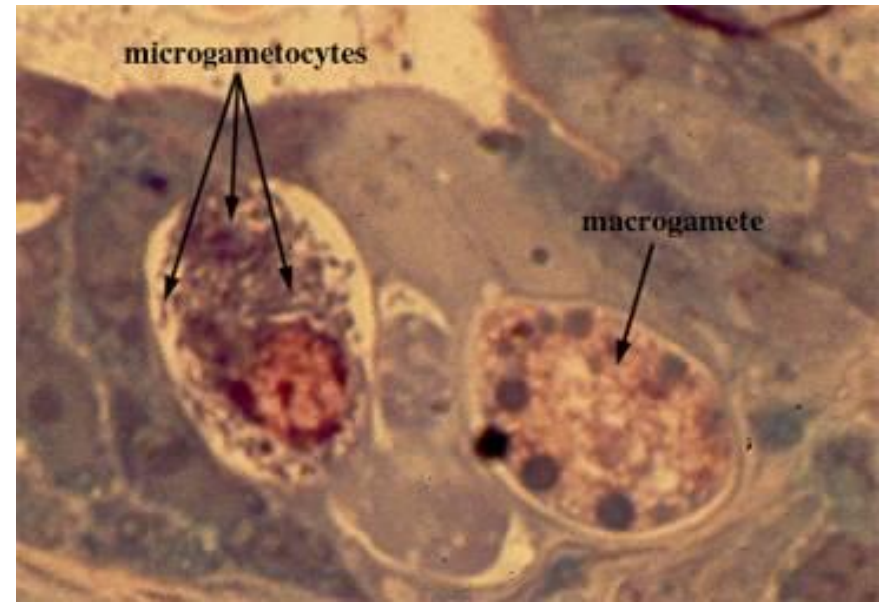
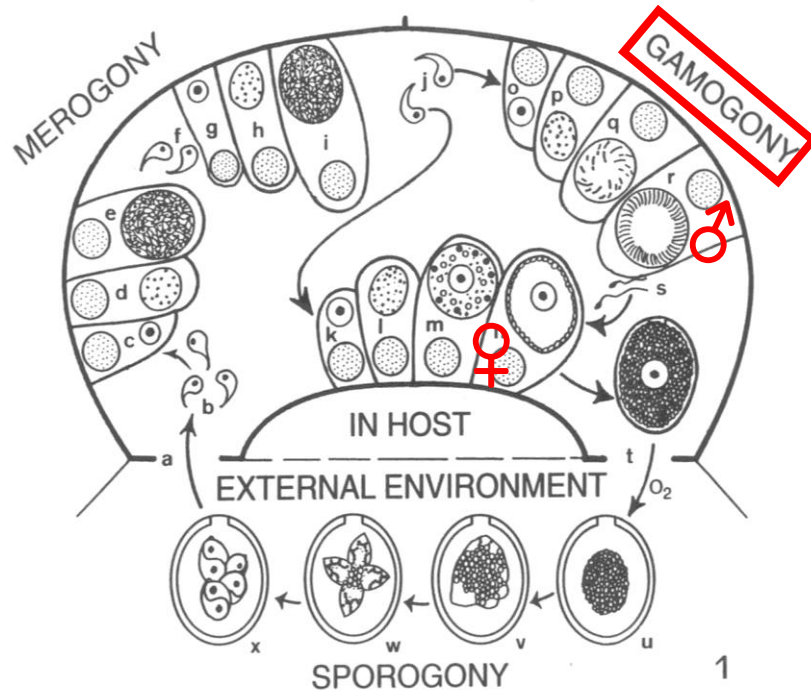


Eimeria tenella

Eimeria tenella (gamogonie) – trvalý preparát (16×)

- gamogonie

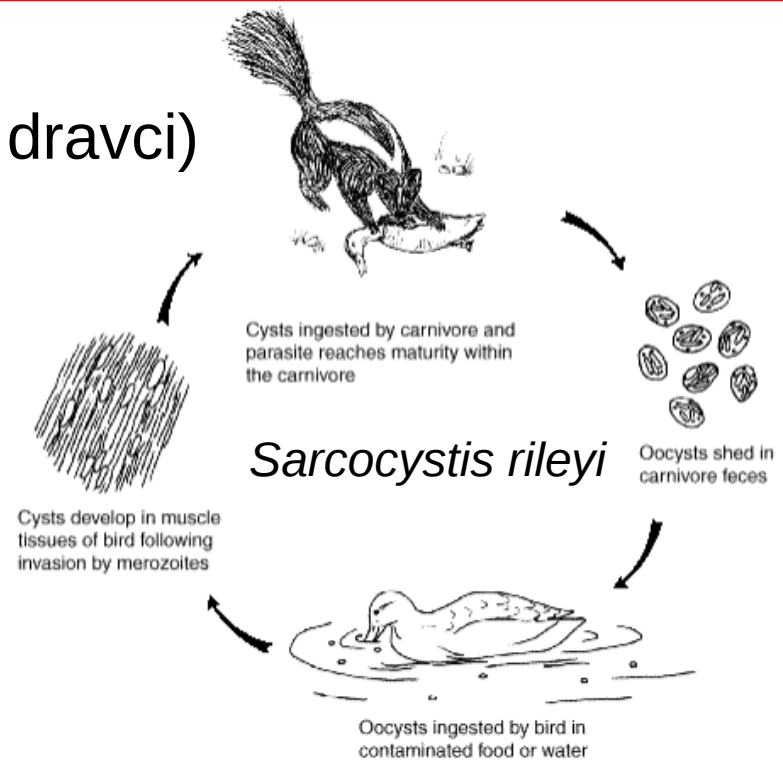
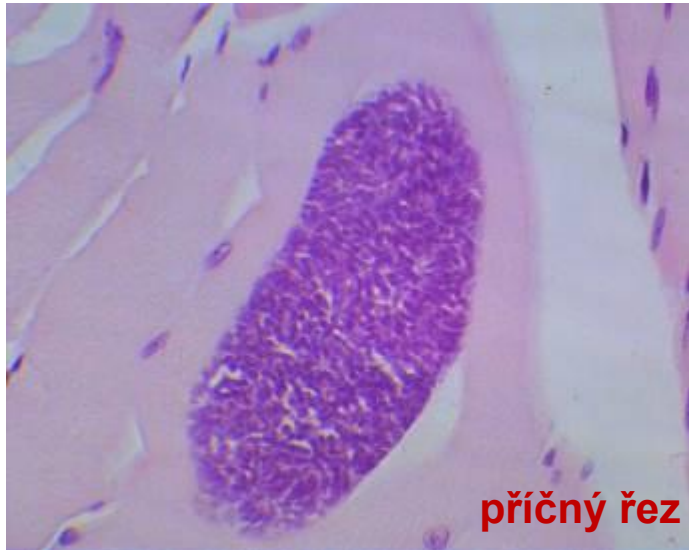
tvorba sexuálních stadií
střevo



