



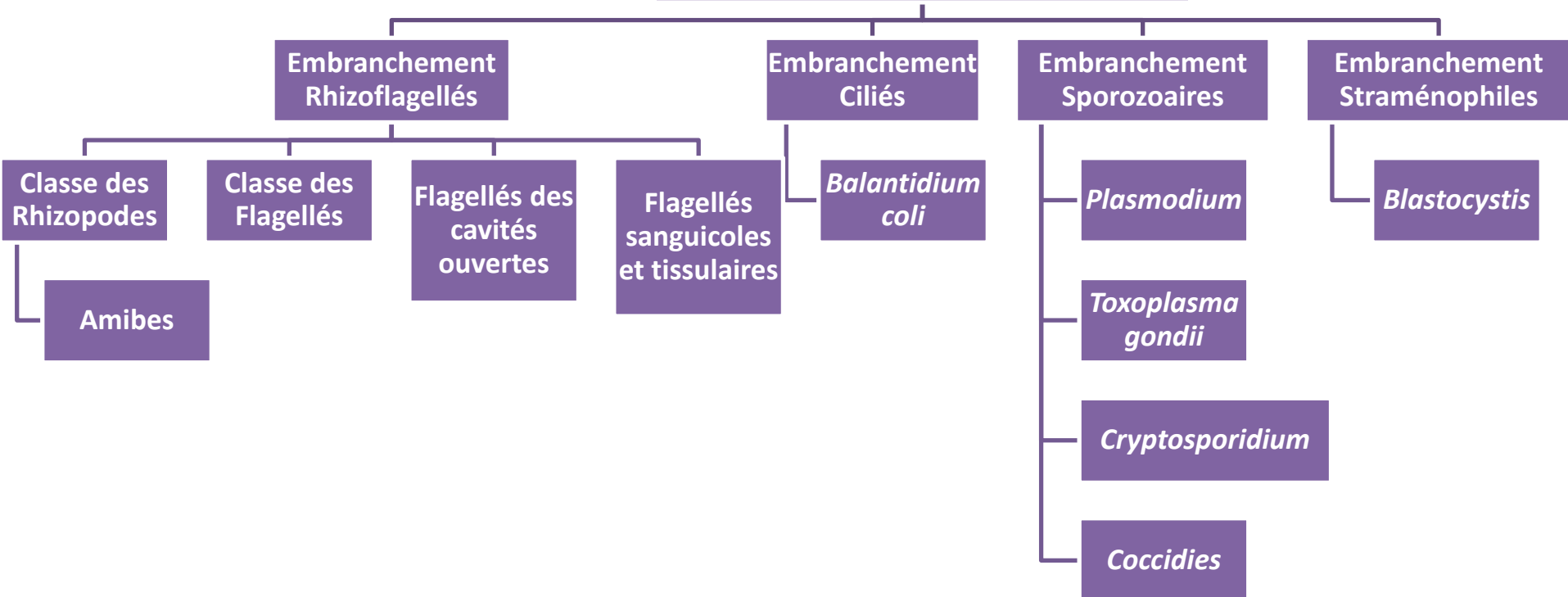
UNIVERSITE DE CONSTANTINE 3
FACULTE DE MEDECINE
TD 3^{ème} année Médecine

LES PROTOZOAIRE

Dr. BENLARIBI IMANE HALIMA

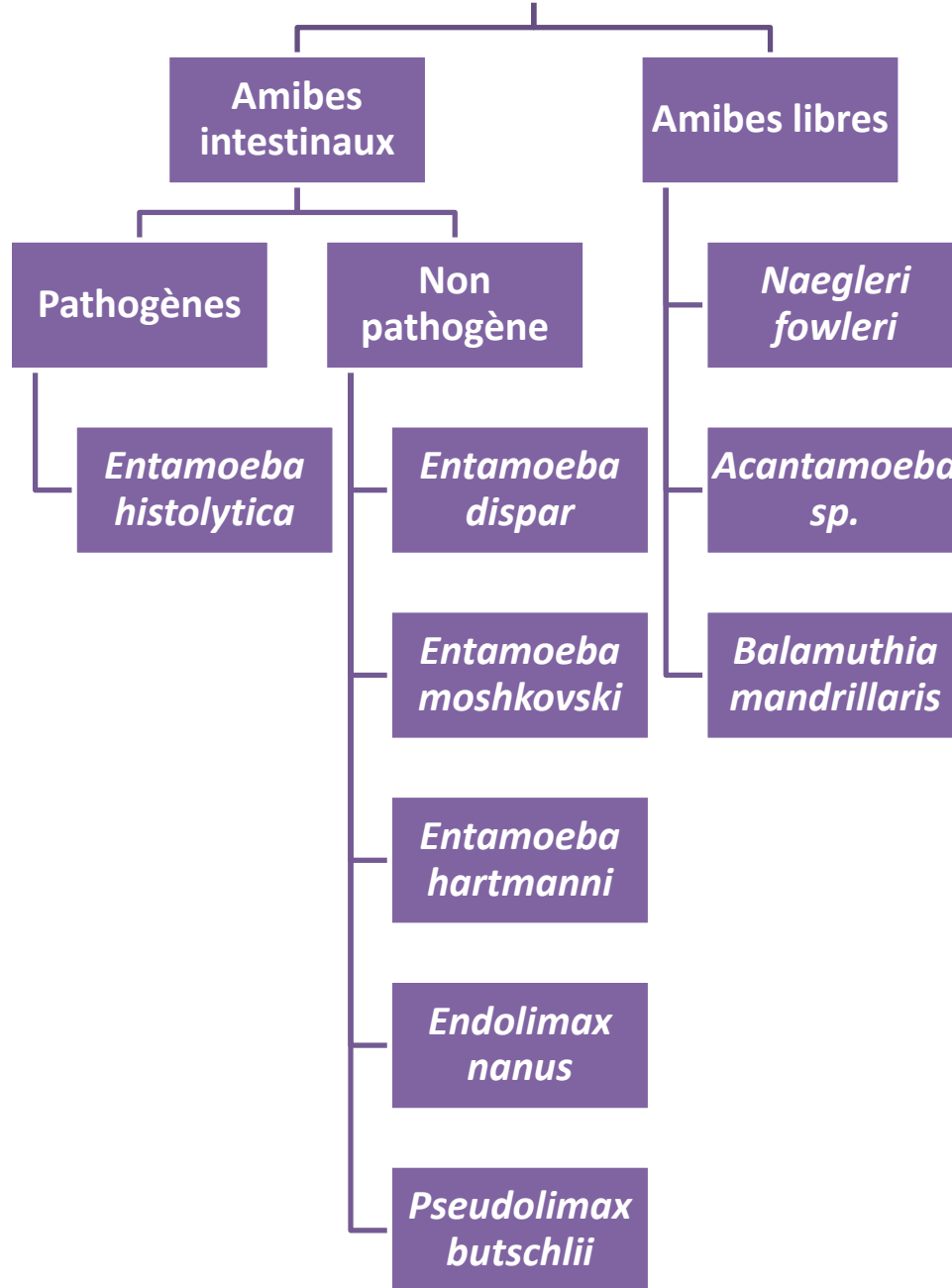
Année universitaire: 2020/2021

Protozoaires

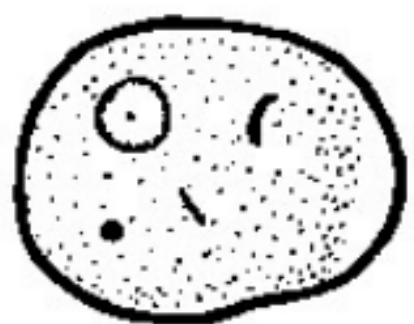


LES AMIBES

Rhizopodes



Amibes intestinaux pathogènes:
Entamoeba histolytica

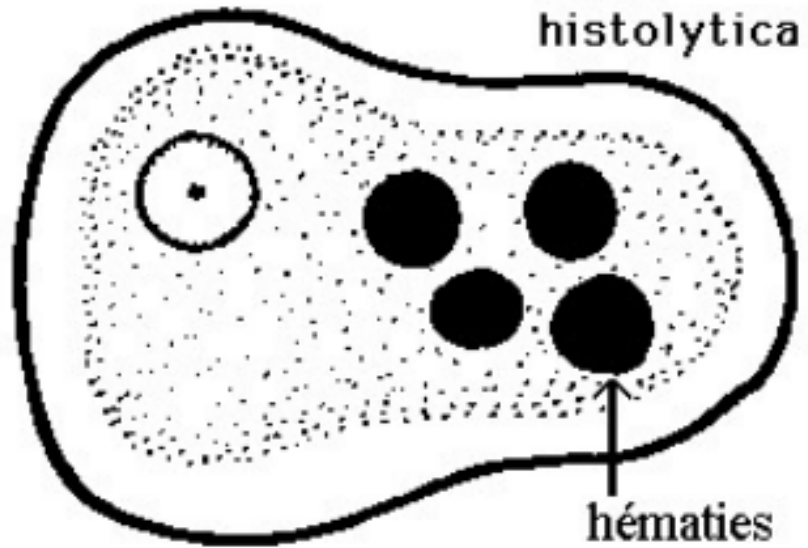


forme
minuta



kyste

10-15 μ



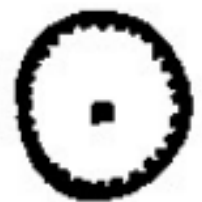
forme
histolytica

hématies

trophozoïte



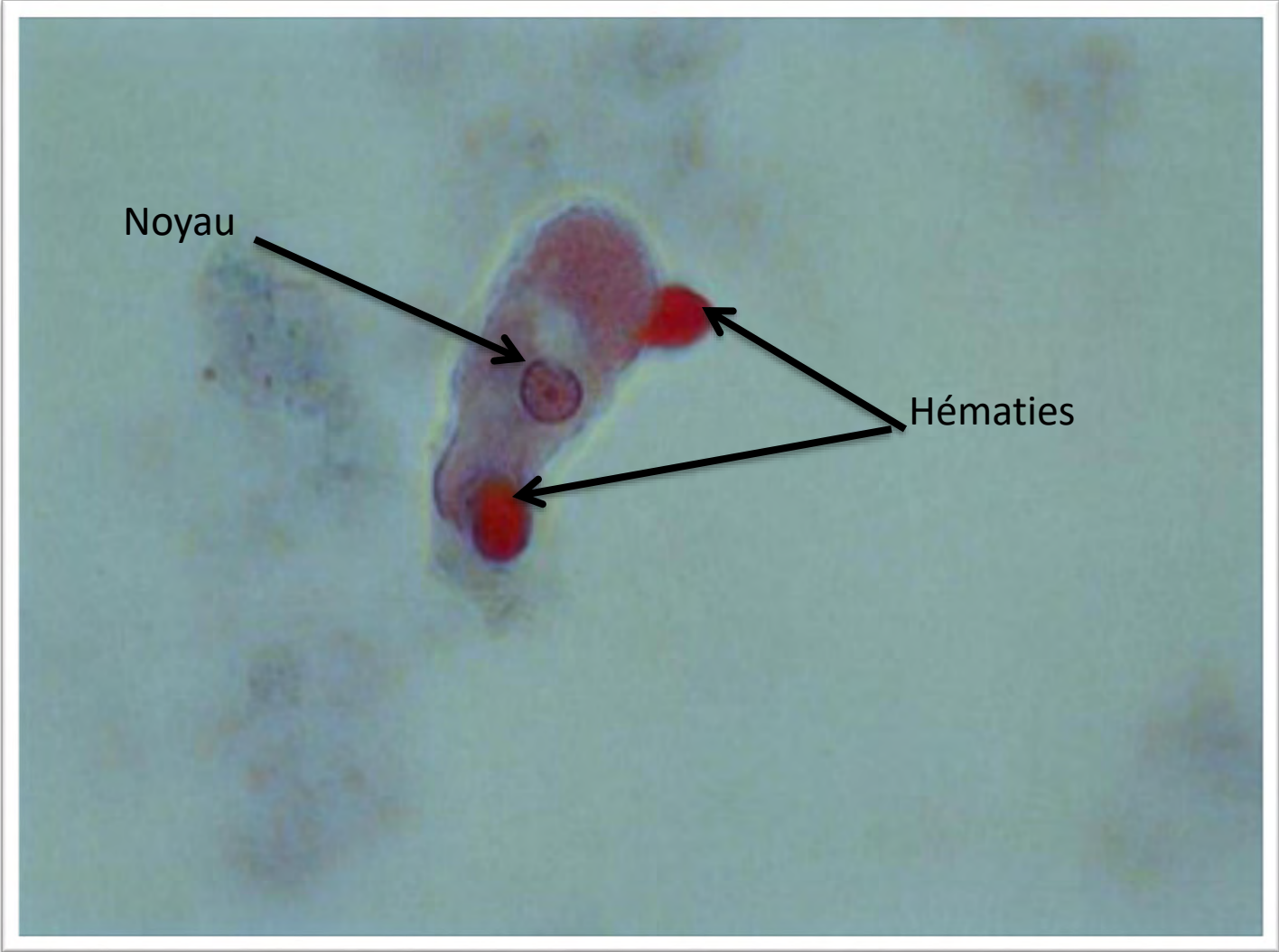
20 μ