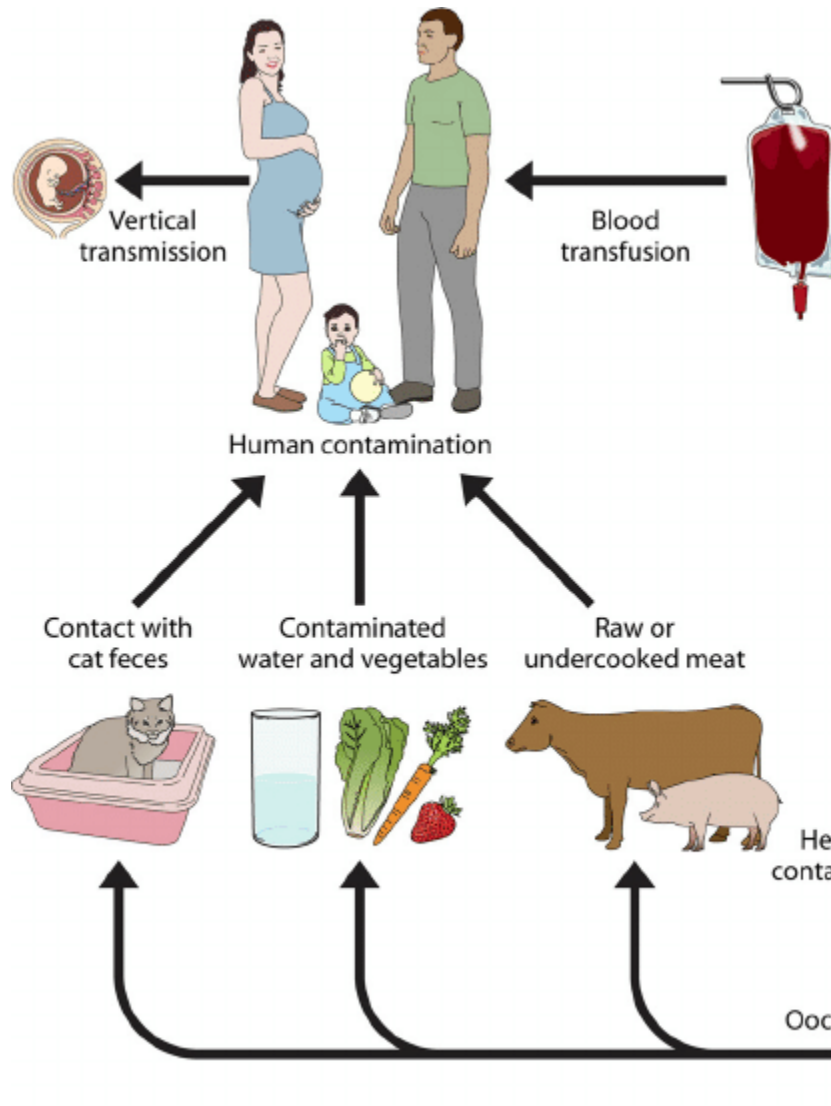
Sarcocystis

Sarcocystis (merogonie) – trvalý preparát (16×)

- dvouhostitelské kokciémie (DH – dravci)
- merogonie – sval



Toxoplasma gondii

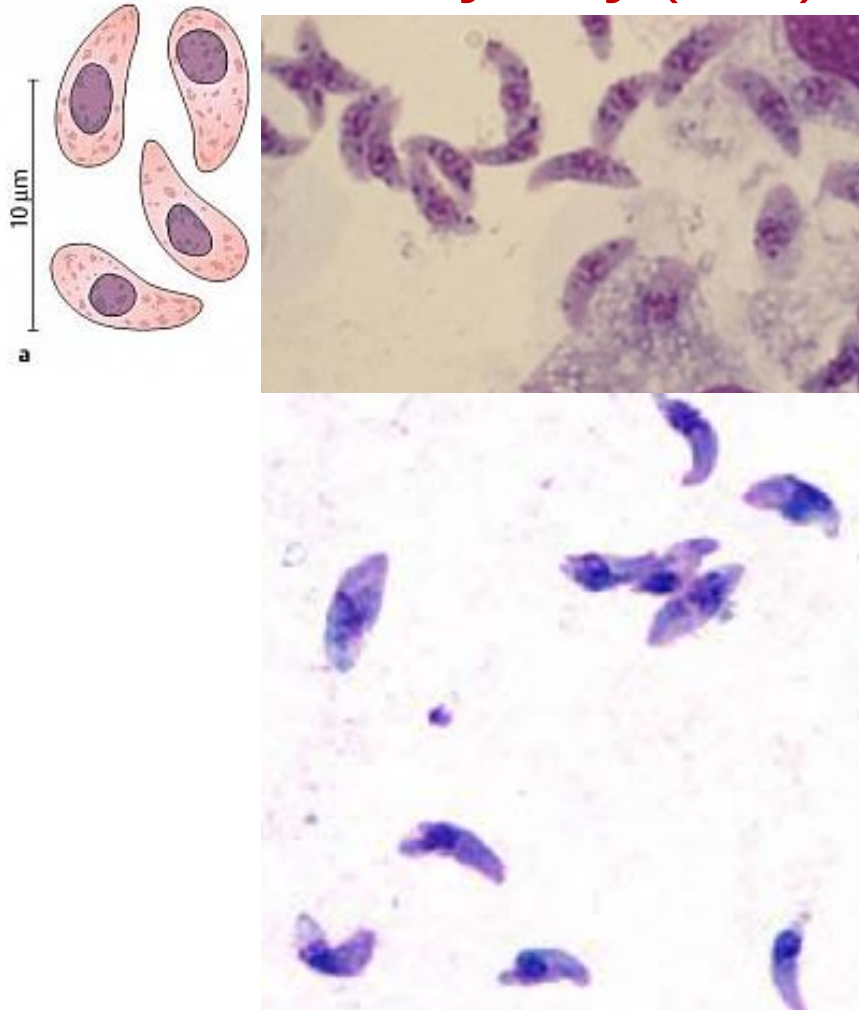


Toxoplasma gondii

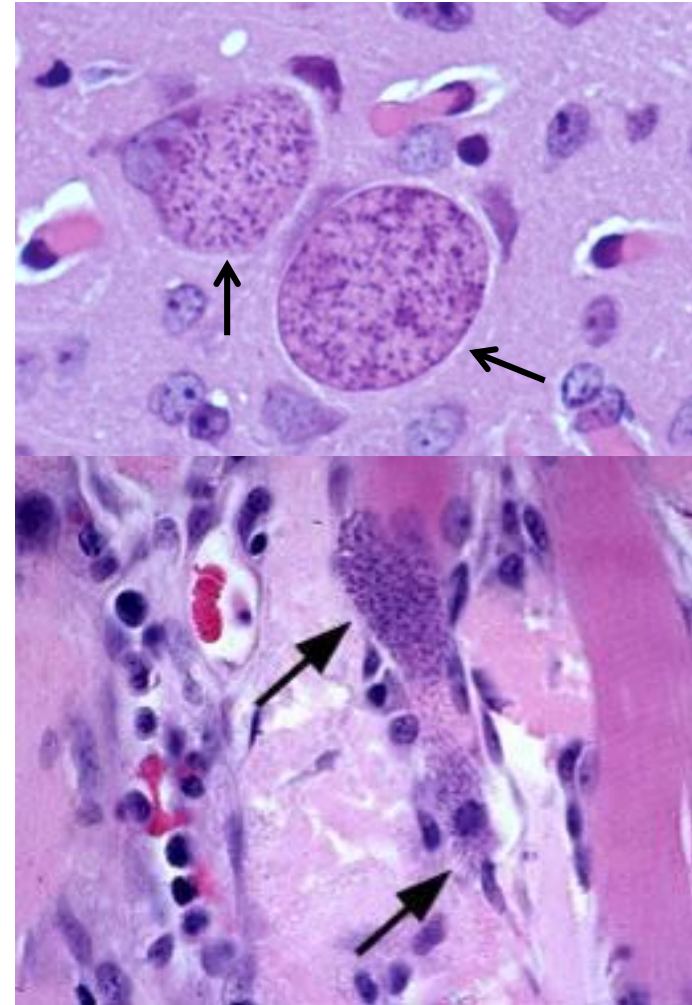
T. gondii (tachyzoiti) – trvalý preparát (16×)
T. gondii (tkáňová cysta) – trvalý preparát (8×)

- merogonie

tachyzoity (krev)



tkáňová cysta s bradyzoity (mozek)