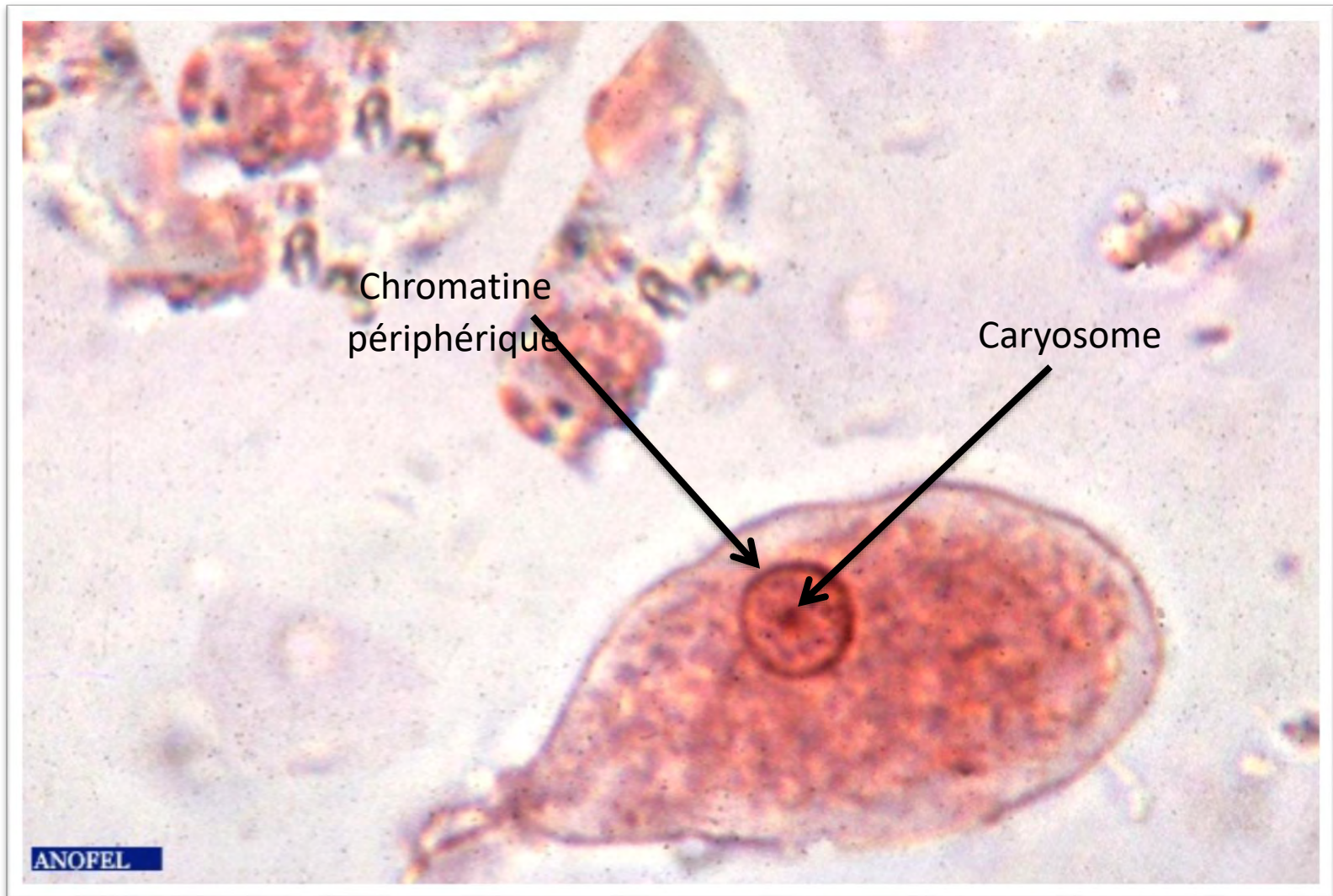
noyau

Entamoeba histolytica

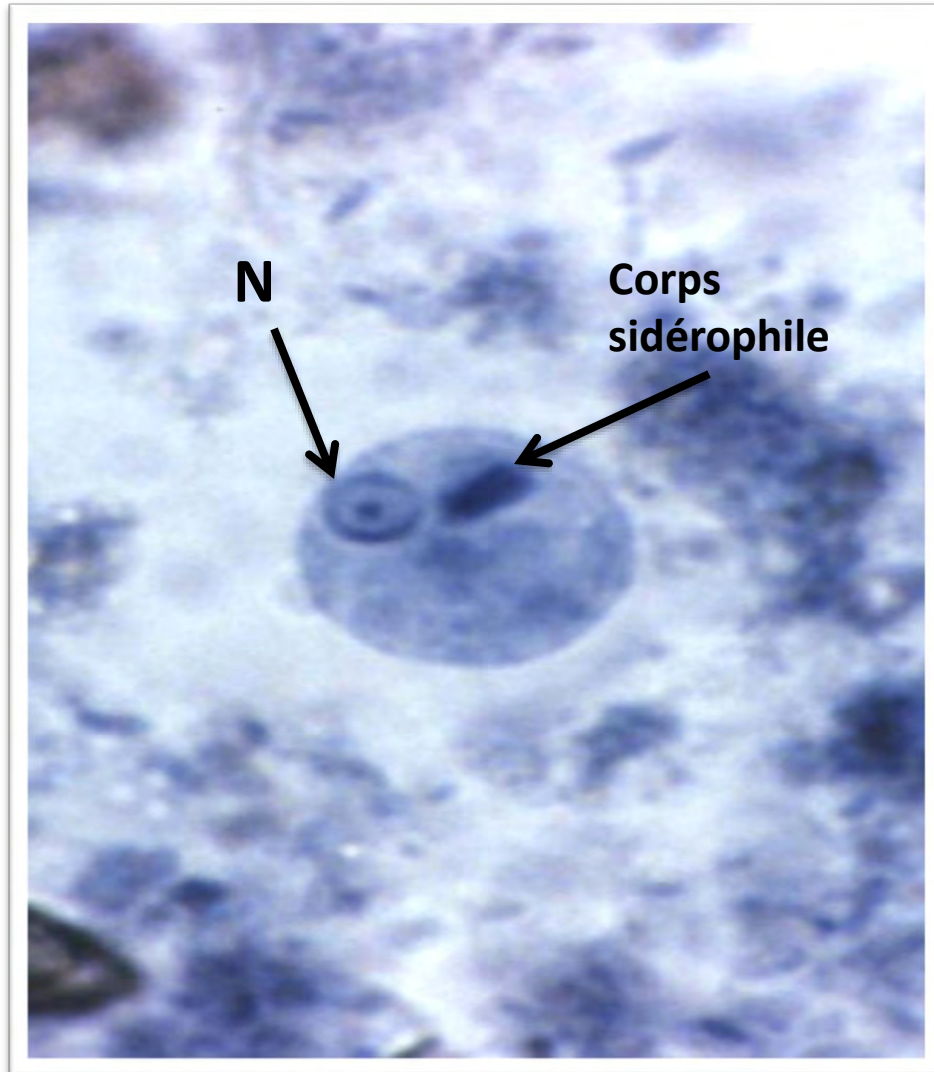
Entamoeba histolytica-Forme végétative-

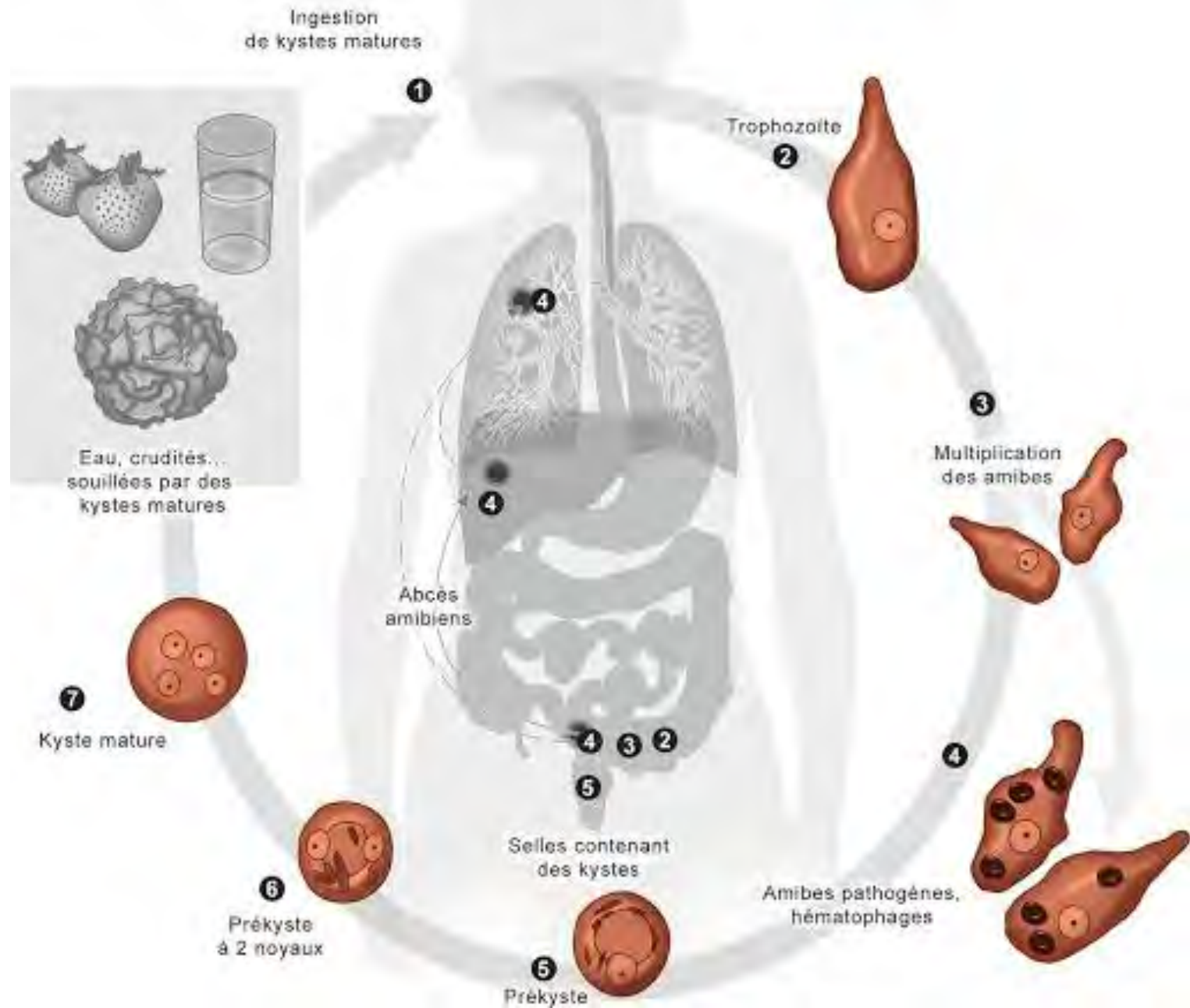


Entamoeba histolytica-Forme végétative-



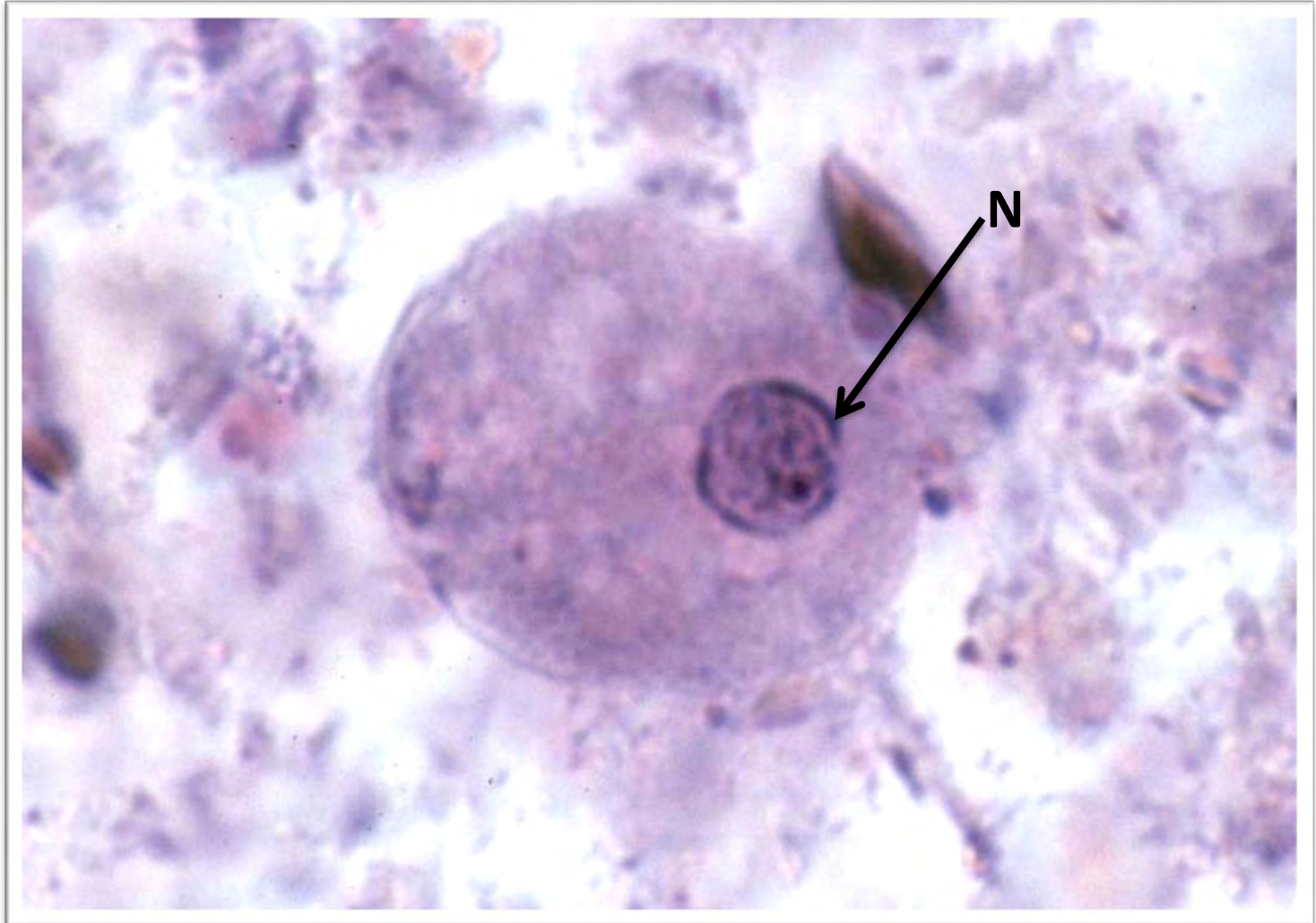
Forme kystique



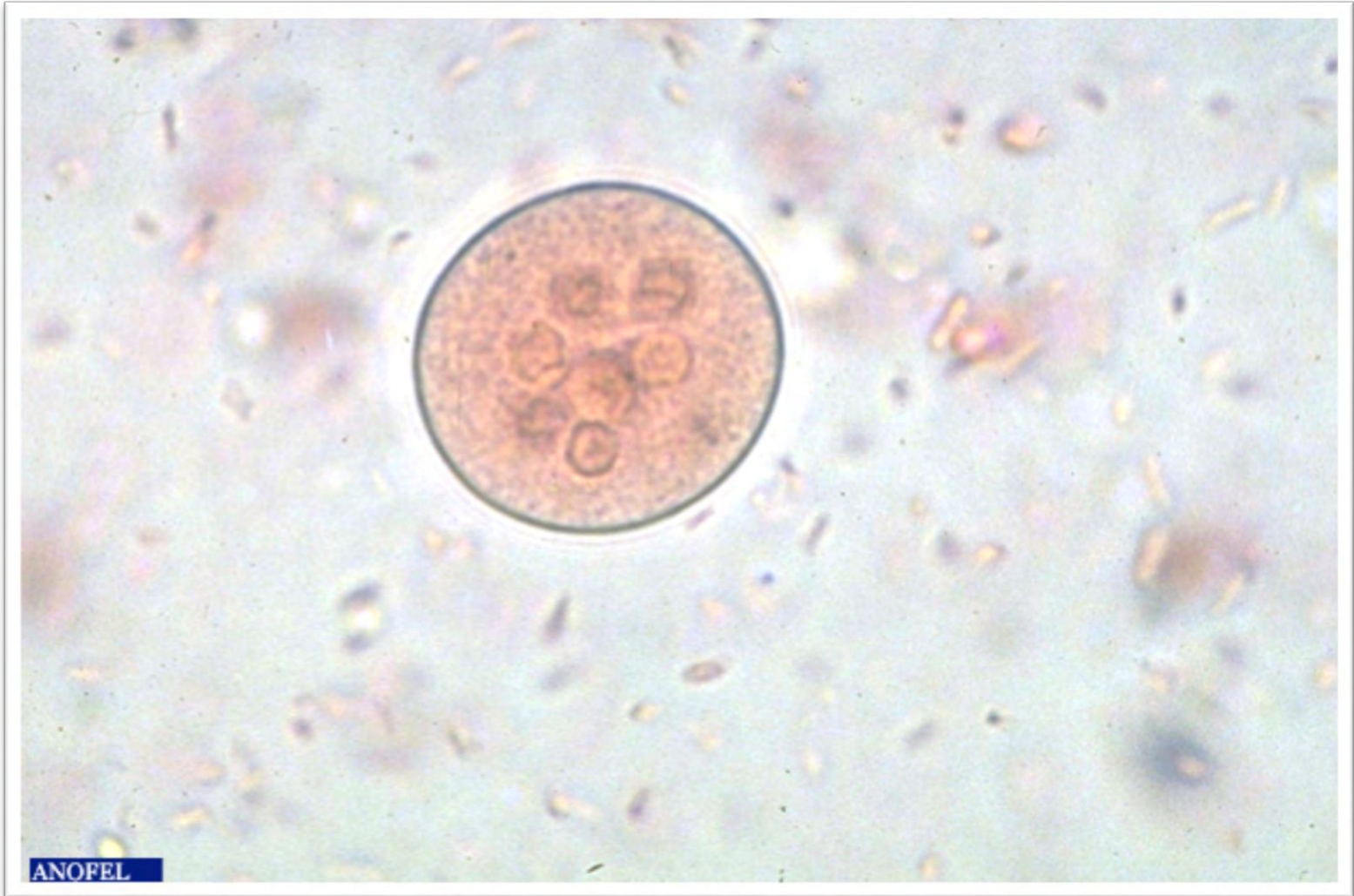


Amibes intestinaux non pathogènes:

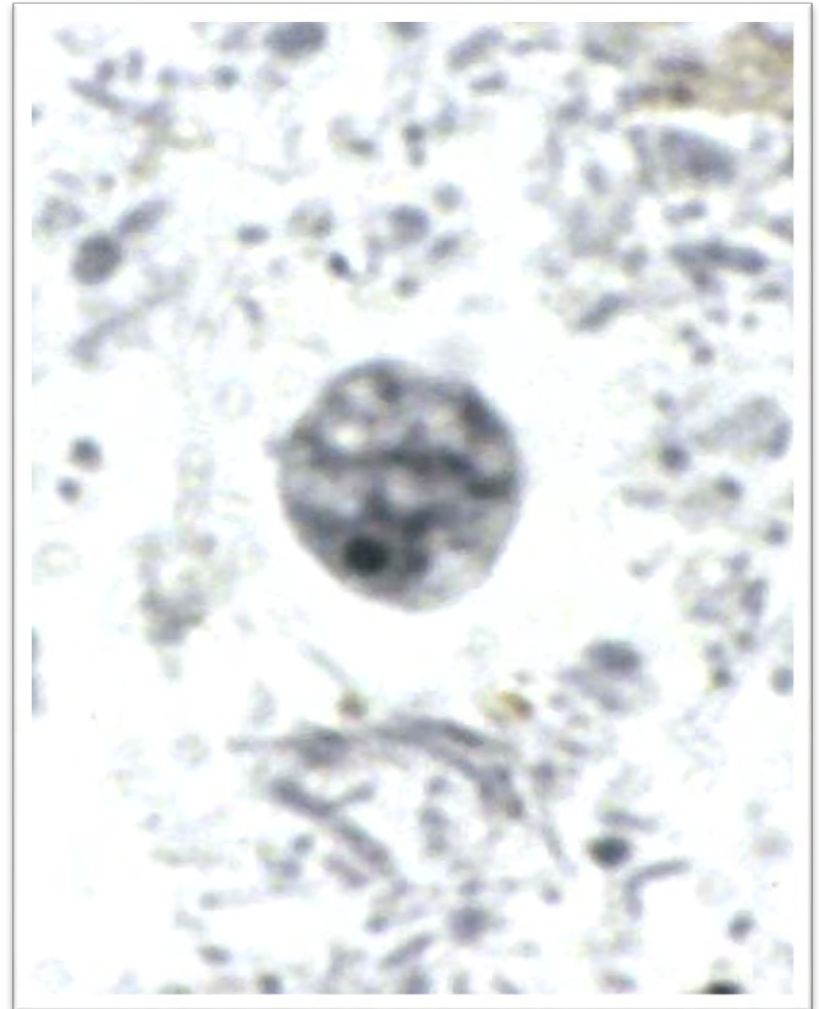
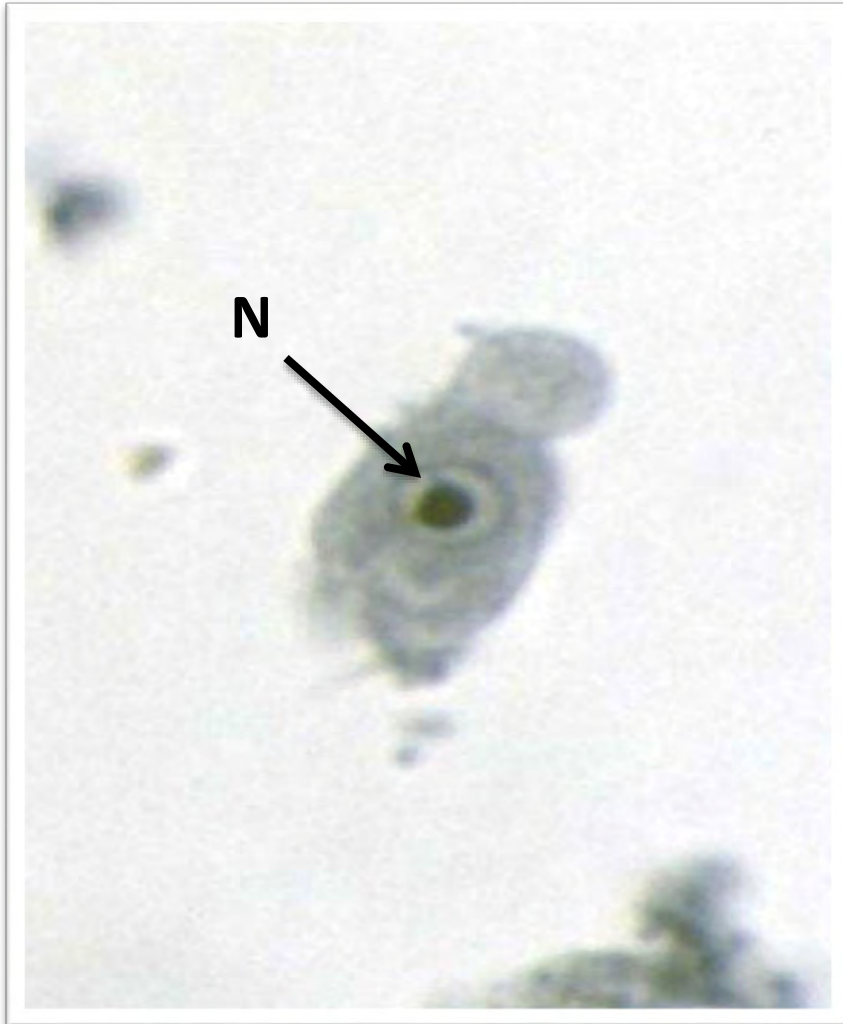
Entamoeba coli - forme végétative-



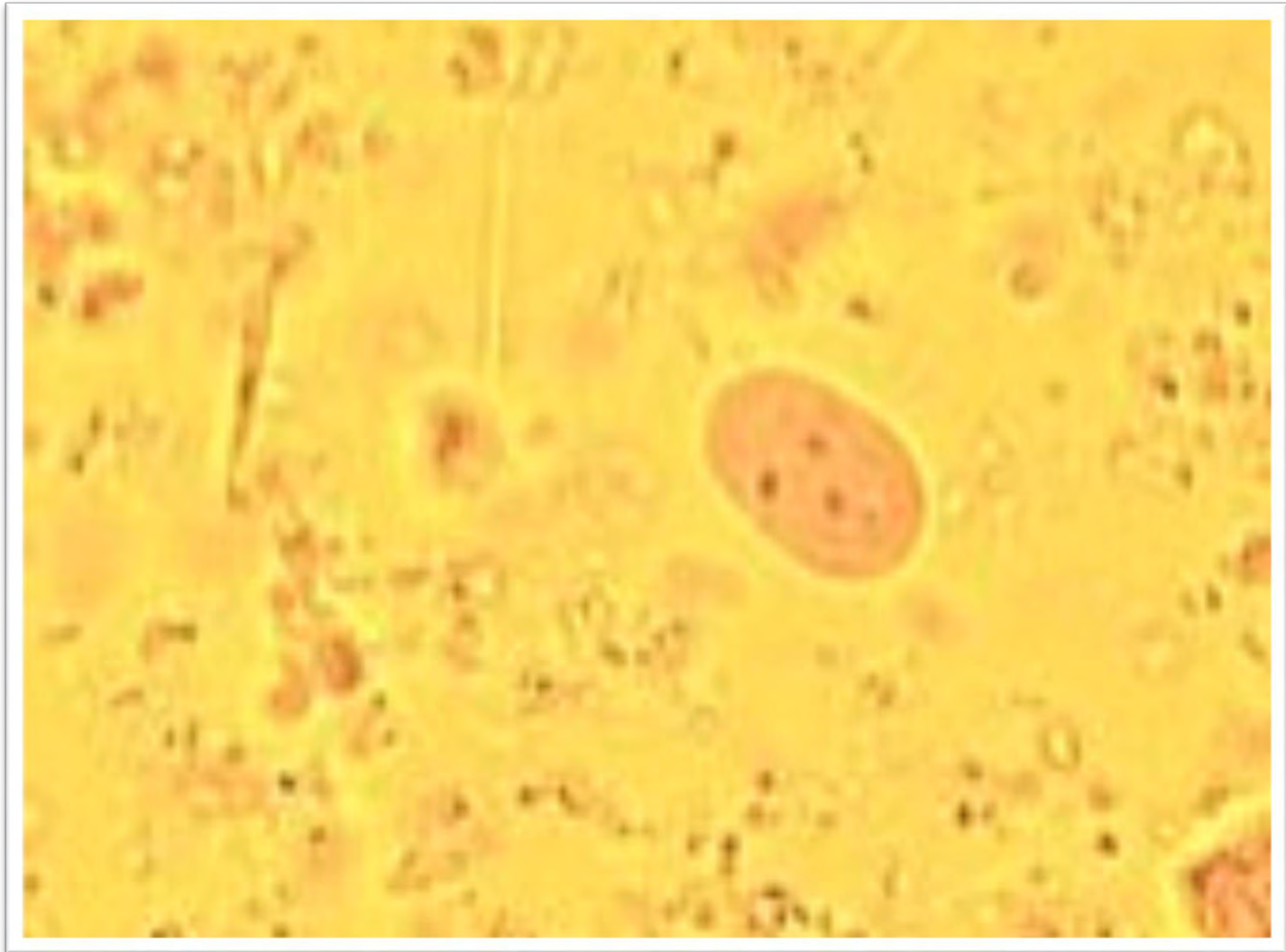
Forme kystique-8noyaux-



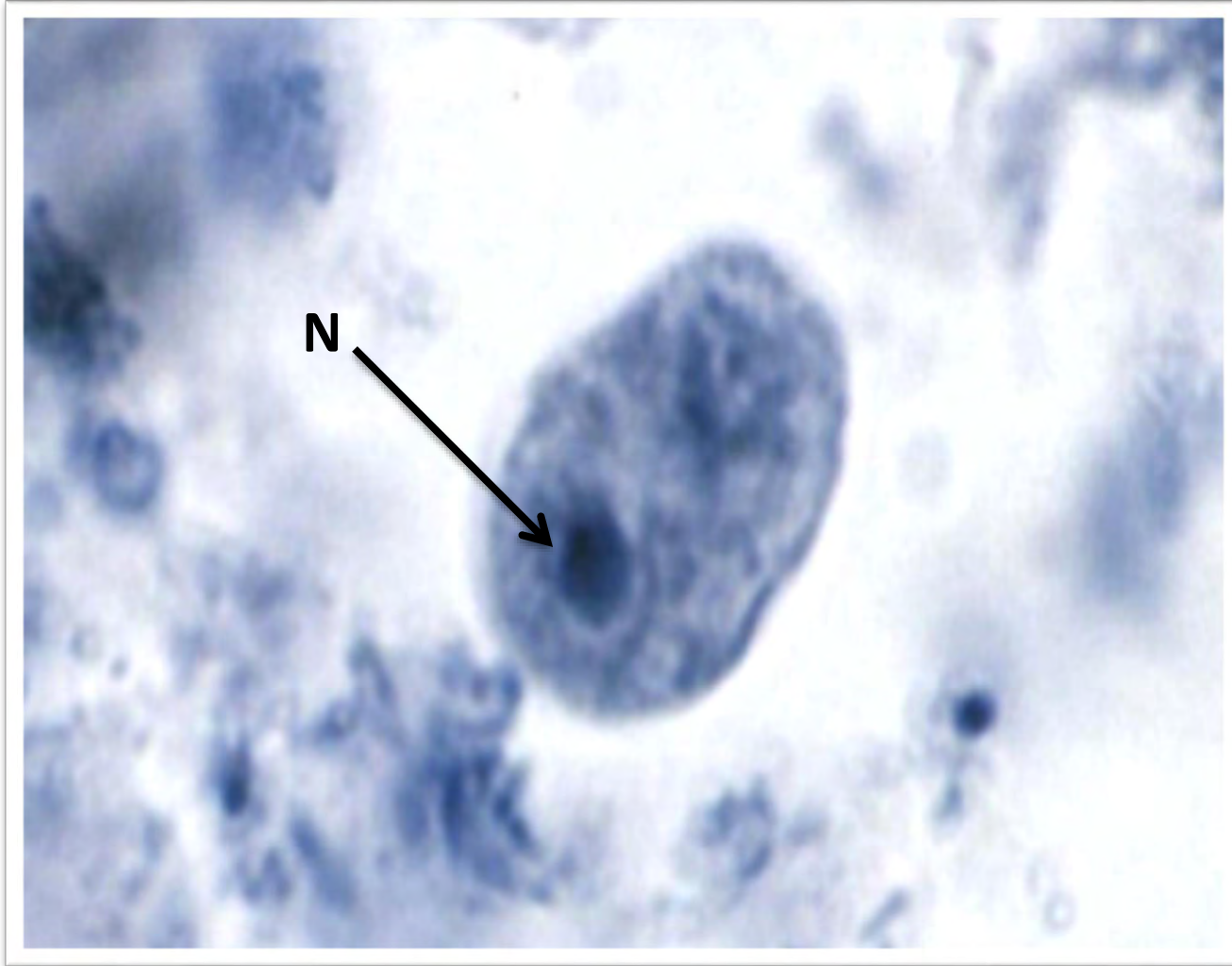
Endolimax nanus-forme végétative-



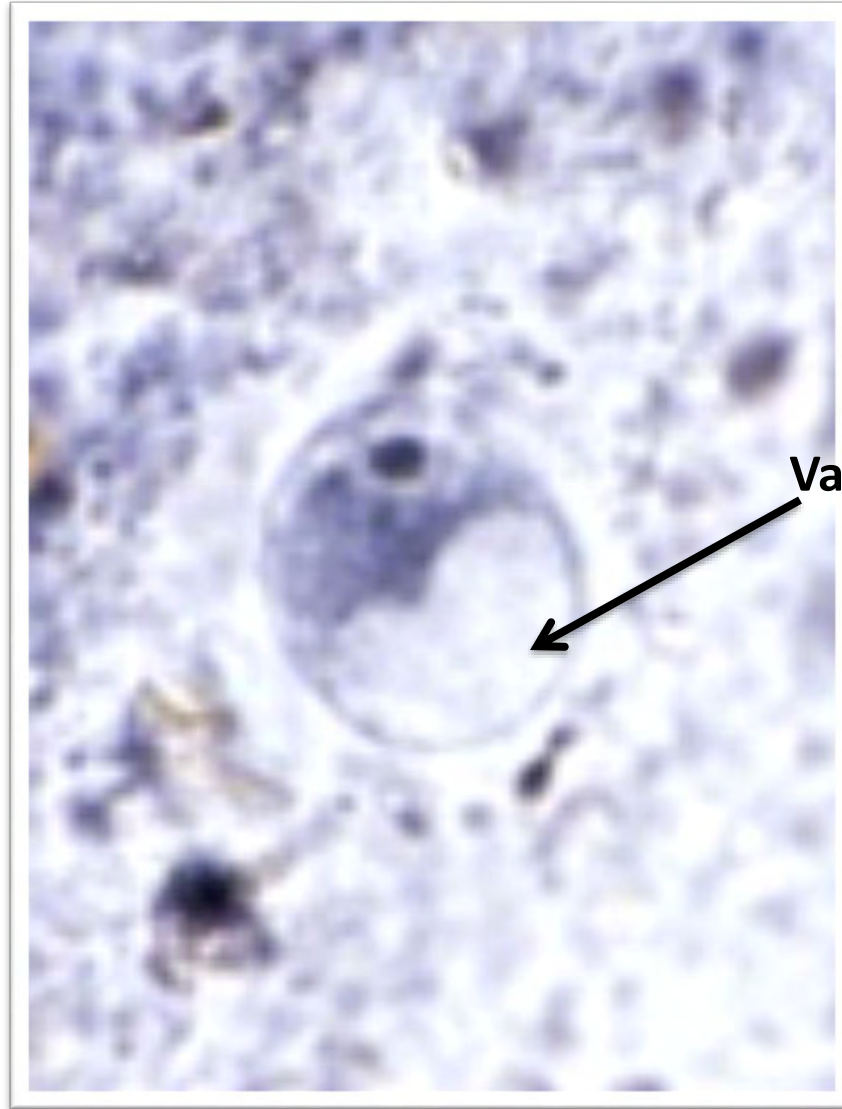
Forme kystique



Pseudolimax butschlii -forme végétative -



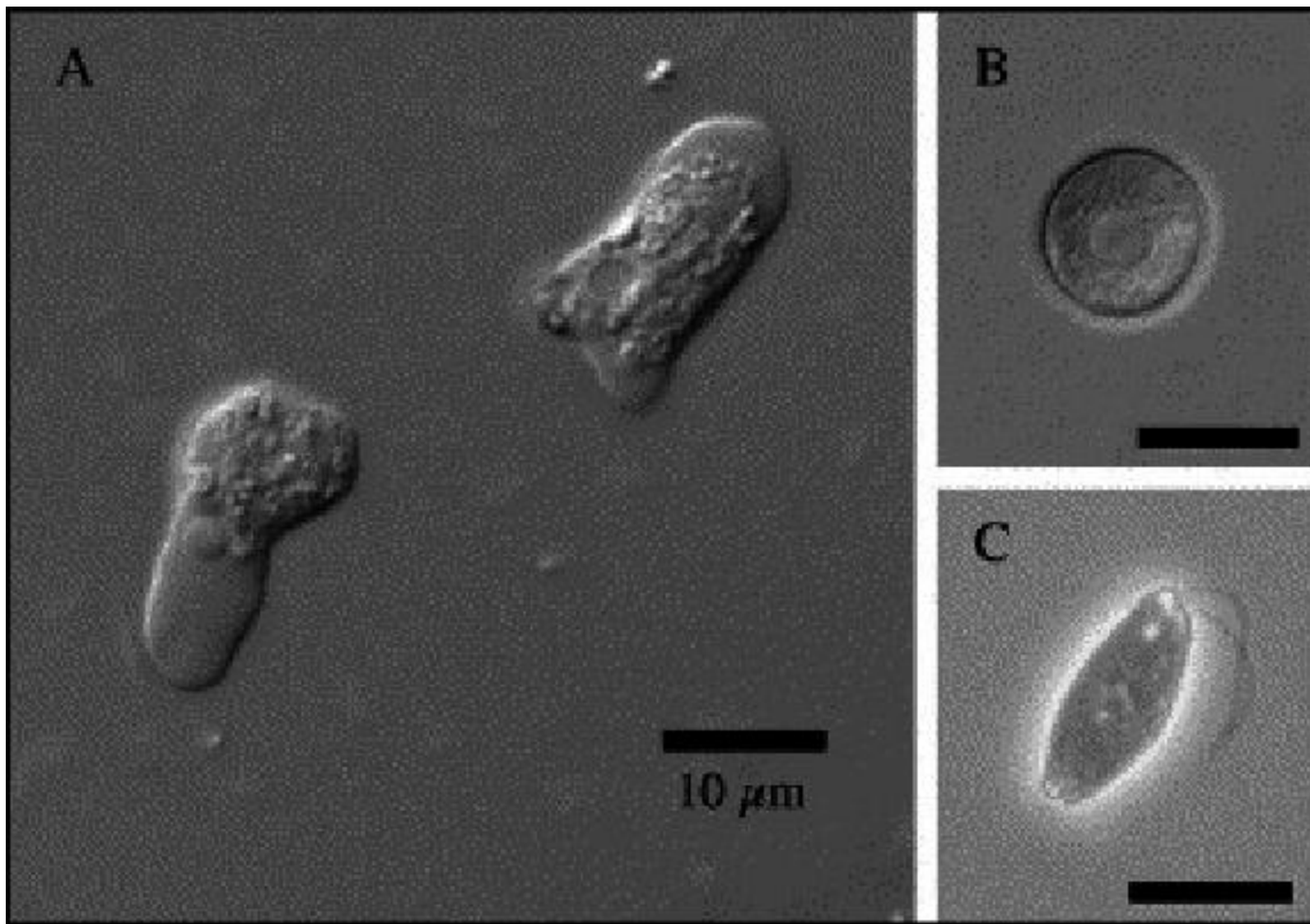
Forme kystique

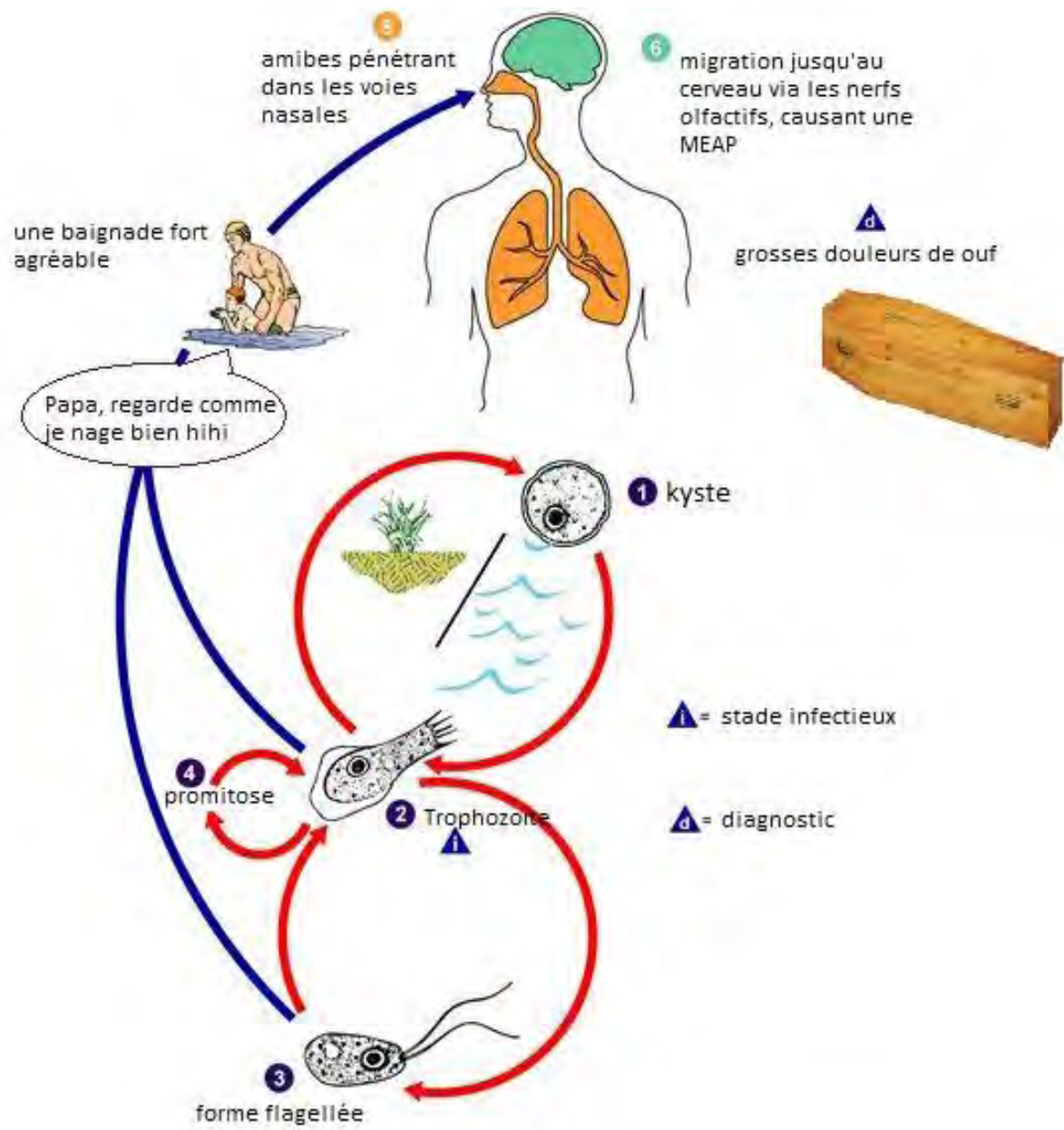


Vacuole

Amibes libres

Naegleria fowleri





Cycle évolutif de *Naegleria fowleri*

Acanthamoeba



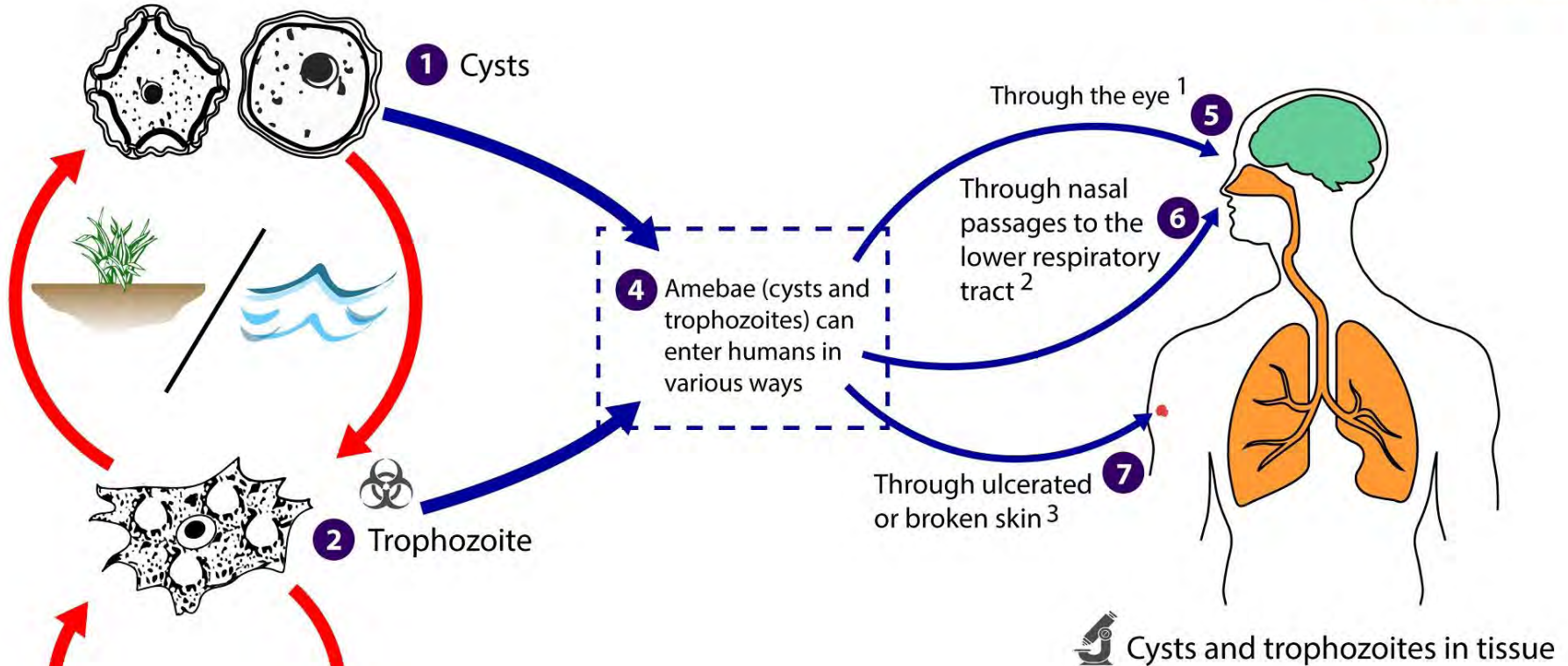
Trophozoite

a



Kyste

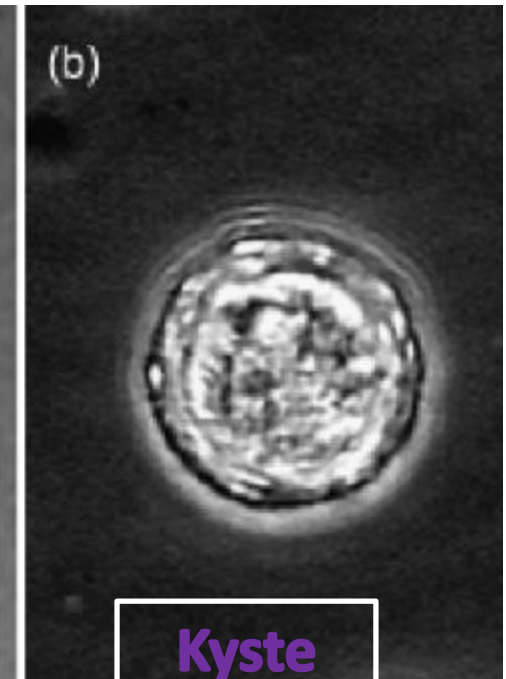
b



Infective stage
 Diagnostic stage

- ¹ Results in severe keratitis of the eye. **8**
- ² Results in granulomatous amebic encephalitis (GAE) and/or disseminated disease **10** in individuals with compromised immune systems. **9**
- ³ Results granulomatous amebic encephalitis (GAE), disseminated disease **10** or skin lesions **11** in individuals with compromised immune systems.

Balamuthia mandrillaris



50 à 60 μm .

1 noyau avec un gros caryosome central parfois un noyau double

Plusieurs vacuoles contractiles.

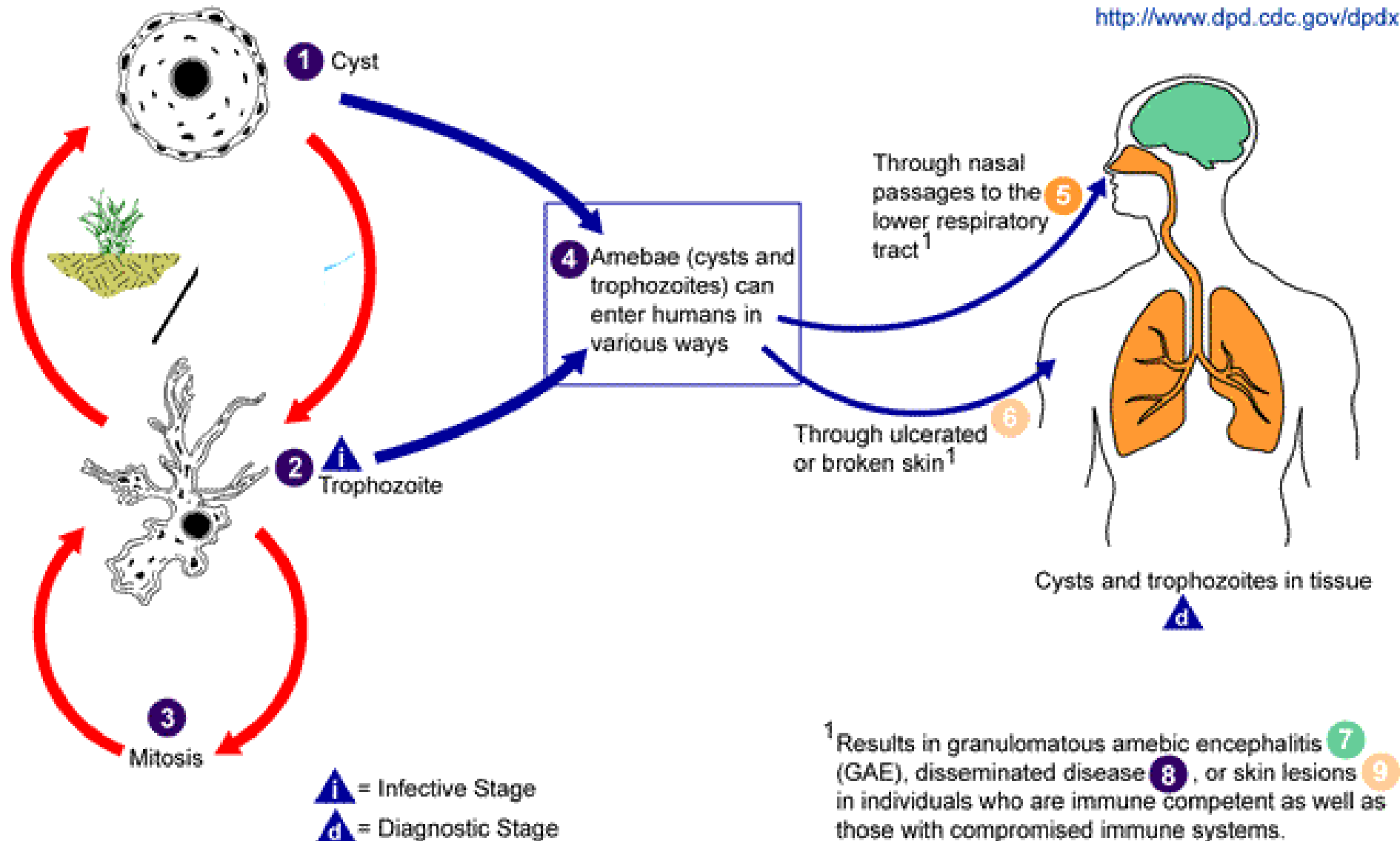
15 à 30 μm

Arrondi

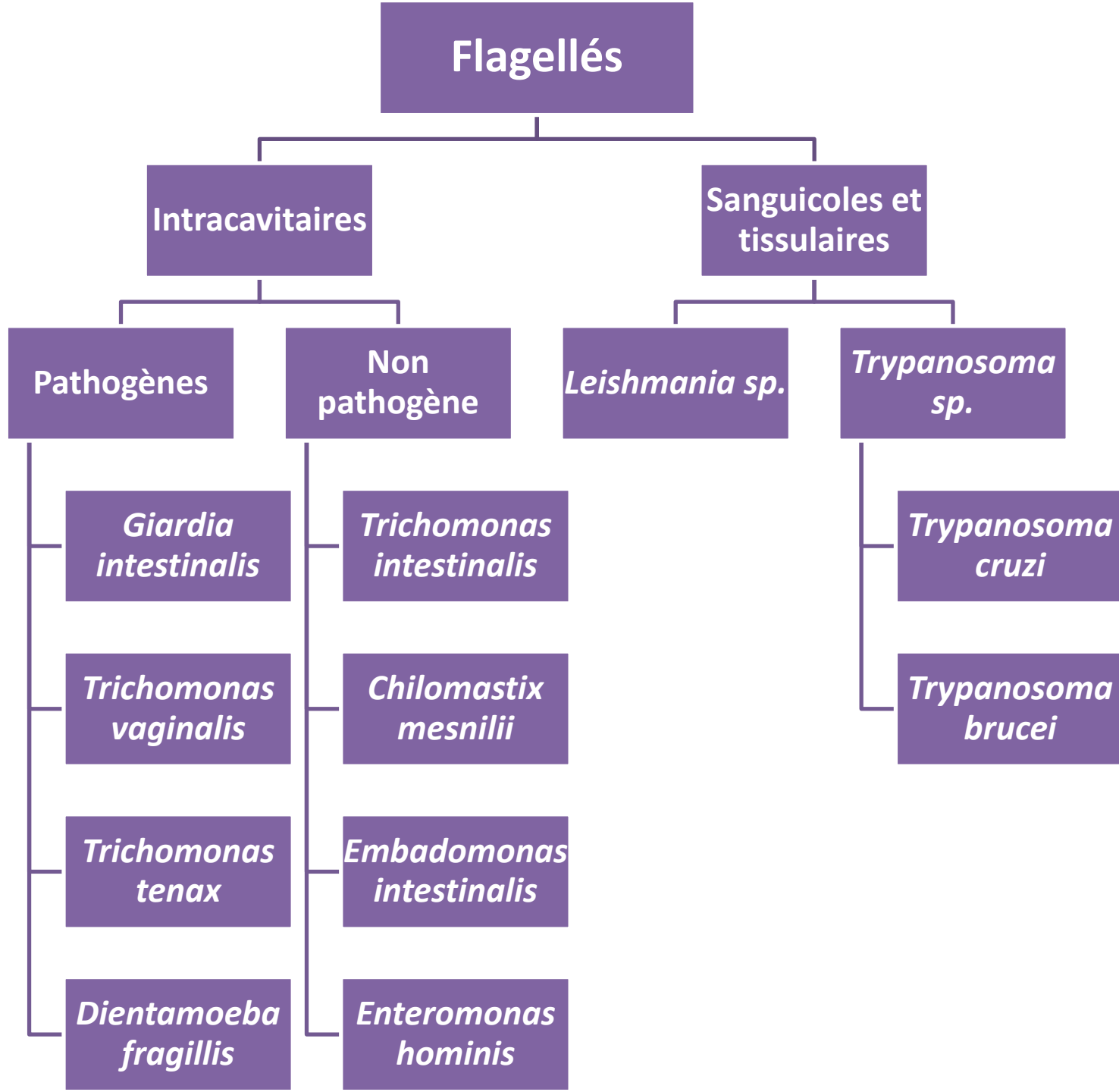
Double paroi : Externe ou l'exokyste, épaisse, irrégulière, ondulée et Interne ou l'endokyste, bien arrondi.

En microscopie électronique : une 3^{ème} membrane « le mésokyste ».