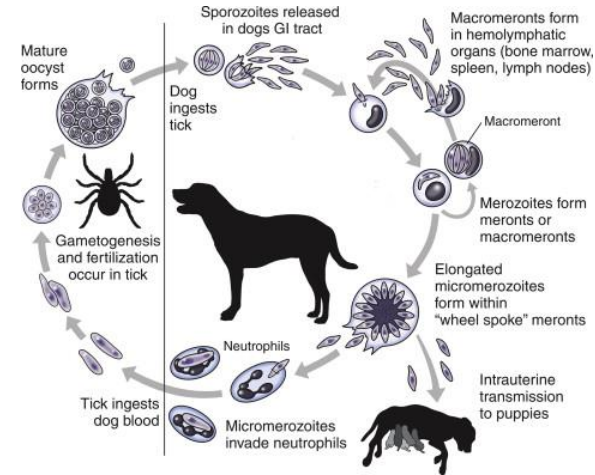


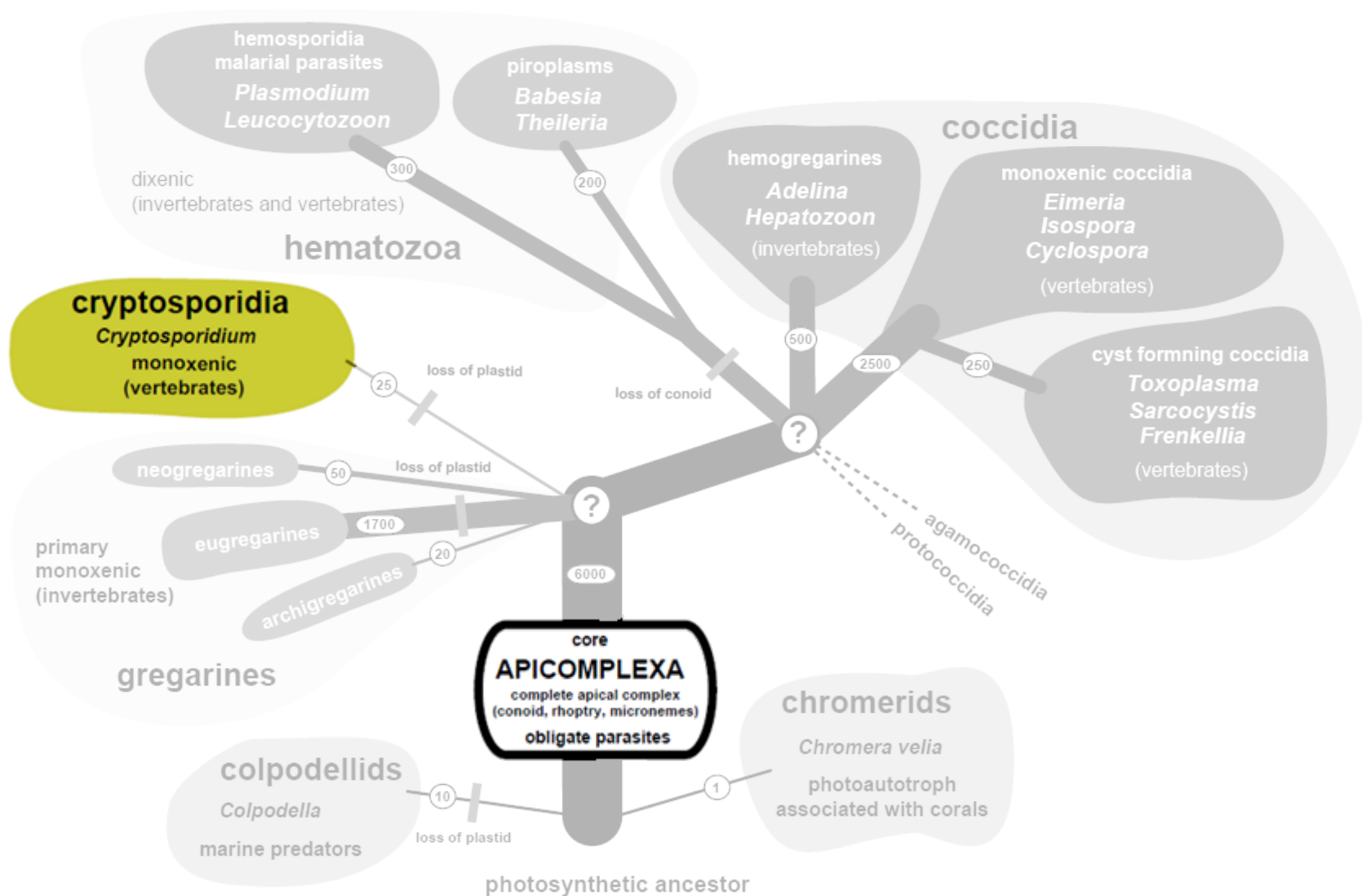
Hepatozoon

Hepatozoon (krev) – trvalý preparát (16×)

- napadá červené i bílé krvinky
- MH – obojživelníci, plazi, ptáci, ryby, savci
- DH – pijavky, roztoči, klíšťata, hmyz

gamont (krev, plaz)

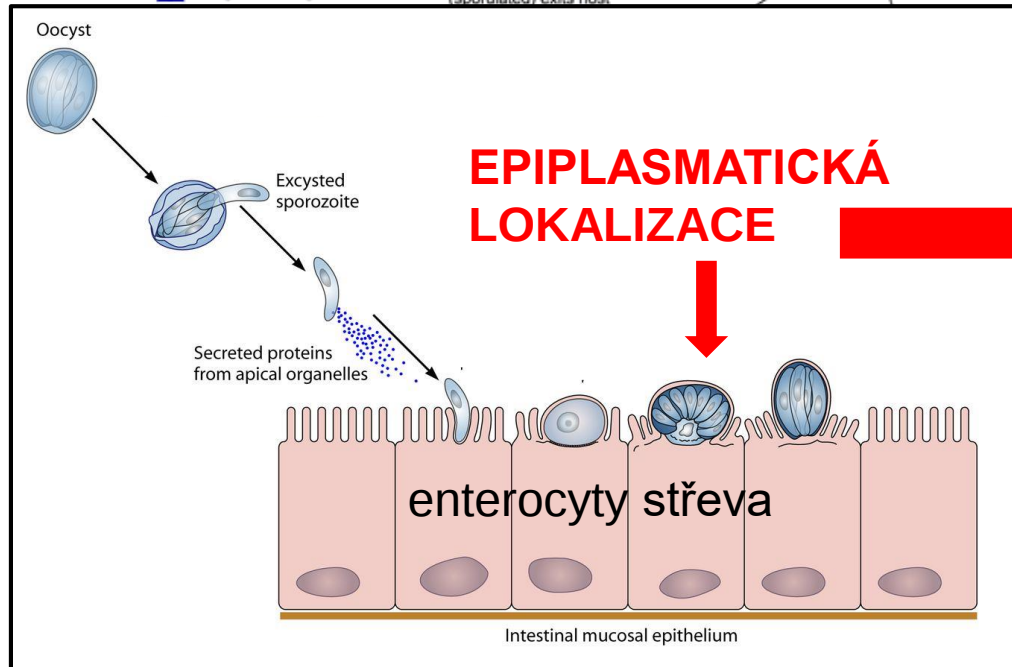
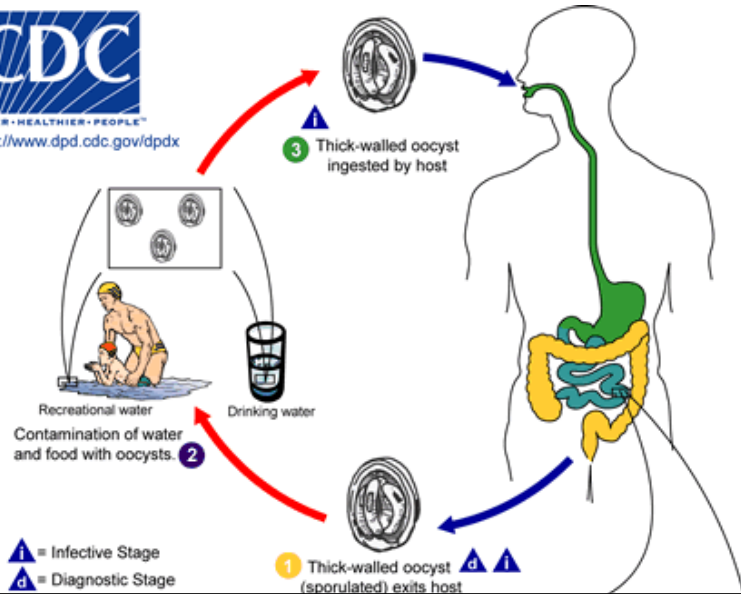