Balamuthia mandrillaris

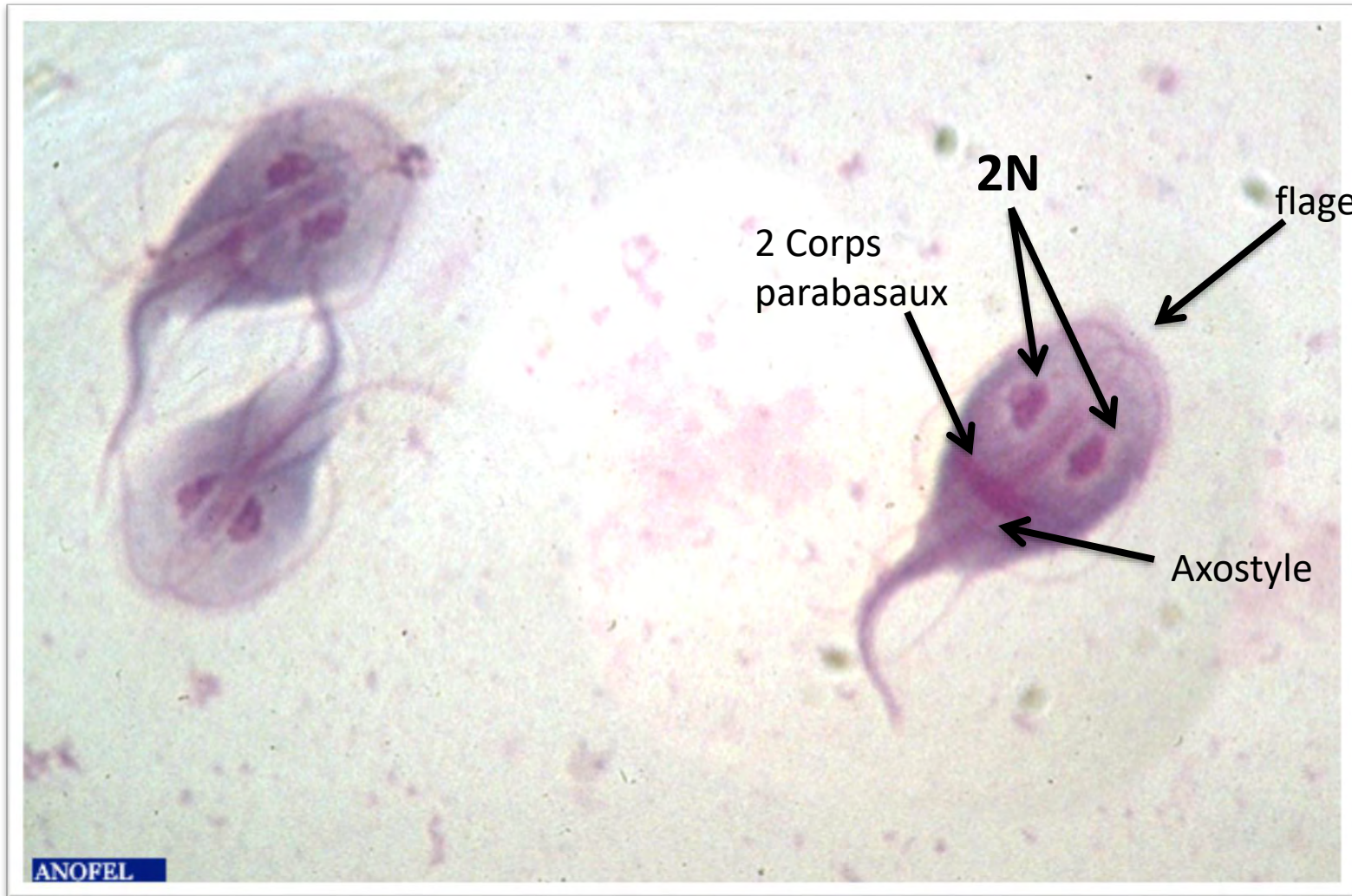


LES FLAGELLÉS



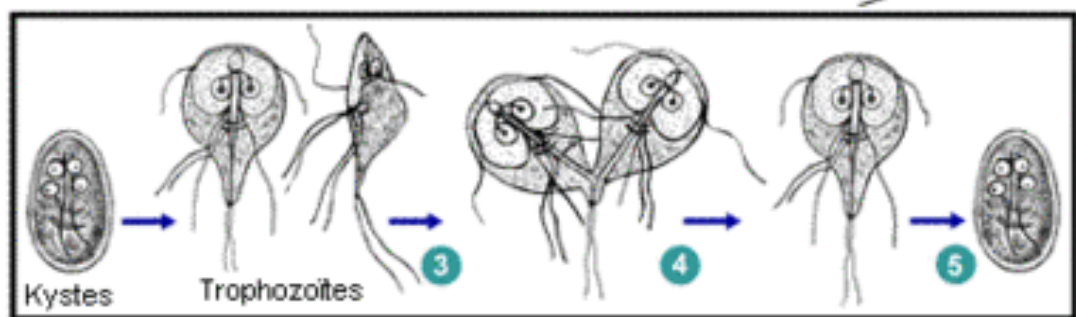
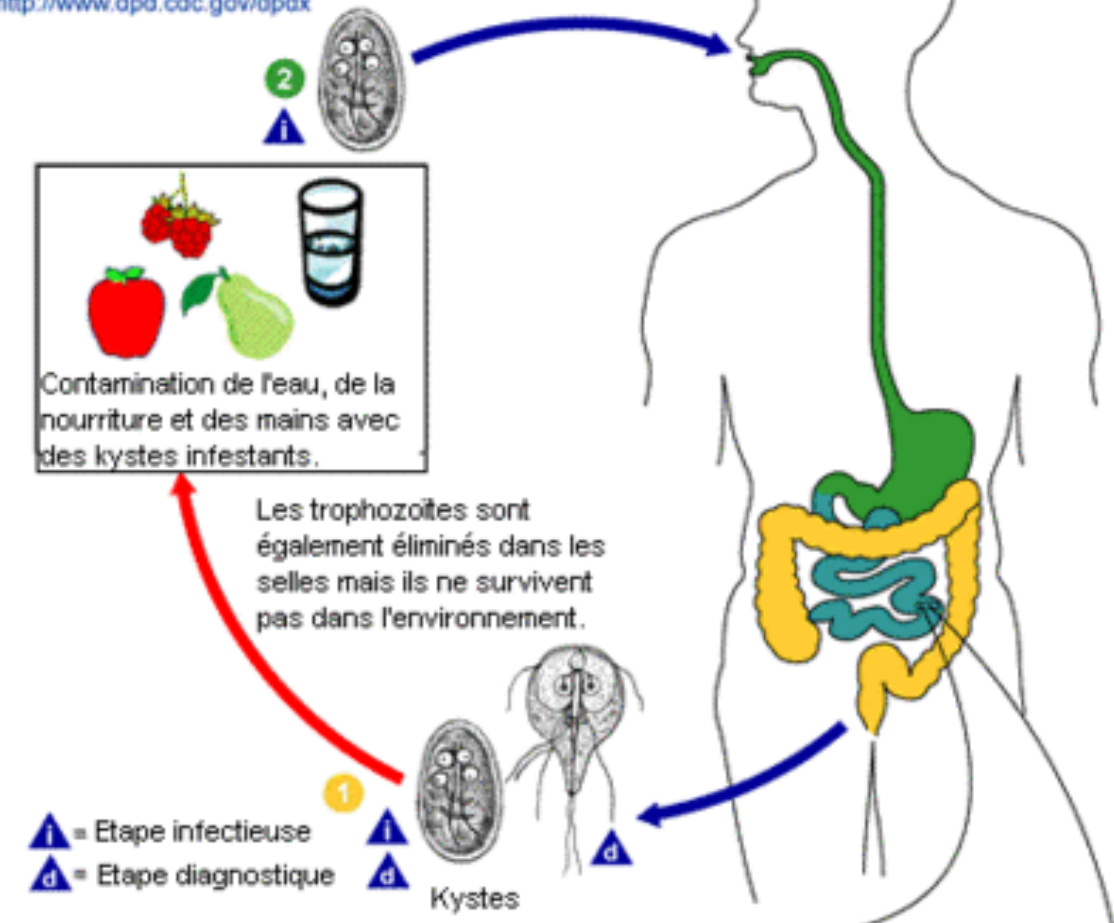
LES FLAGELLÉS INTRACAVITAIRES

Giardia intestinalis -forme végétative-



Forme kystique



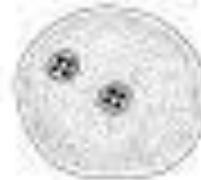
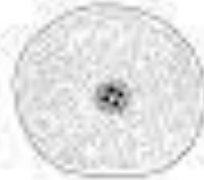


Dientamoeba fragilis

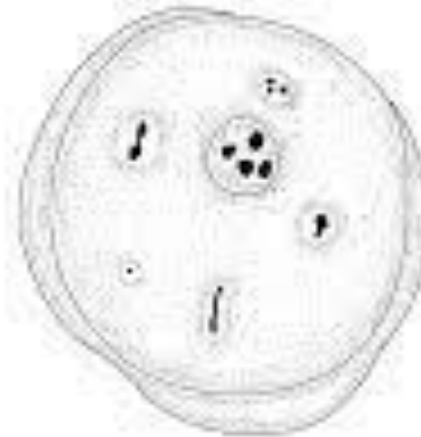
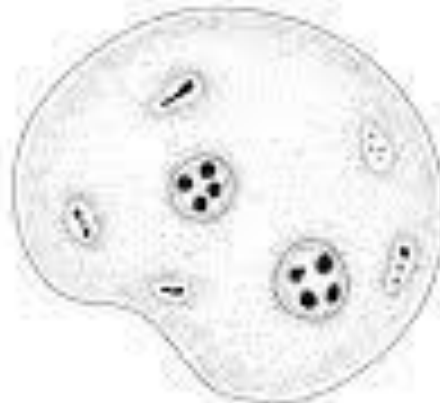
Cyst



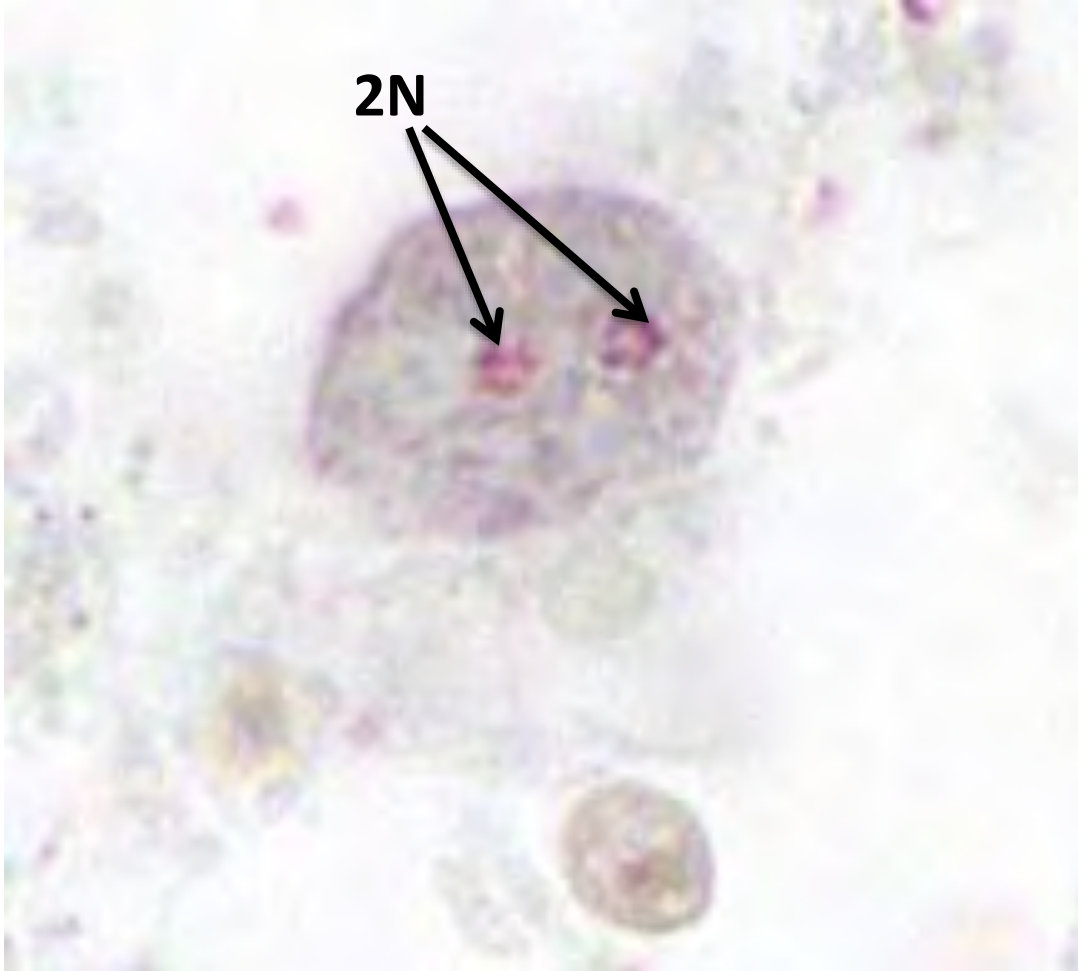
Precyst



Trophozoite



Dientamoeba fragilis –trophozoite-



Dientamoeba fragilis –kyste-



Trophozoites dans le colon de l'homme

Transmission: féco-orale, crudités ou leau souillés
(n'est pas encore confirmé).

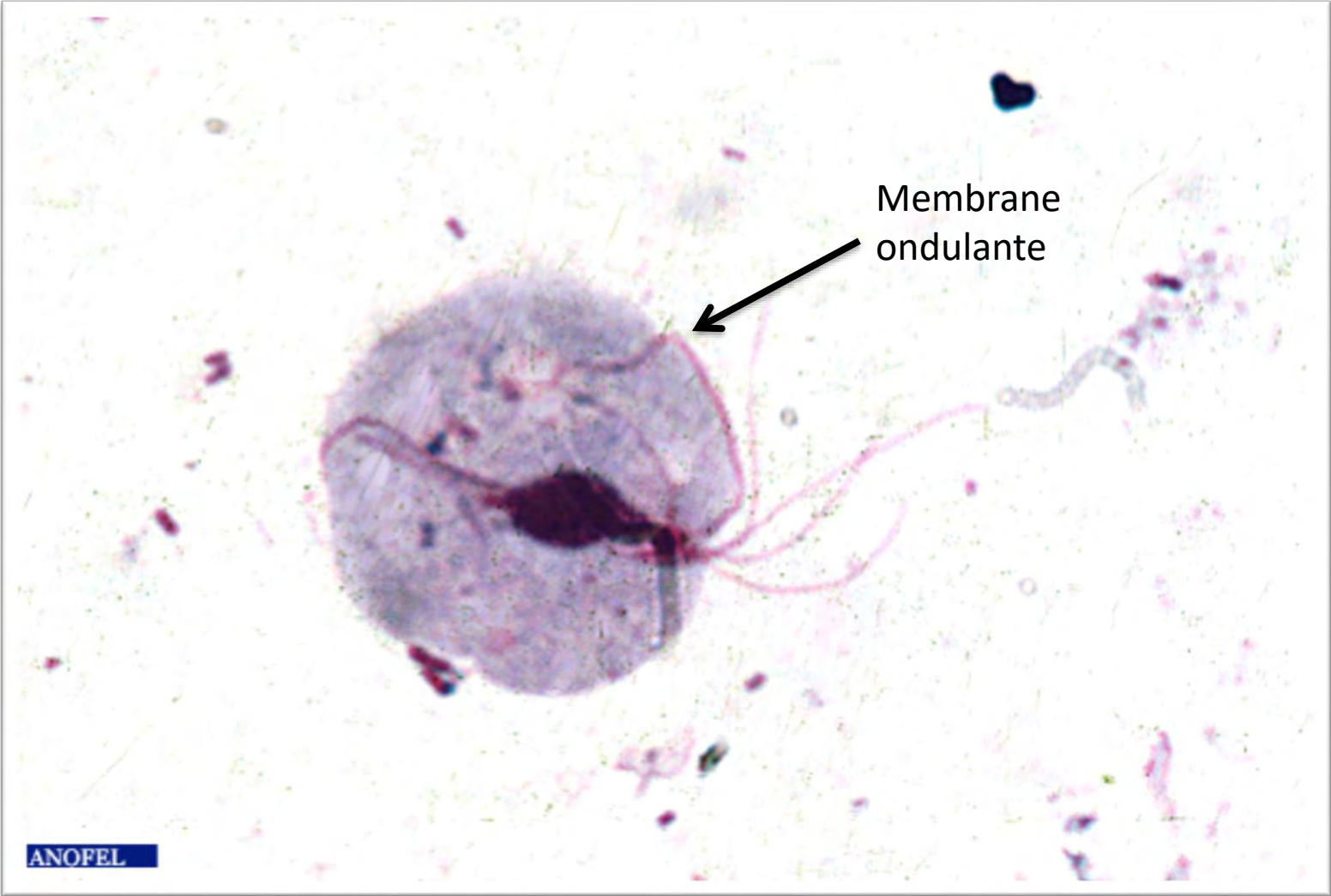
Kystes et prékystes dans les selles

Ingestion de kyste et/ou prékyste par l'homme

s et prékystes survient dans les selles et
contamines l'eau et les aliments

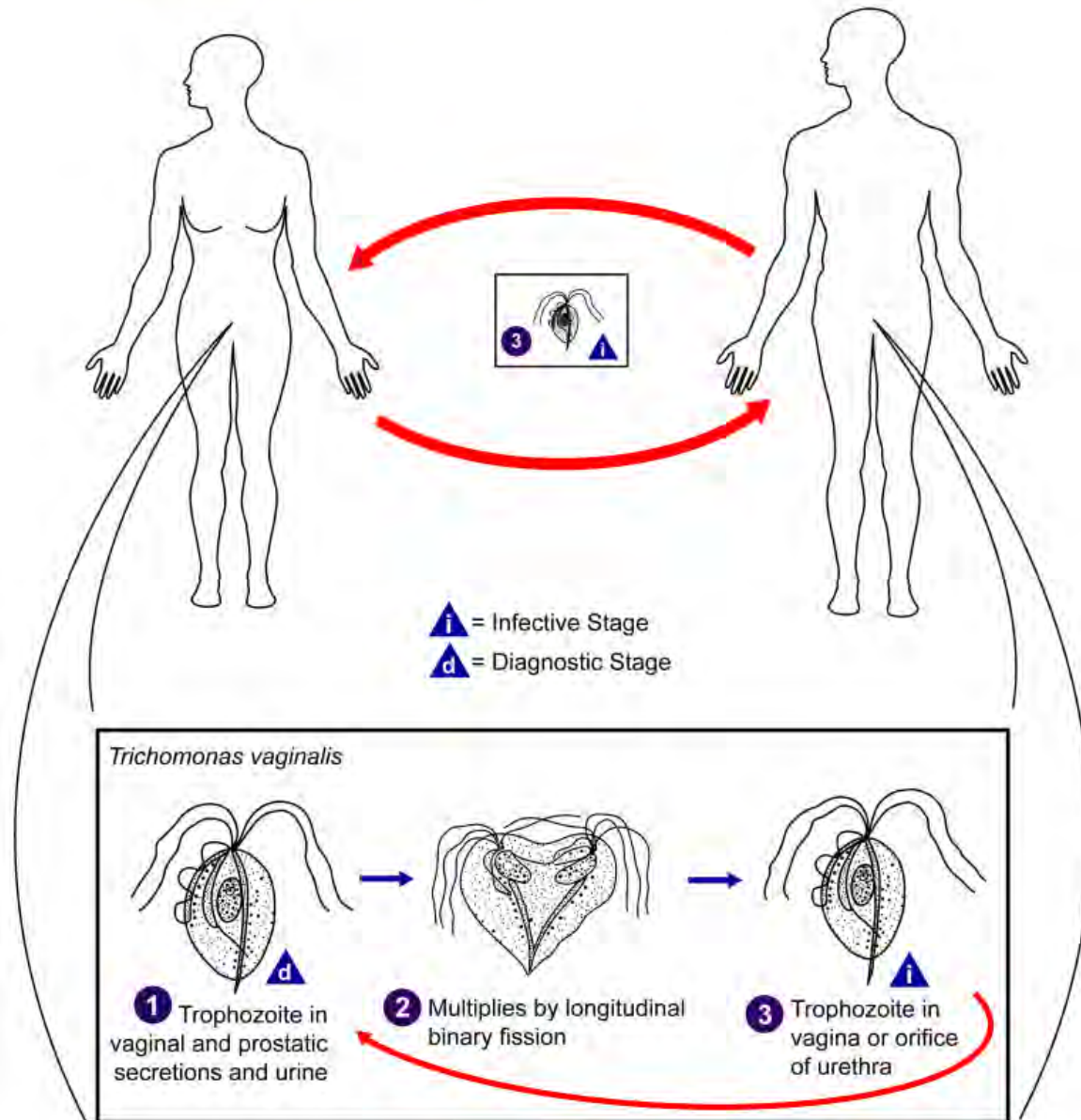
Ils peuvent être vehiculer vis les oeufs de l'*E. vermicularis*

Trichomonas vaginalis –trophozoite-



Trichomoniasis

(Trichomonas vaginalis)

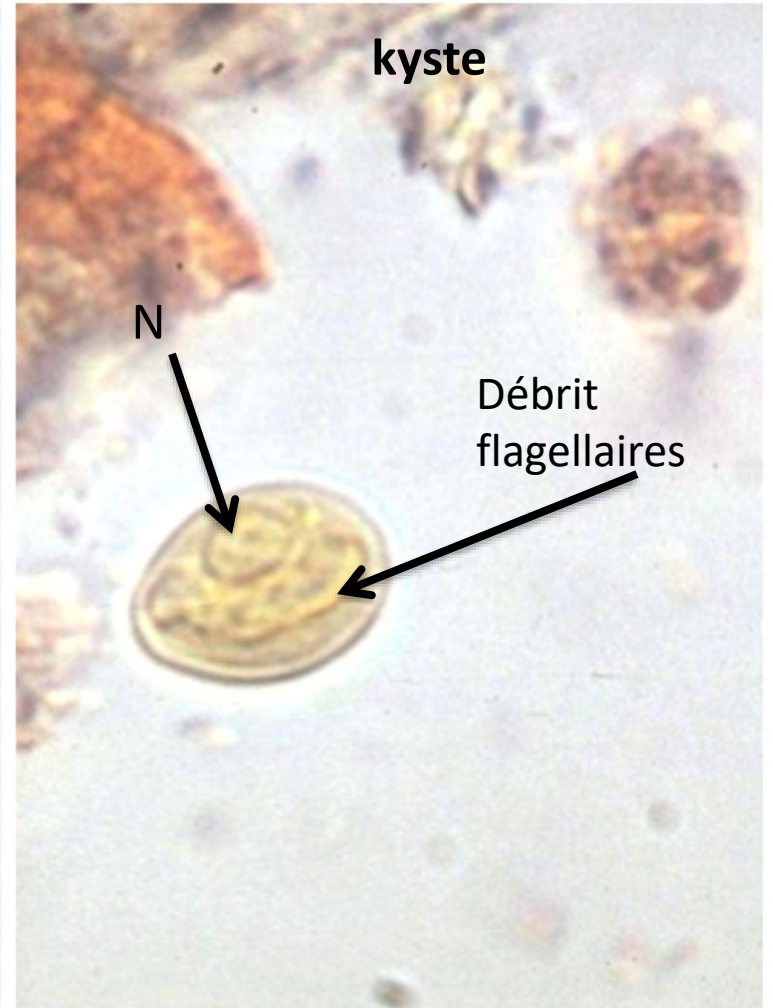


Chilomastix mesnili

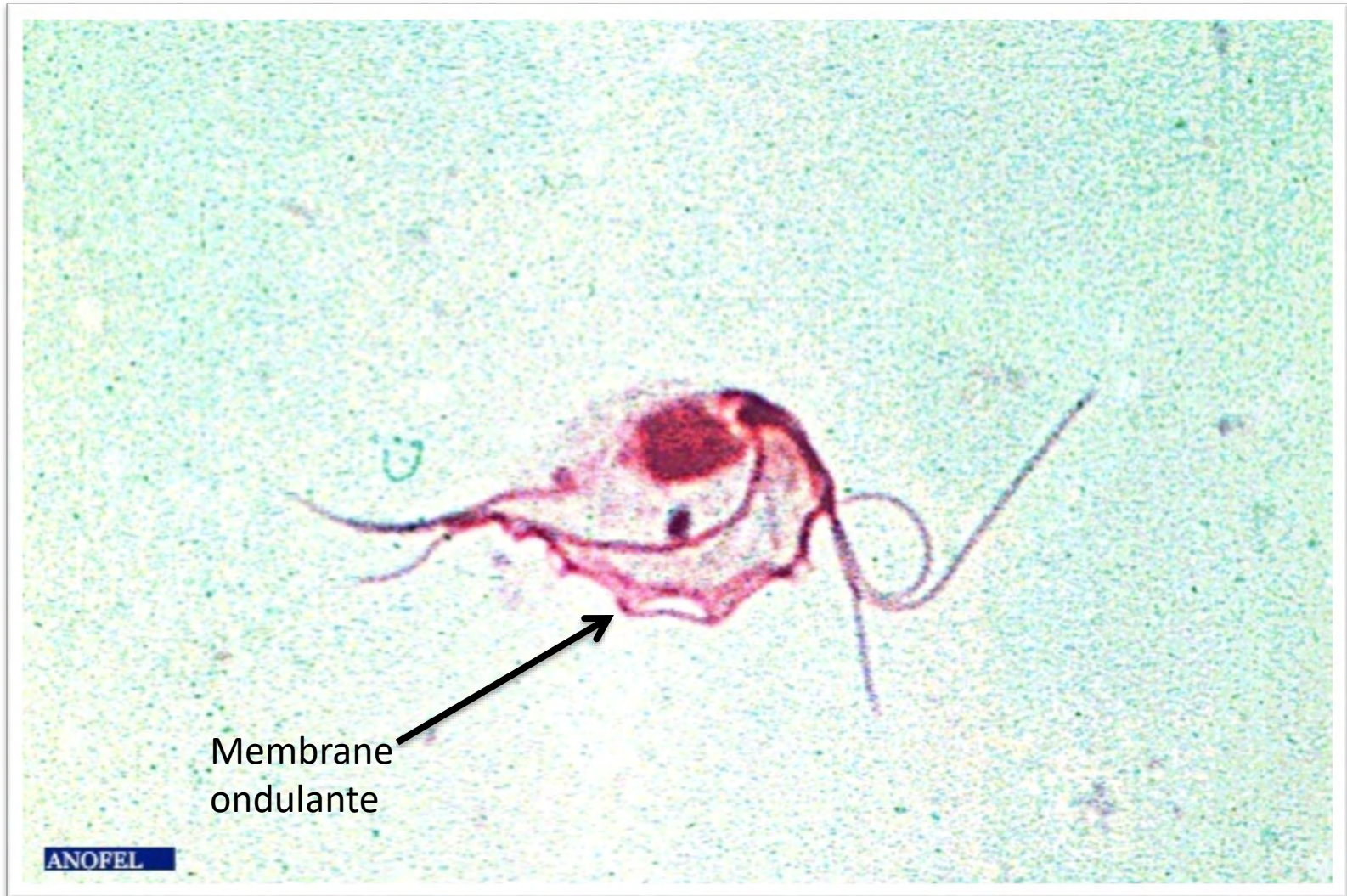
Forme végétative



kyste

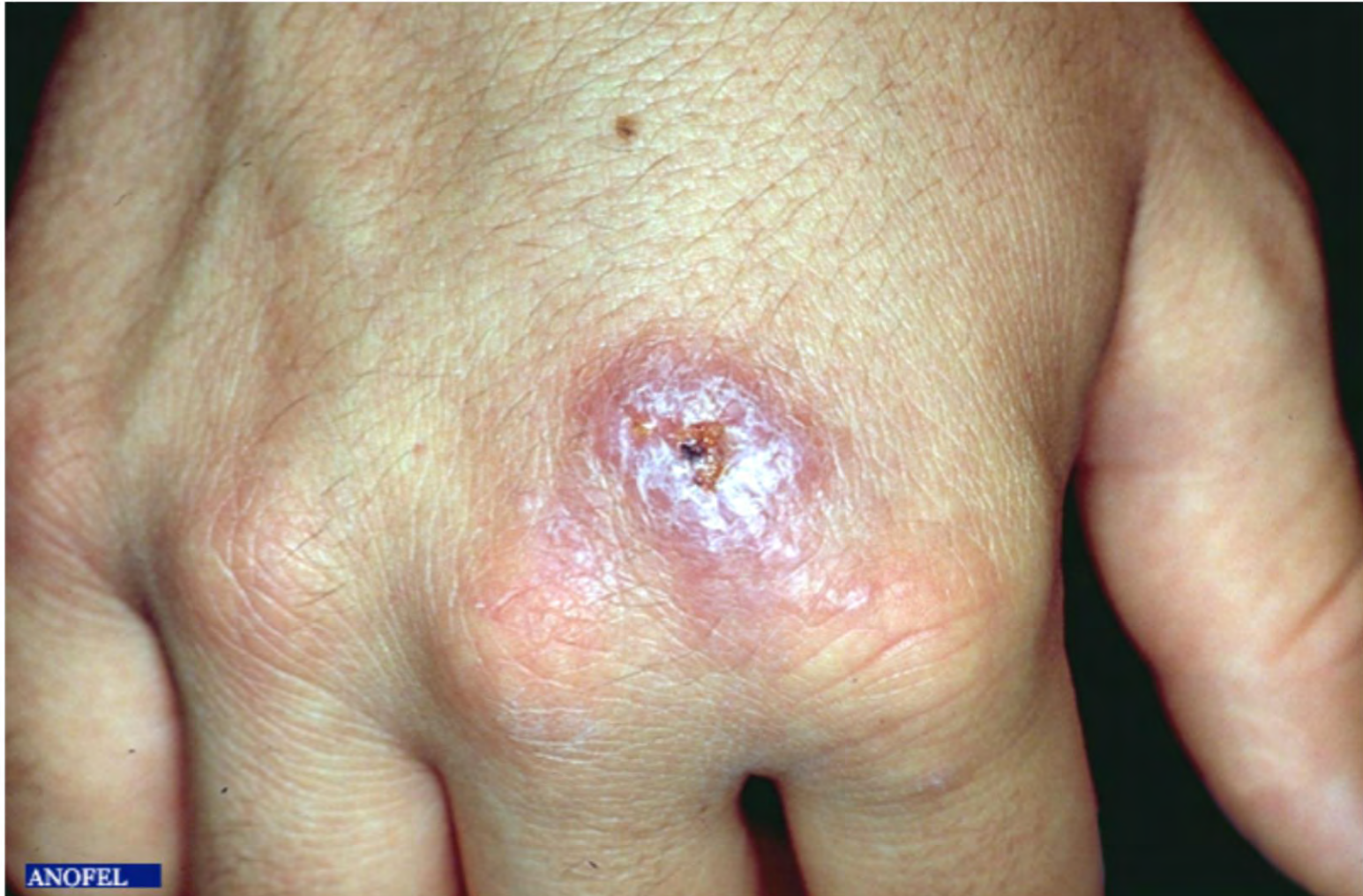


Trichomonas intestinalis –trophozoite-



LES FLAGELLÉS SANGUICOLES ET TISSULAIRES

Leishmaniose cutanée



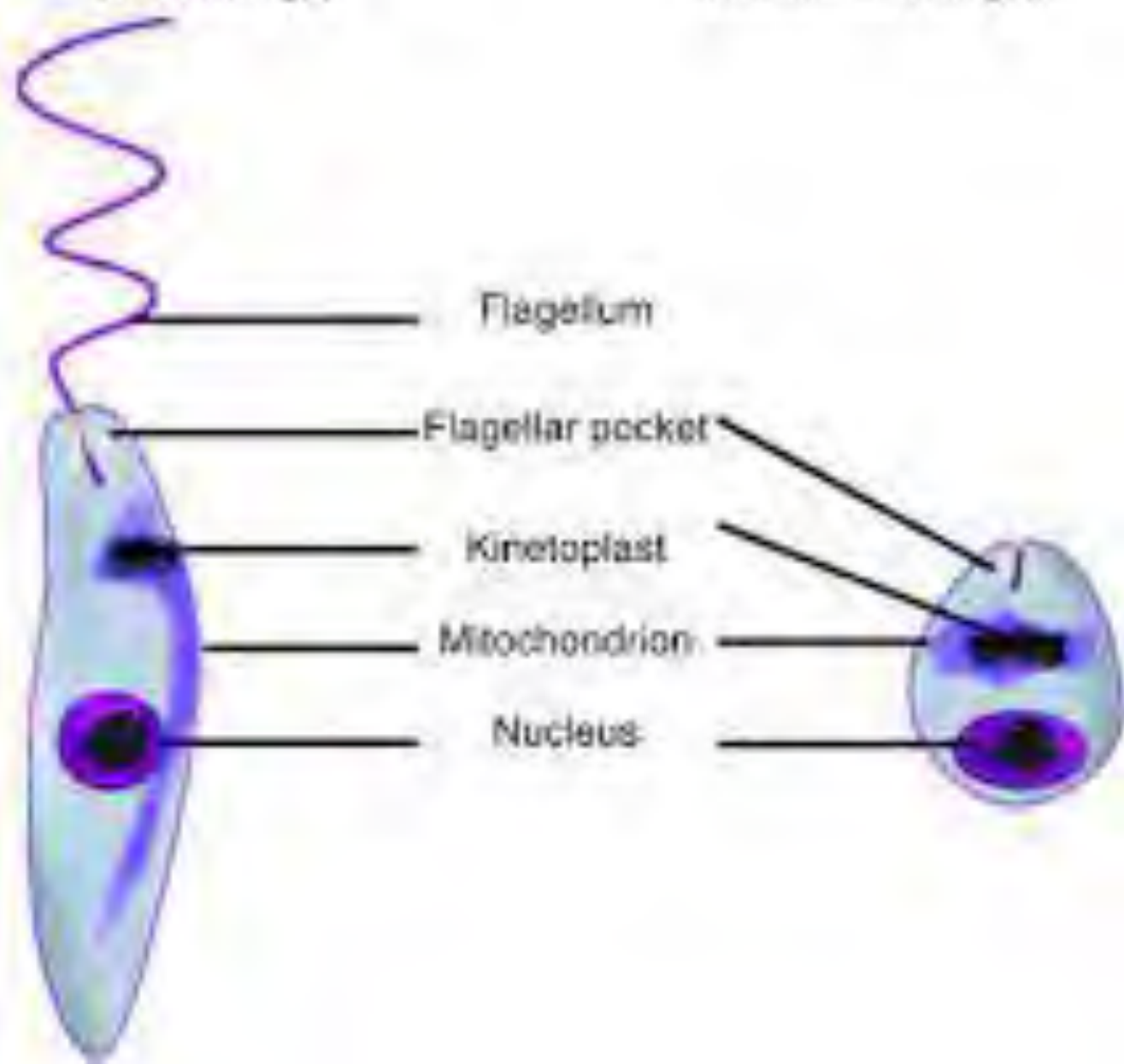
Leishmaniose viscérale



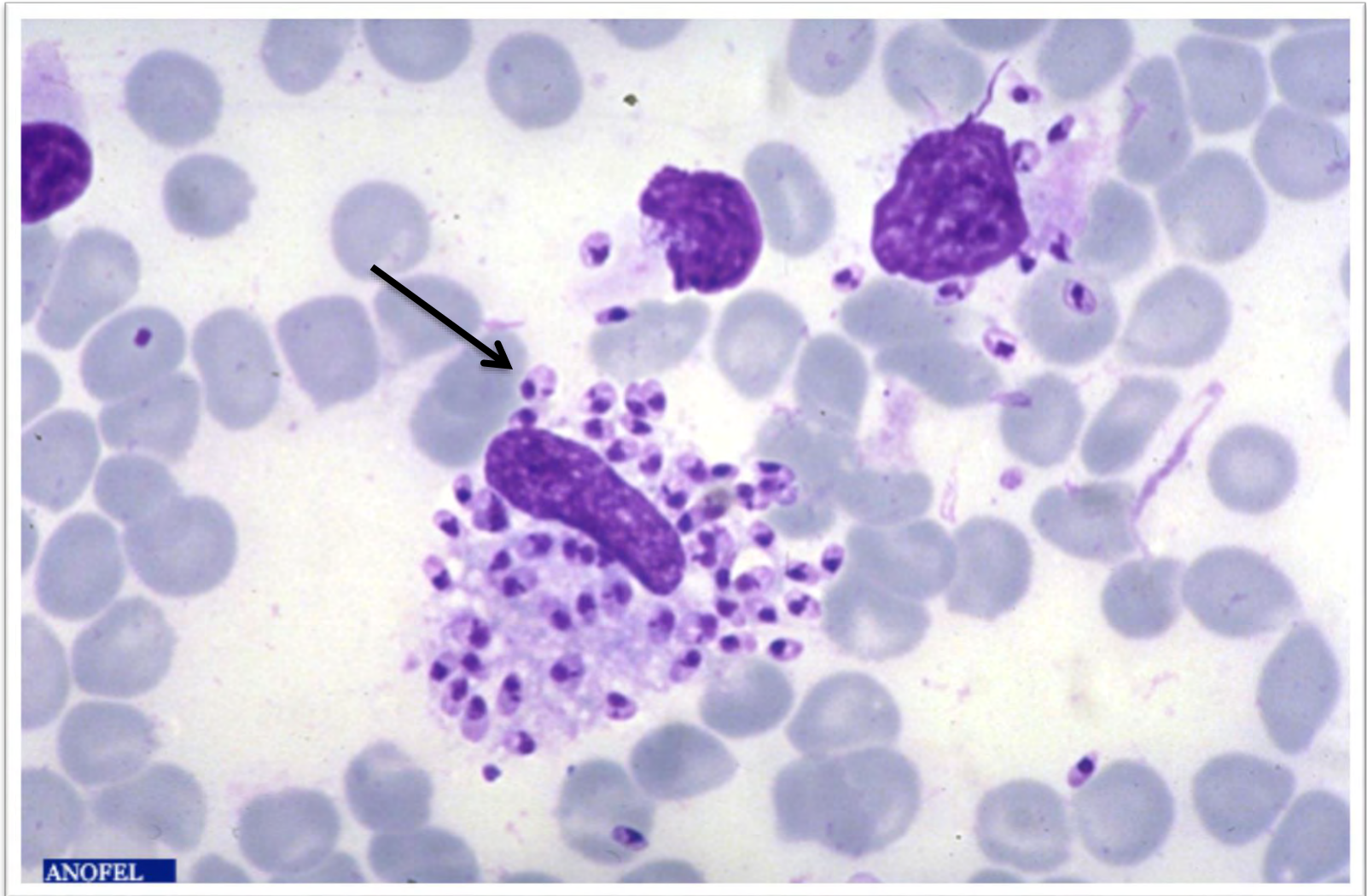
Leishmania spp.