Cryptosporidium



<http://www.dpd.cdc.gov/dpdx>



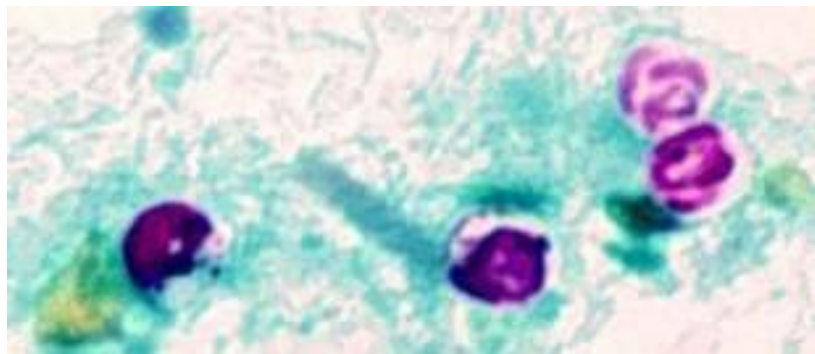
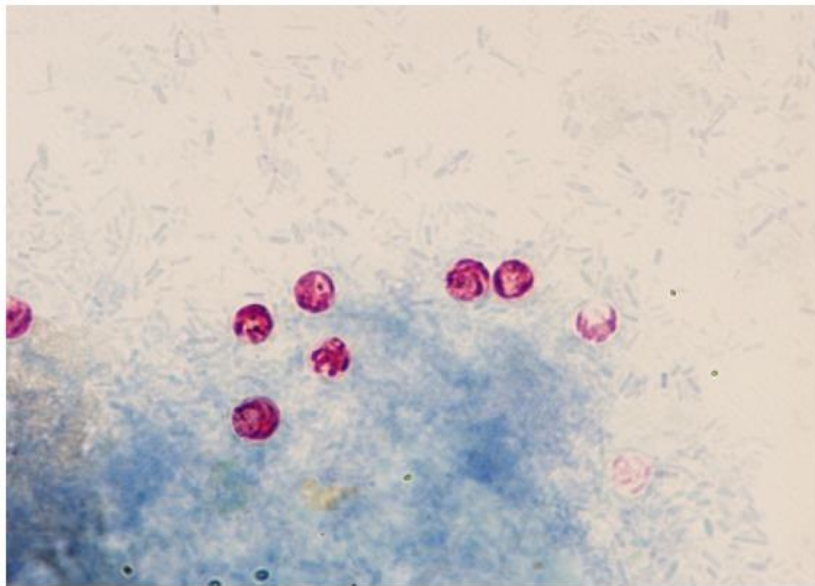
**EPIPLASMATICKÁ
LOKALIZACE**



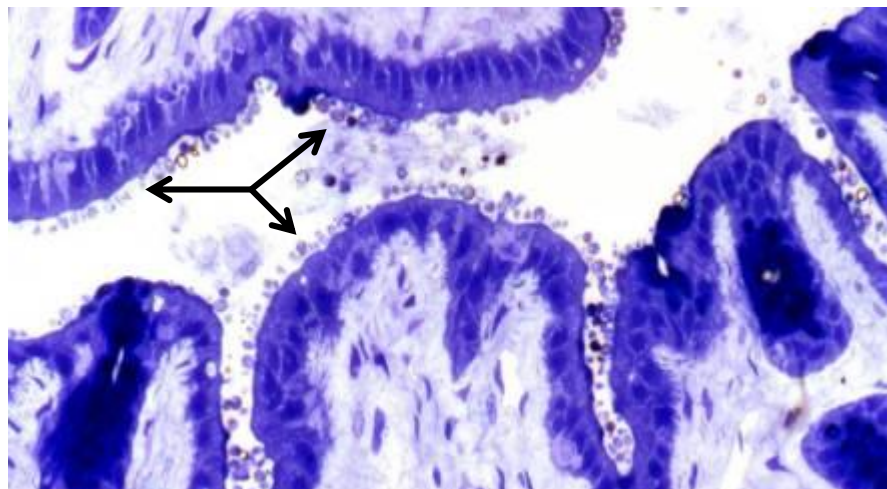
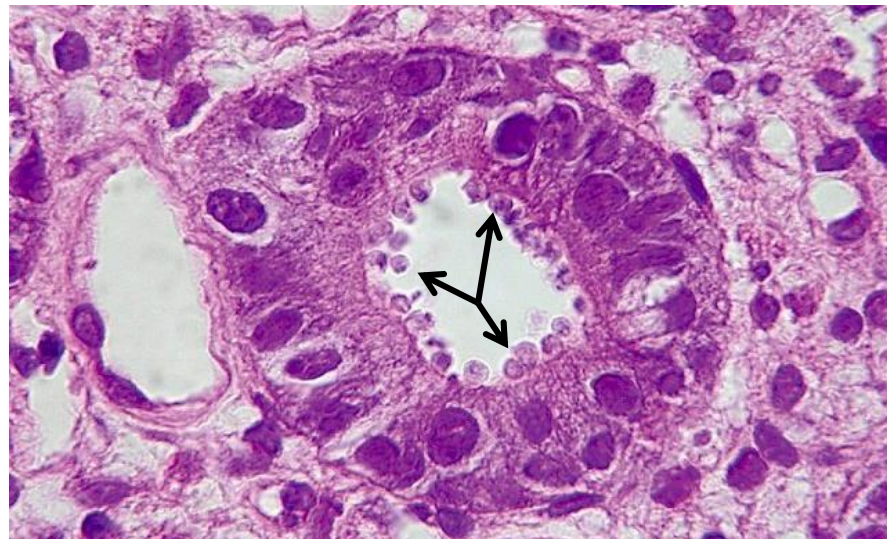
Cryptosporidium