Procyclic promastigote
(insect stage)

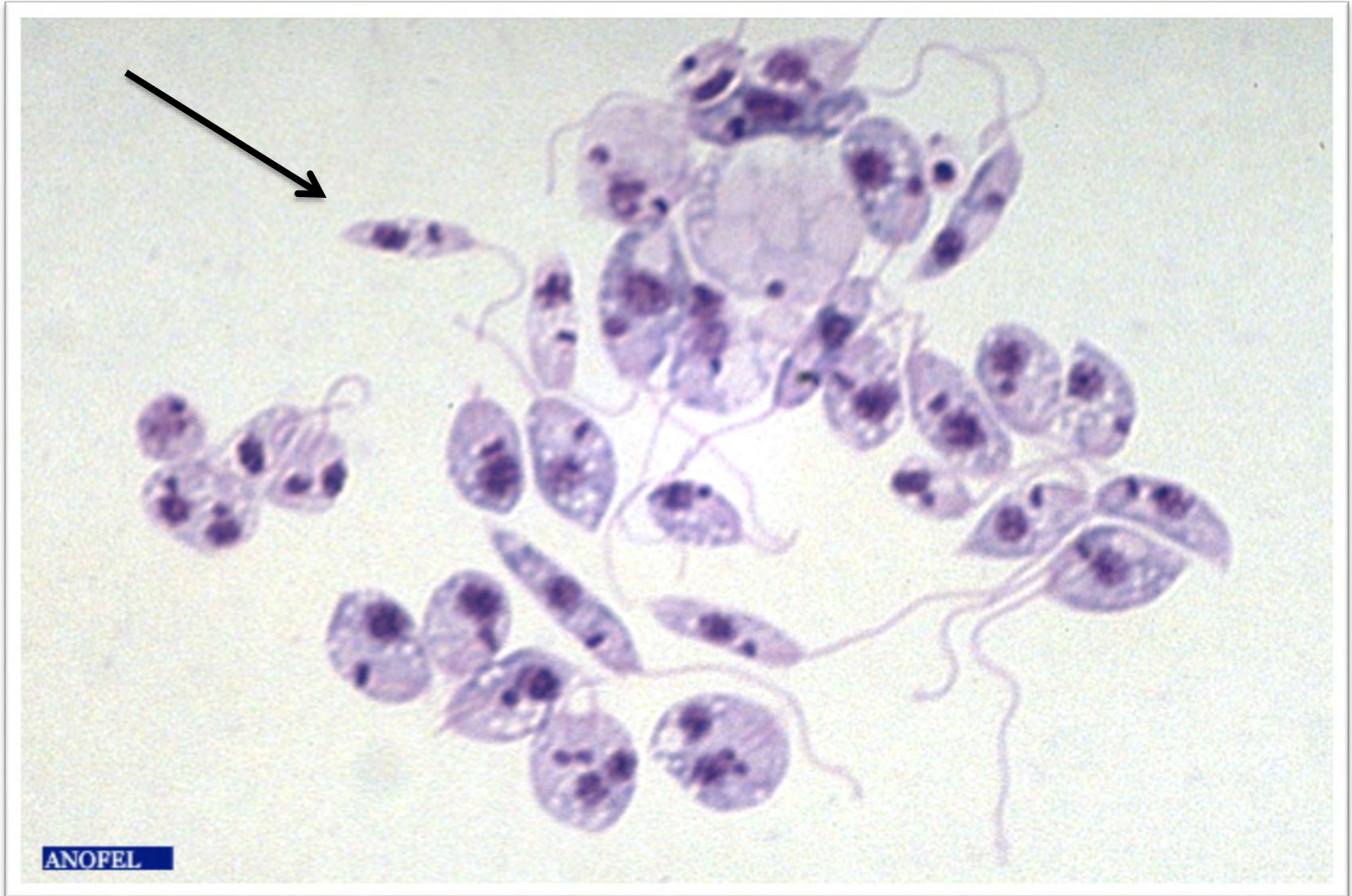
Amastigote
(mammalian stage)



Leishmania -forme amastigote-



Leishmania -forme promastigote-



Phlébotome-femelle-



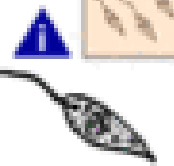
Etape du phlébotome

Division dans l'intestin et migration vers les trompes.

8



1 Le phlébotome prend un repas de sang (injection de promastigotes dans la peau)



Etape humaine

2 Les promastigotes sont phagocytés par les macrophages.

3



Les promastigotes se transforment en amastigotes dans les macrophages.

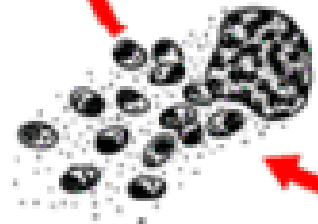
d

7 Les amastigotes se transforment au stade promastigotes dans l'intestin.

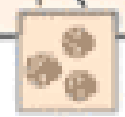


6

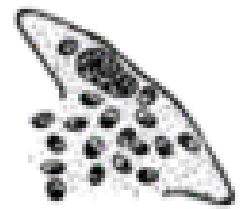
Ingestion d'une cellule parasitée



Le phlébotome prend un repas de sang.



4



Les amastigotes se multiplient dans les cellules (y compris les macrophages) de différents tissus.

5 Ingestion de macrophages infectés par des amastigotes

i = Infective Stage
d = Diagnostic Stage

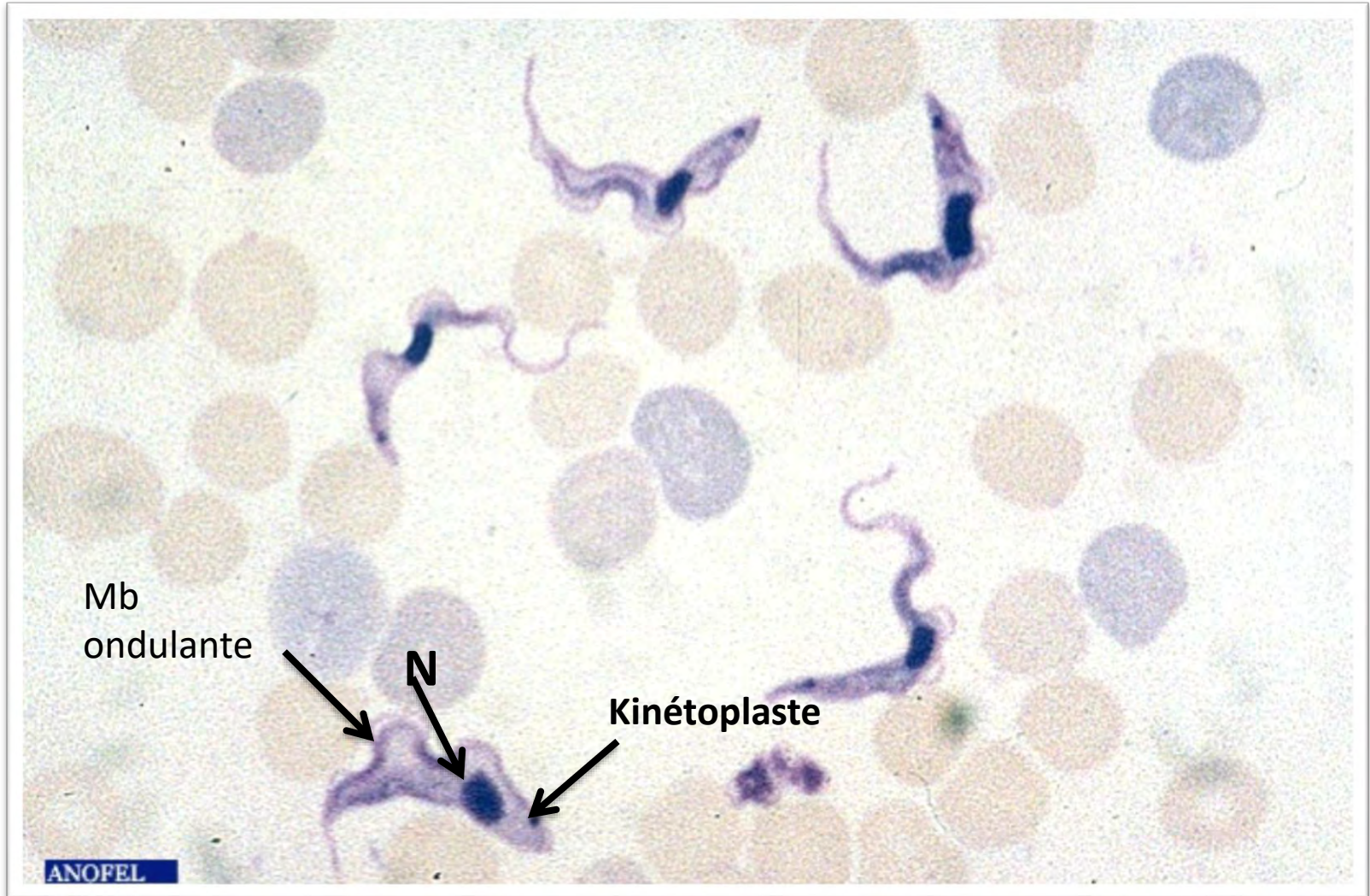
Leishmaniose

d



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

Trypanosoma brucei -forme trypomastigote-



Glossine



Etape de la mouche tsé tsé

Les épimastigotes se multiplient dans les glandes salivaires et se transforment en promastigotes métacycliques.



La mouche tsé tsé prend un repas de sang (injection de trypanosomes métacycliques)



Etape humaine

Les trypanosomes métacycliques injectés se transforment en trypanosomes circulants transportés dans d'autres sites



Les trypanosomes procycliques quittent l'intestin et se transforment en épimastigotes.



La mouche tsé tsé prend un repas de sang



Les trypanosomes se multiplient par scissiparité dans différents fluides biologiques, sang, lymphe, LCR.



Les trypanosomes circulants se transforment en trypanosomes procycliques dans l'intestin de la mouche tsé tsé. Les trypanosomes procycliques se multiplient par scissiparité.



Ingestion de trypanosomes circulants

Trypanosomes dans le sang



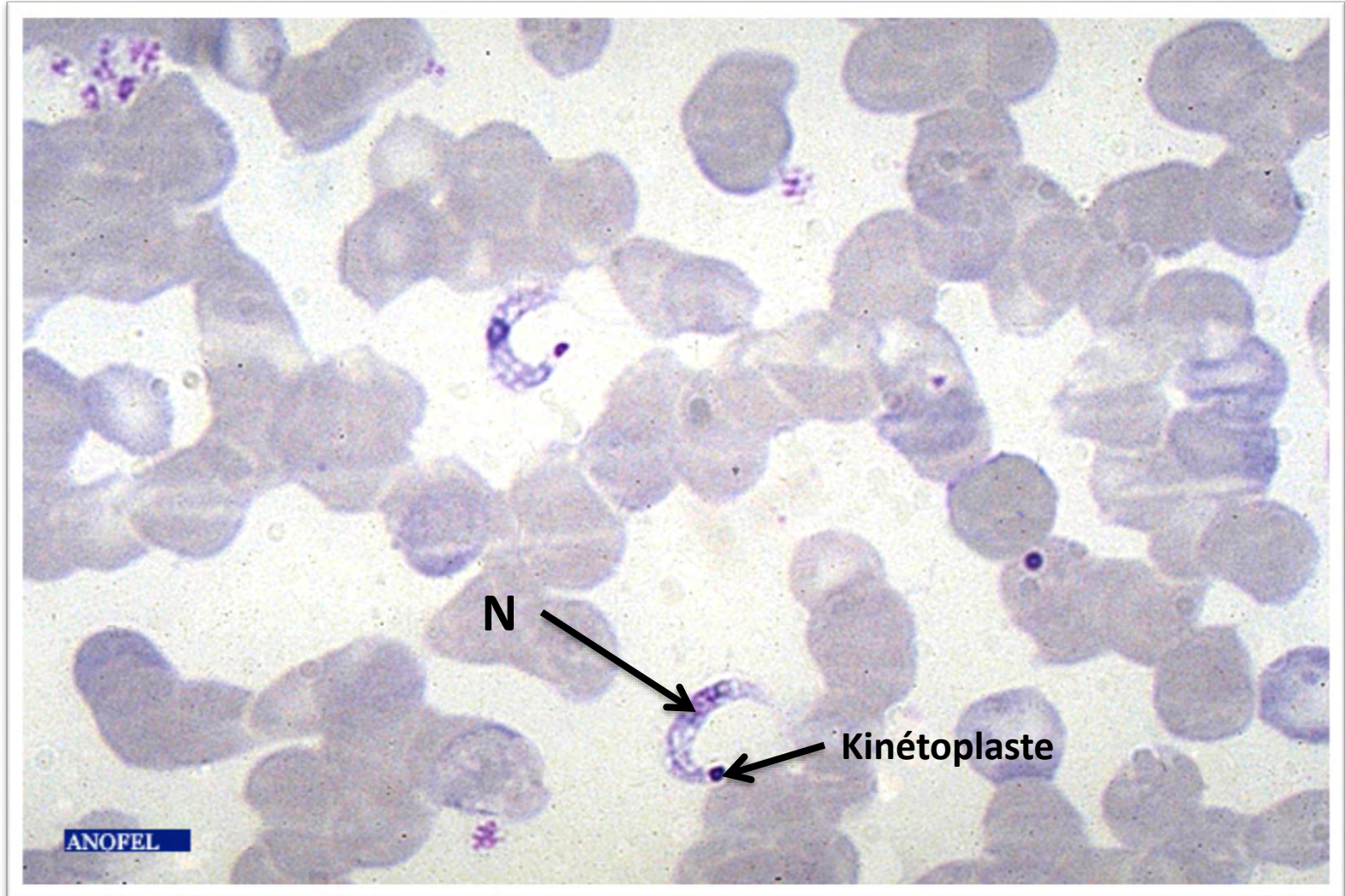
▲ = Étape infectieuse

▲d = Étape diagnostique



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

Trypanosoma cruzi -forme trypomastigote-



Réduve



ANOFEL

Chez la Réduve

Piqûre de la réduve

- 1 (Passage des trypomastigotes métacycliques dans les fèces de l'animal)



Trypomastigotes métacycliques dans l'intestin

8



Multiplication dans l'estomac

7



6 Epimastigote dans l'estomac

6



5 Piqûre d'une réduve (ingestion de trypomastigotes)

5



i = Début de l'infection

d = Diagnostic possible

Chez l'Homme

- 2 Les trypomastigotes métacycliques pénètrent dans les différentes cellules au niveau de la piqûre. À l'intérieur, ils se transforment en amastigotes



Les trypomastigotes peuvent infecter d'autres cellules et se transformer en amastigotes intracellulaires dans les nouveaux sites d'infection. Les signes cliniques peuvent résulter de ce cycle infectieux.