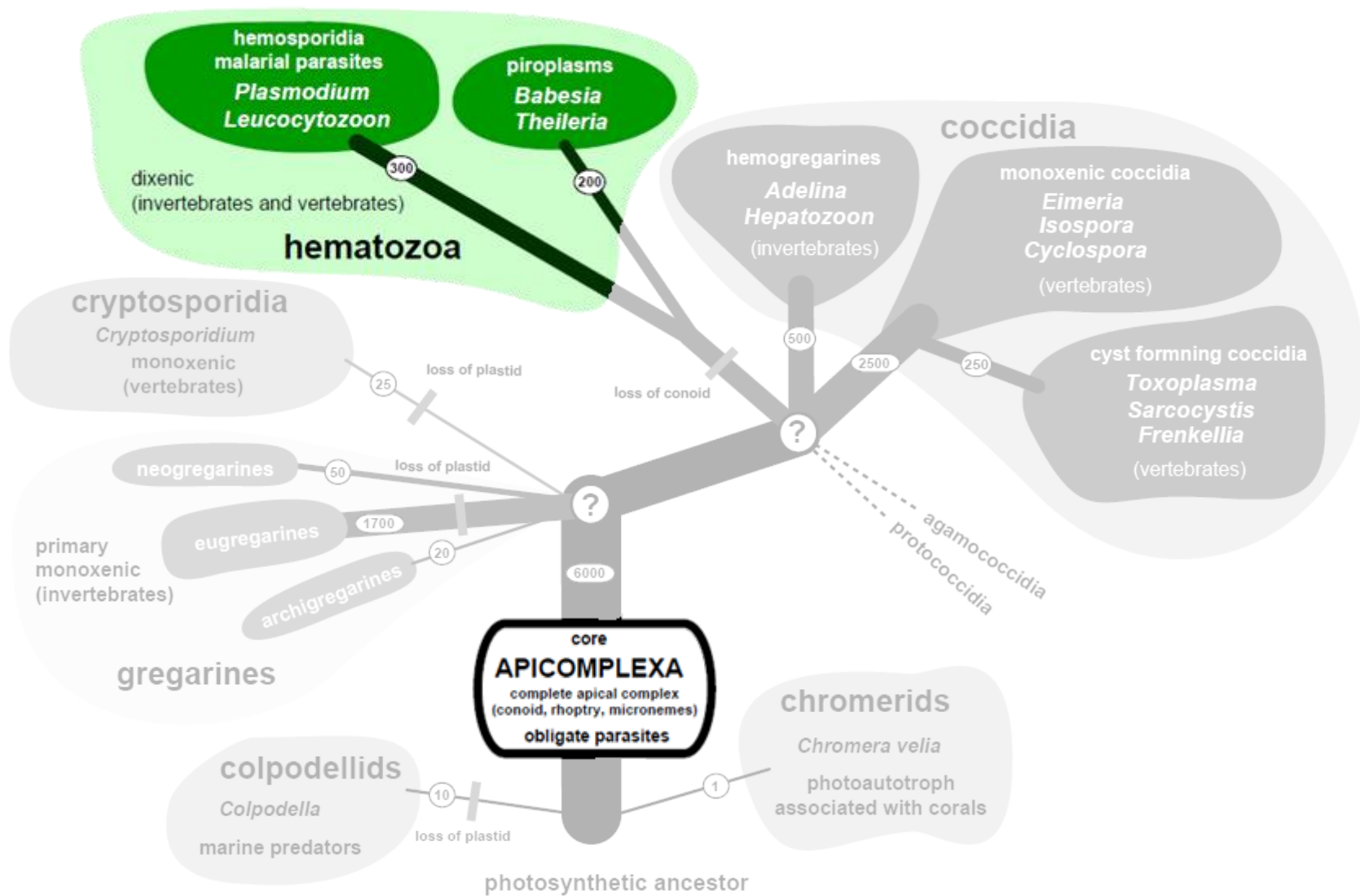
Cryptosporidium (oocysty) – trvalý preparát (15×)
Cryptosporidium (řez střevem) – trvalý preparát (16×)

oocysty
(stolice)



merogonie - řez střevem
(epiplasmatická lokalizace)

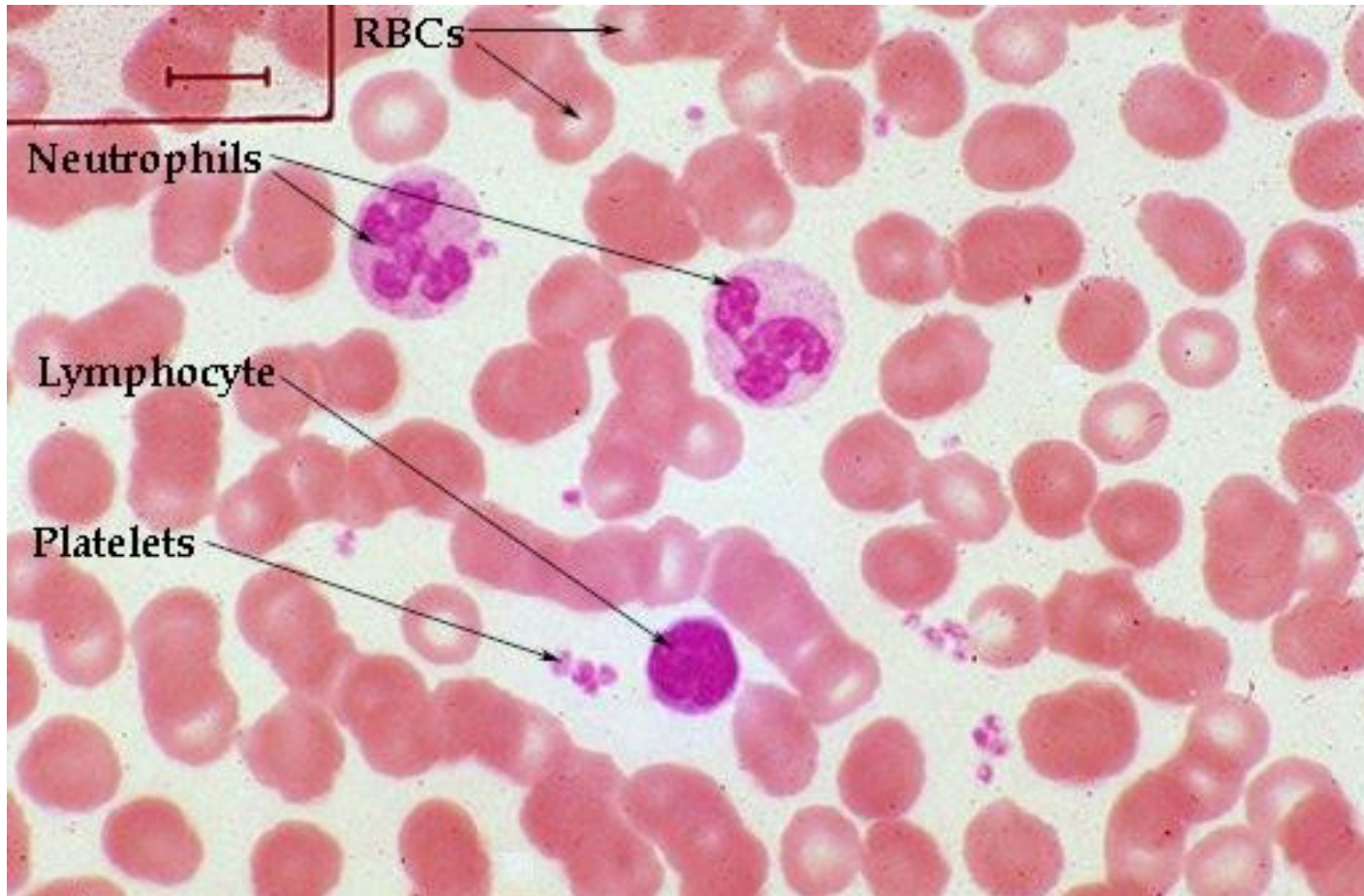




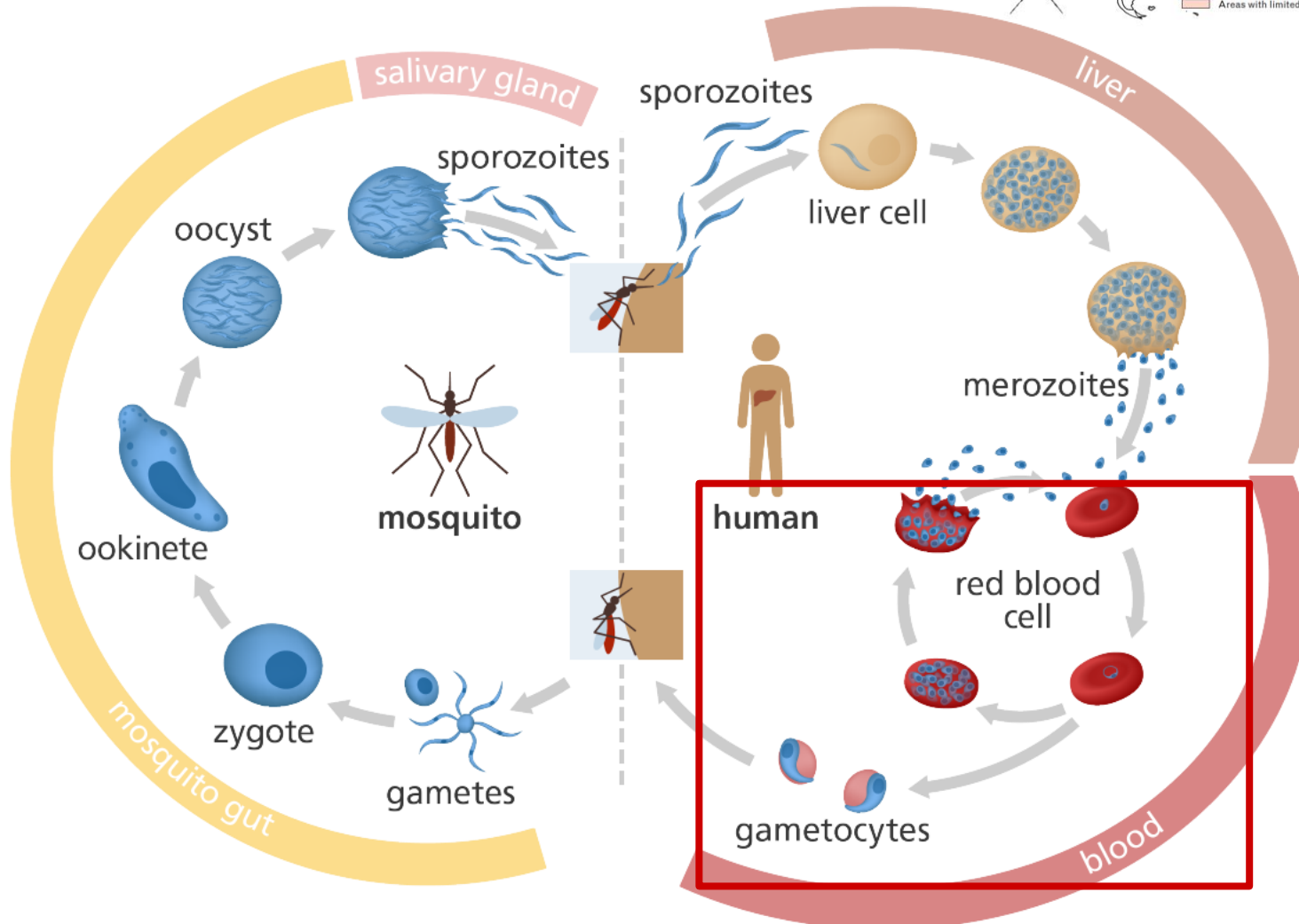
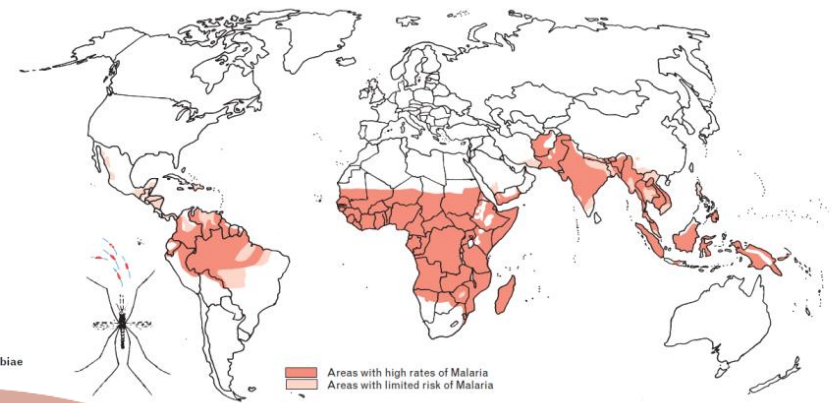
krvní roztěr

lidská krev – trvalý preparát (8×)

- roztěr z lidské krve – nenakažená krev

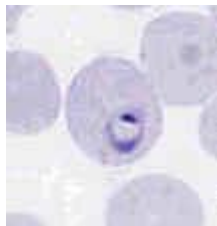


Plasmodium spp.

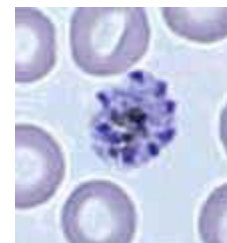


STÁDIA V ERYTROCYTECH OBRATLOVCŮ

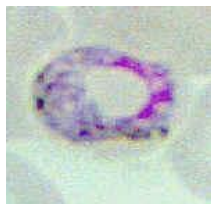
prstýnek



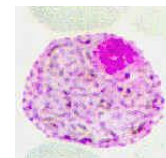
schizont



trofozoit



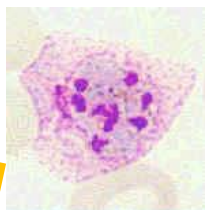
gametocyty



P. vivax

P. falciparum

schizont



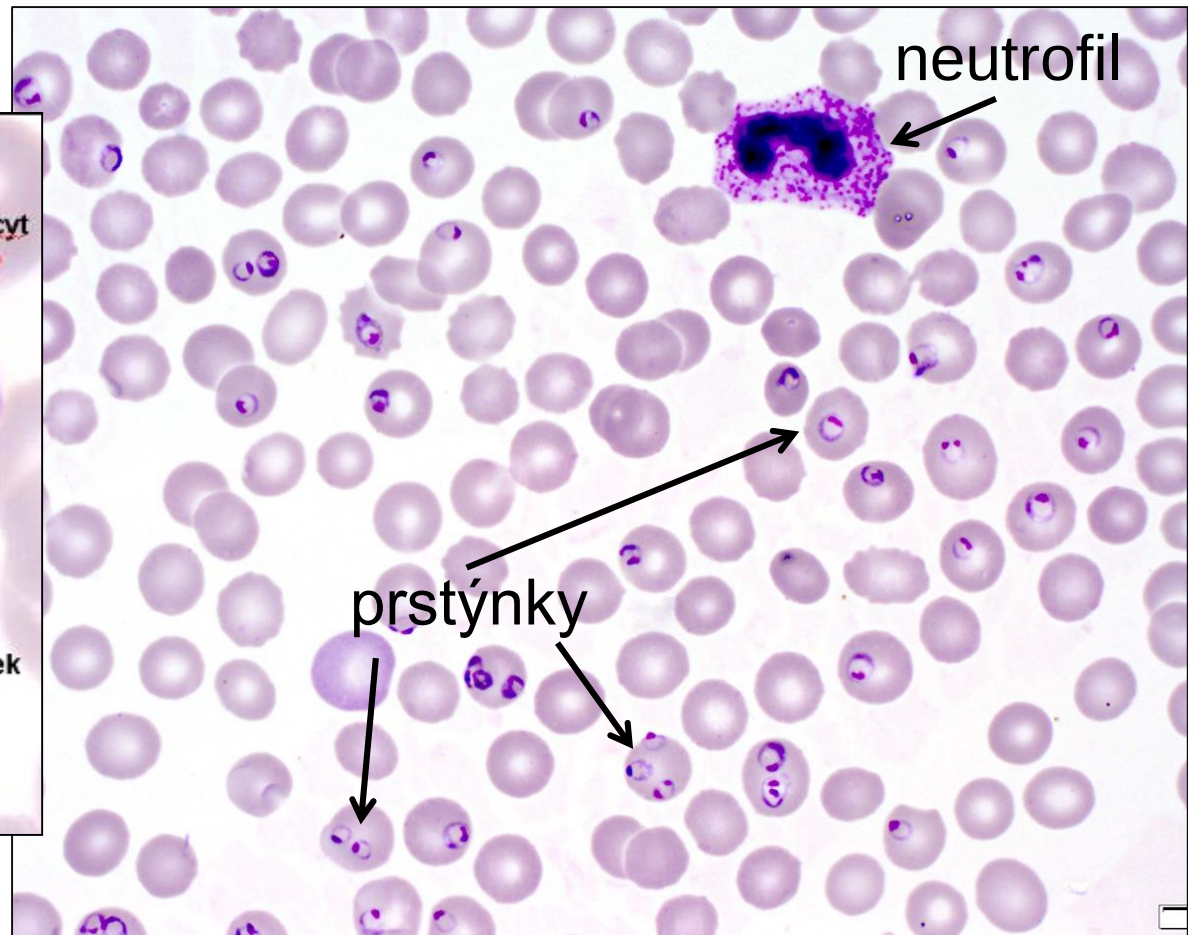
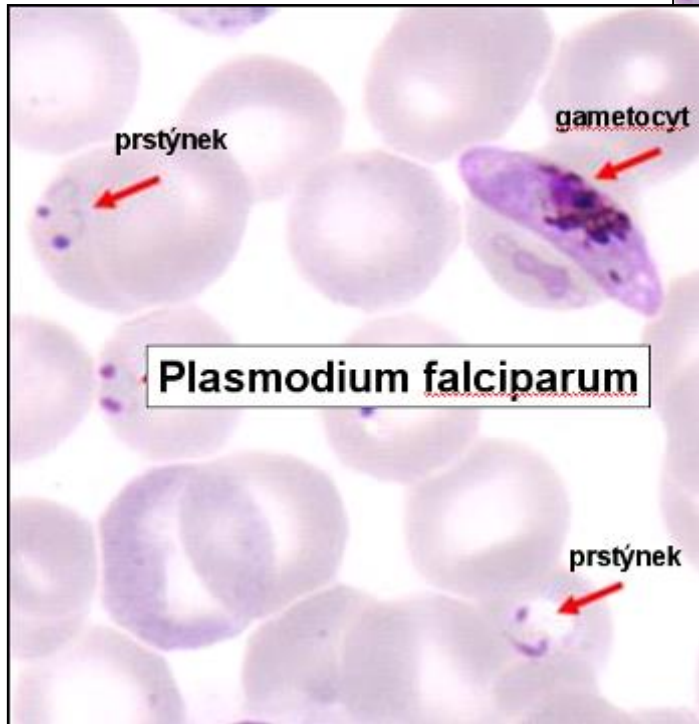
plasmodium je mnohoaderný útvar
vznikající při dělení jádra, přičemž
cytoplazma se nedělí

Plasmodium spp.

P. berghei (krev) – trvalý preparát (8×)

P. falciparum (krev) – trvalý preparát (8×)

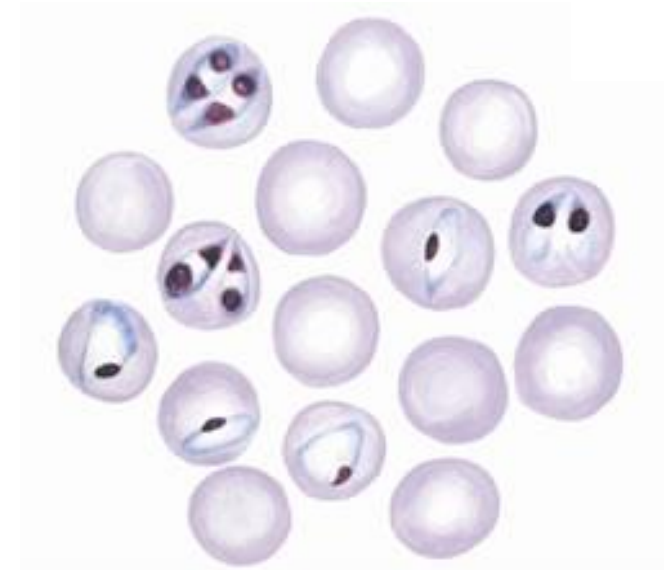
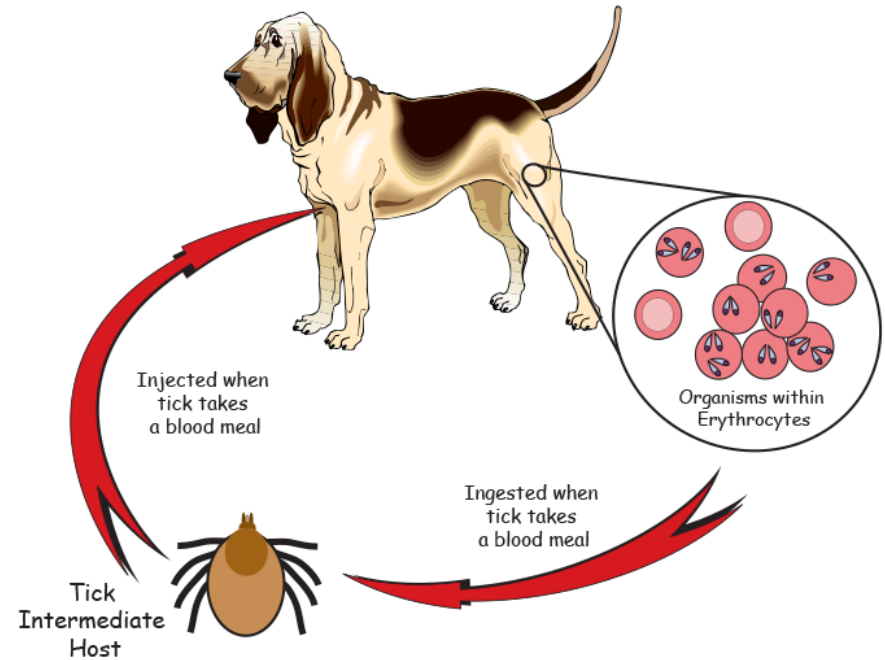
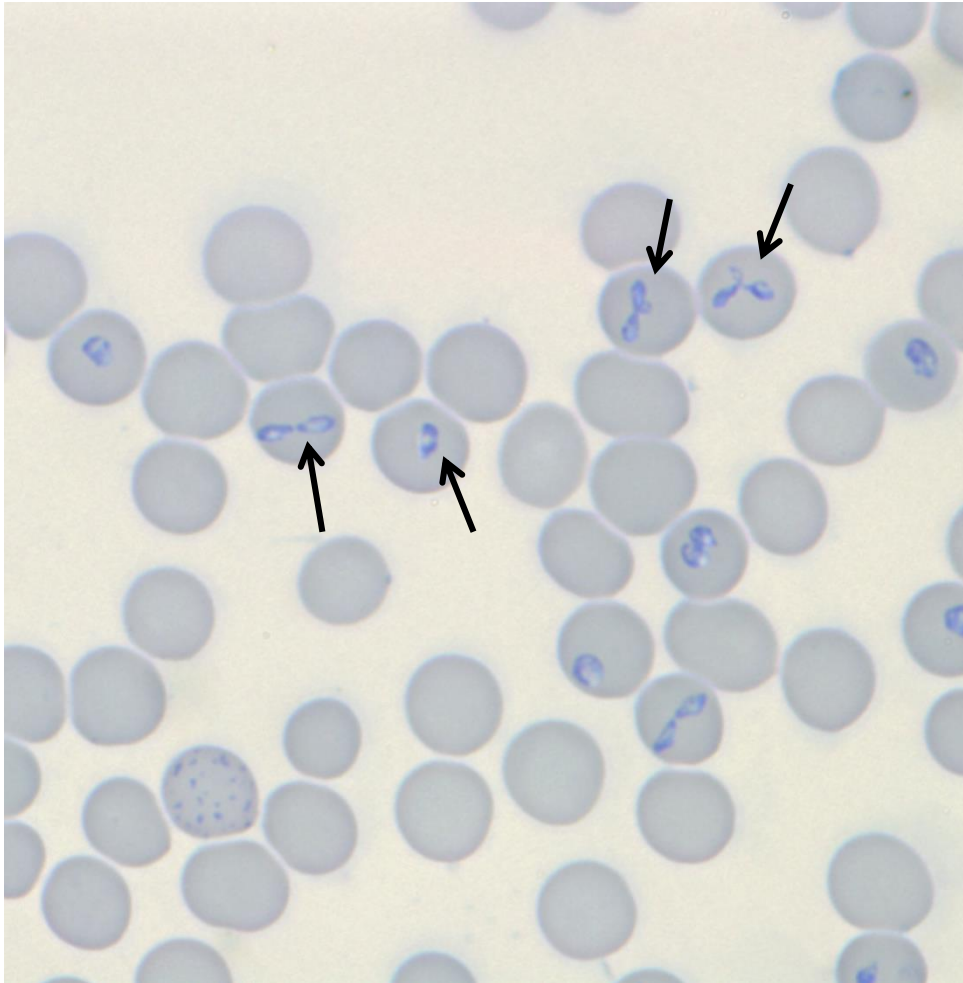
- *Plasmodium berghei* – myš, silná infekce
- *Plasmodium falciparum* – člověk, střední infekce

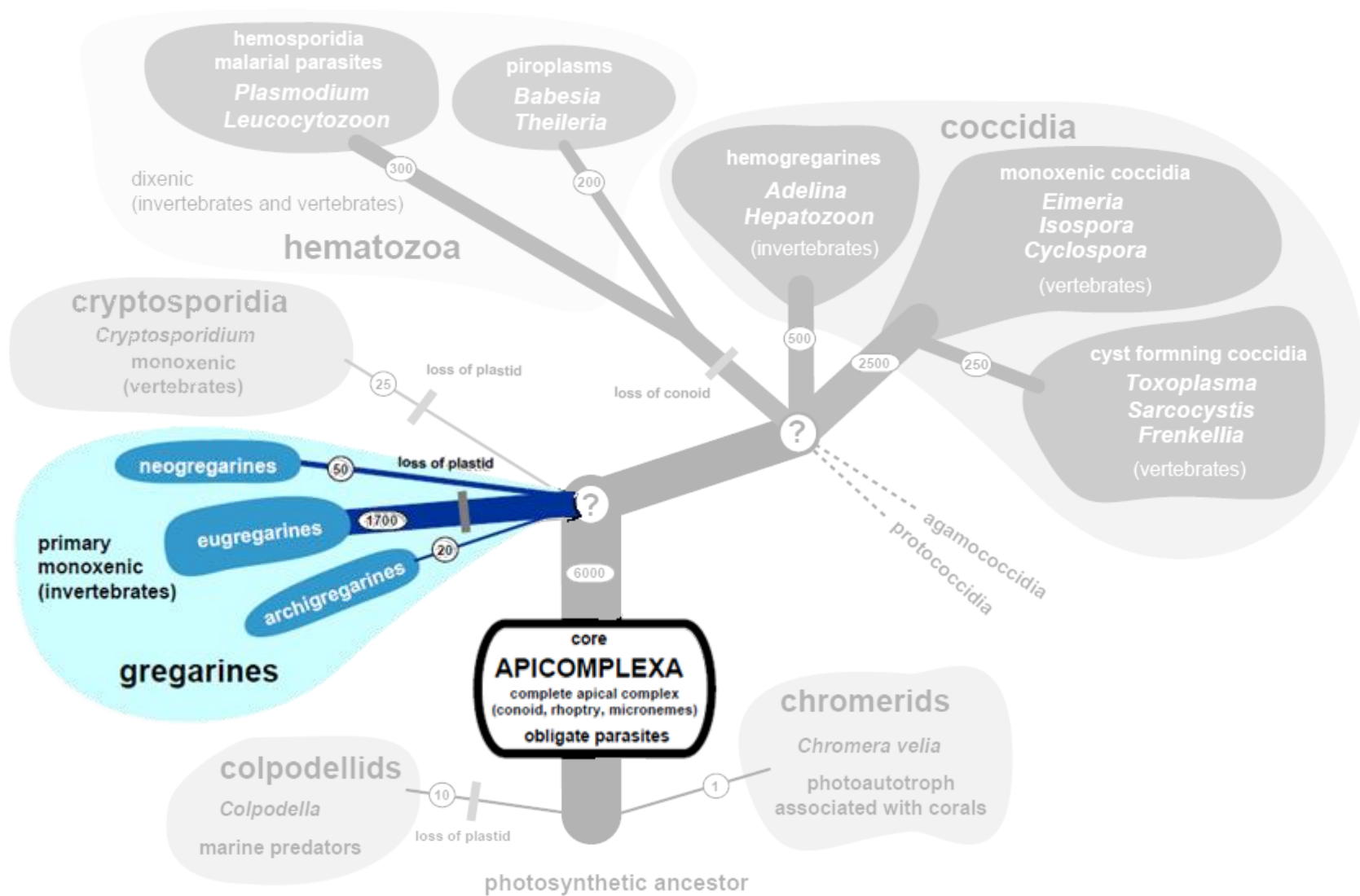


Babesia canis

- **merozoiti** v erythrocytech

B. canis (krev) – trvalý preparát (16×)

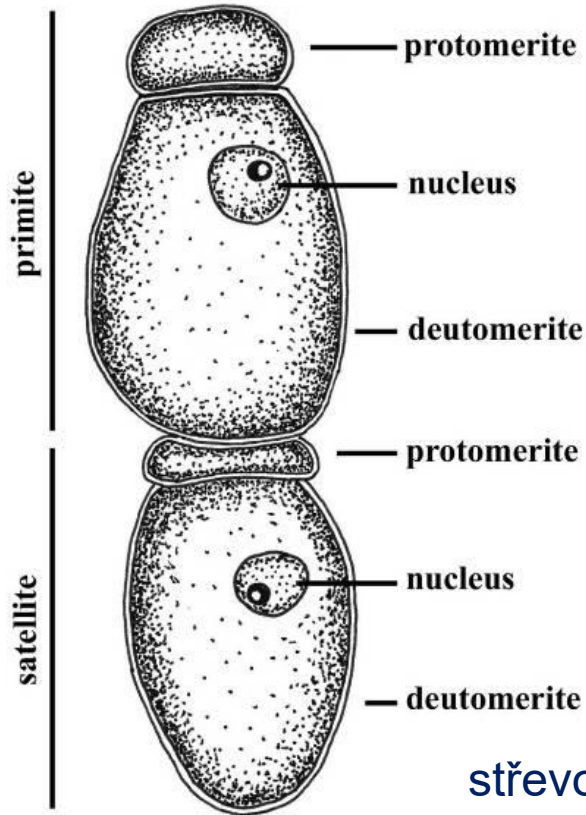




Gregarinea (hromadinky)

Gregarinea – nativní preparát, střevo švába

- trávicí trakt/tělní dutina bezobratlých



střevo švába šedého
(*Nauphoeta cinerea*)