3 Les amastigotes se multiplient par fission binaire dans les cellules des tissus infectés



4

4 Les amastigotes intracellulaires se transforment en trypomastigotes puis sortent de la cellule et entrent dans la circulation sanguine

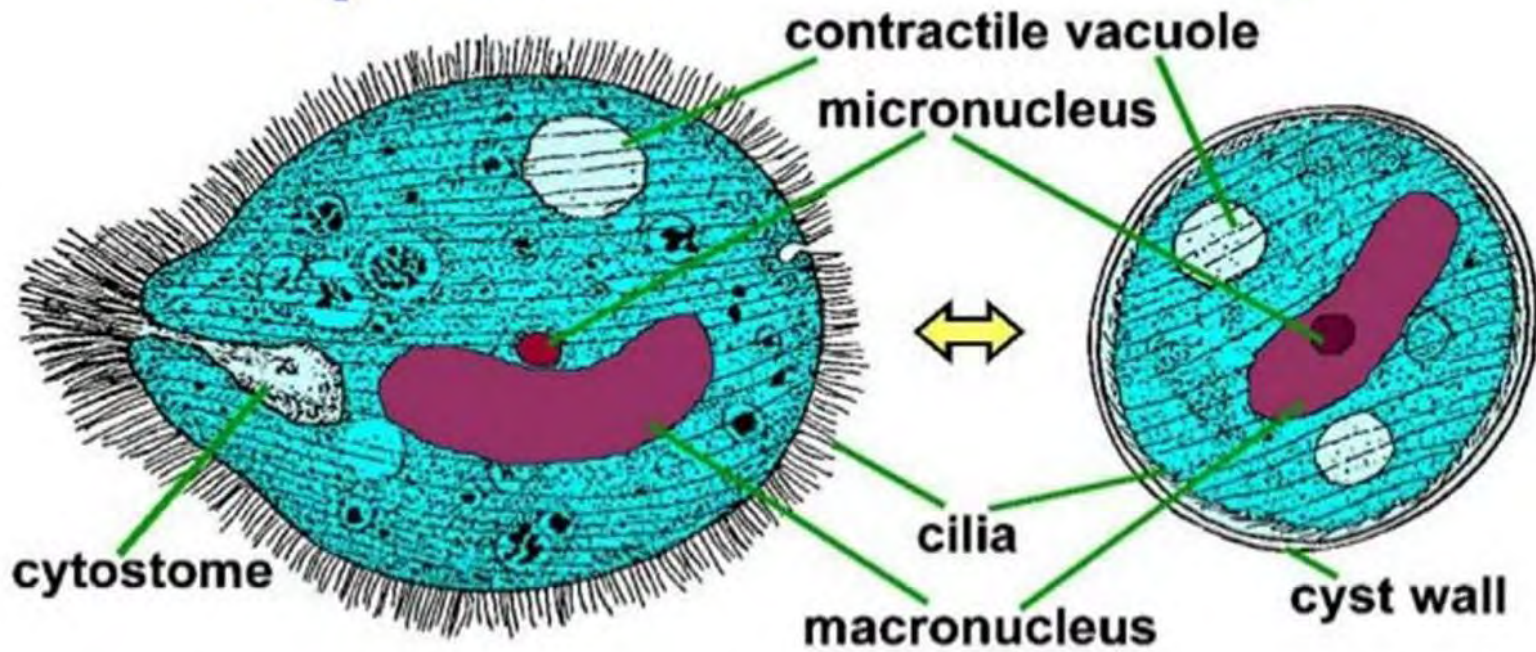
d

LES CILIÉS

Balantidium coli

trophozoite

cyst



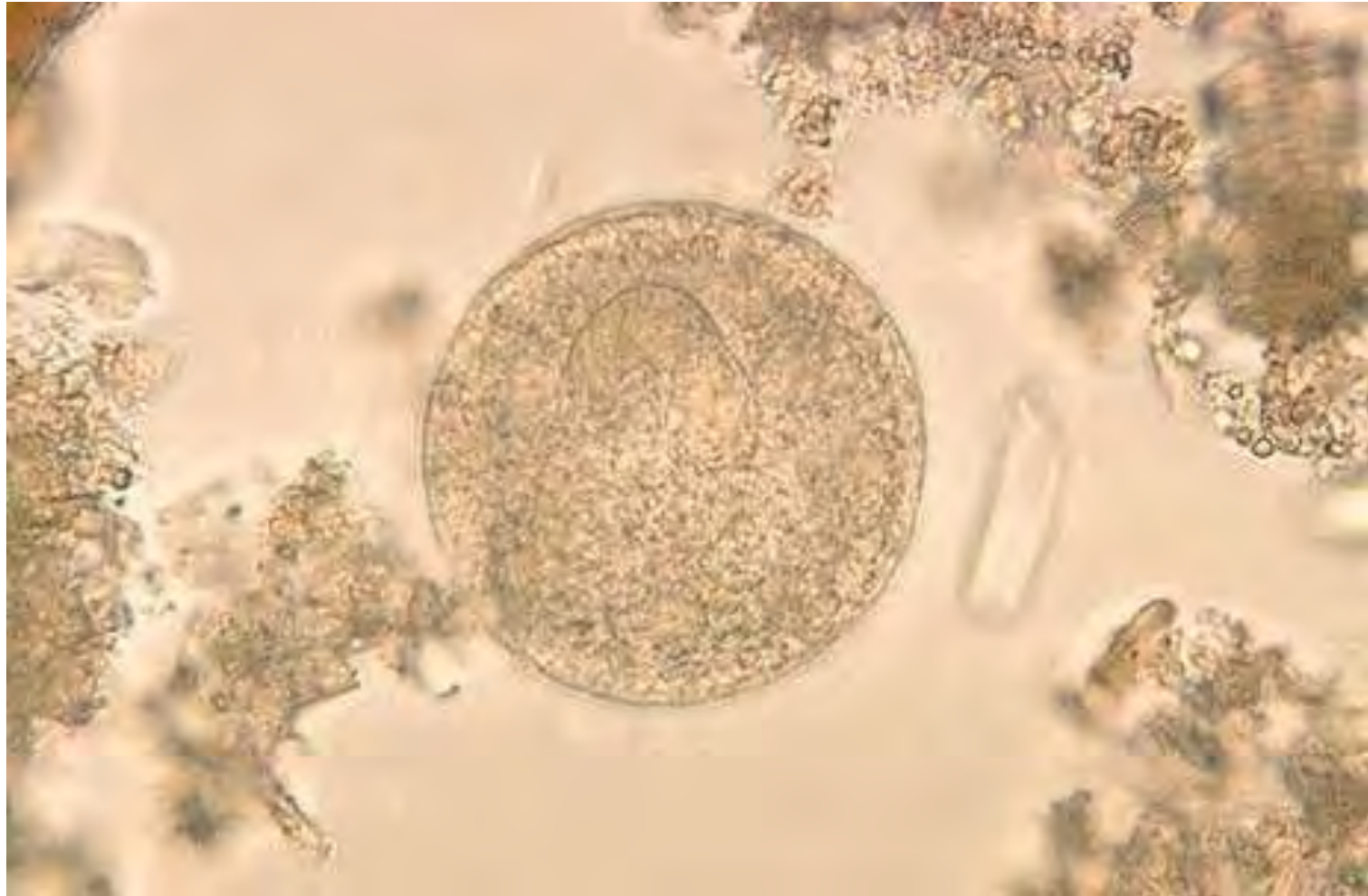
~70 x 45 μm
(up to 200 μm)

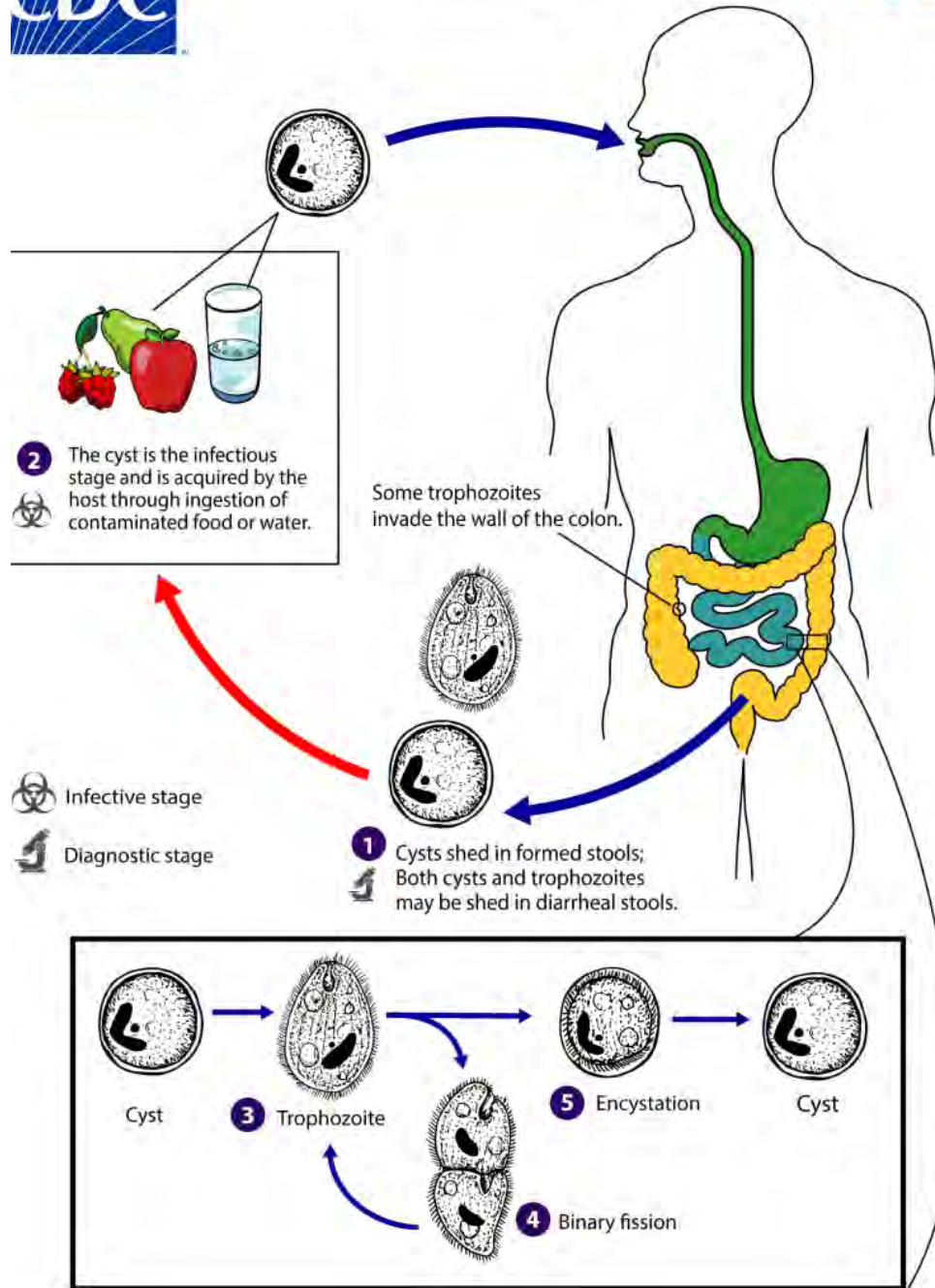
~55 μm

***Balantidium coli* –trophozoite-**



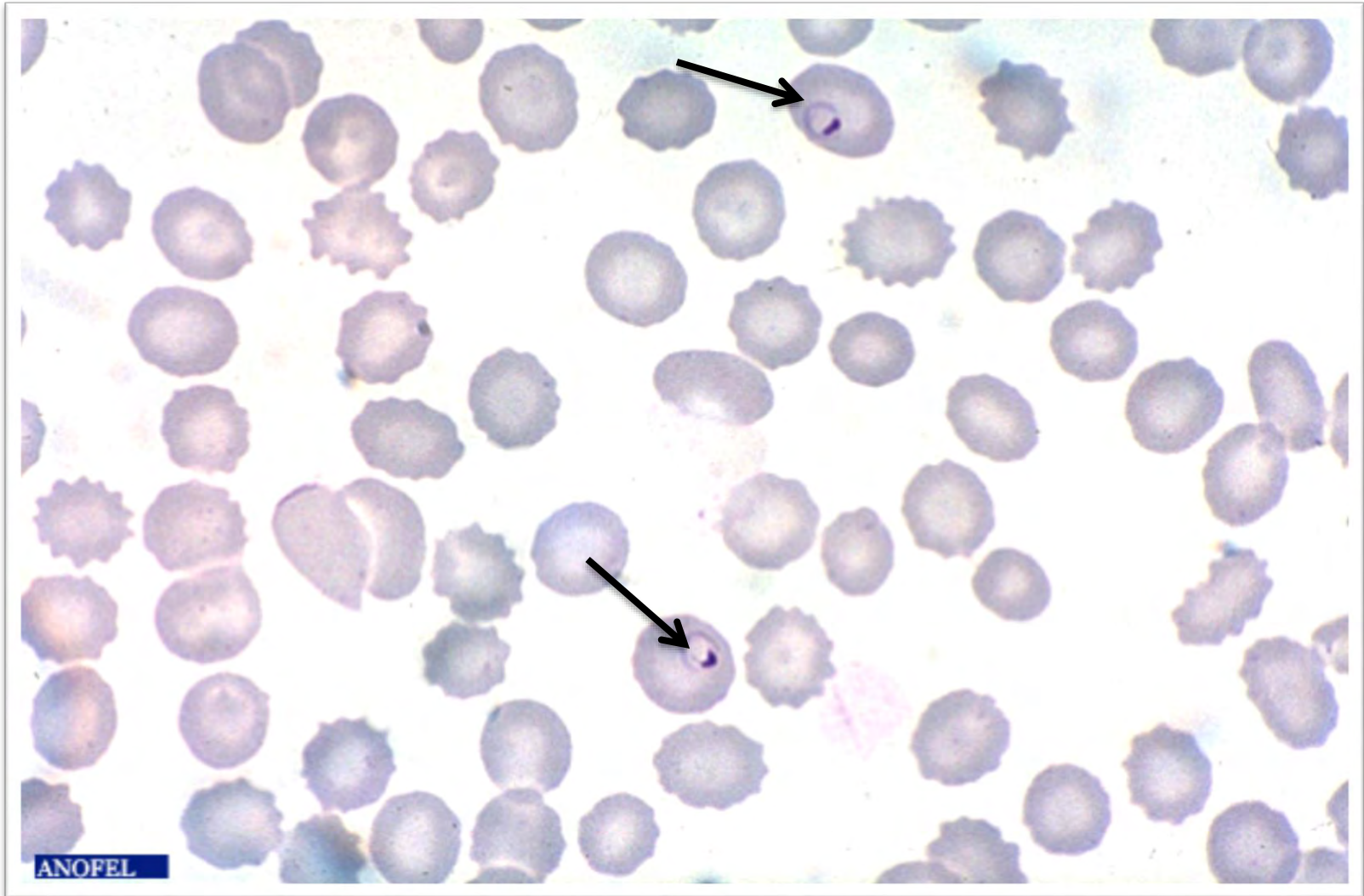
Balantidium coli -kyste-



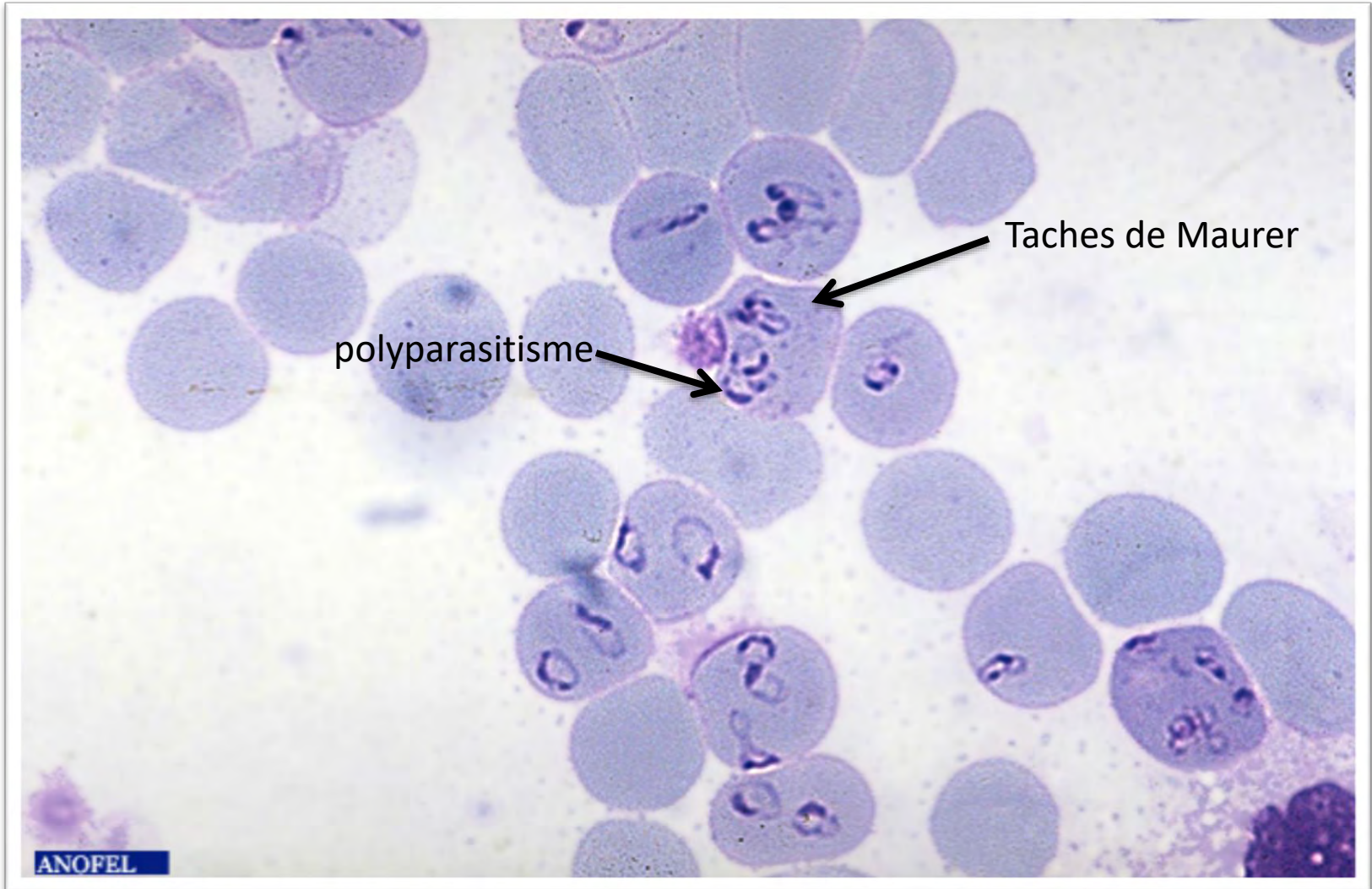


LES SPOROZOAIRES

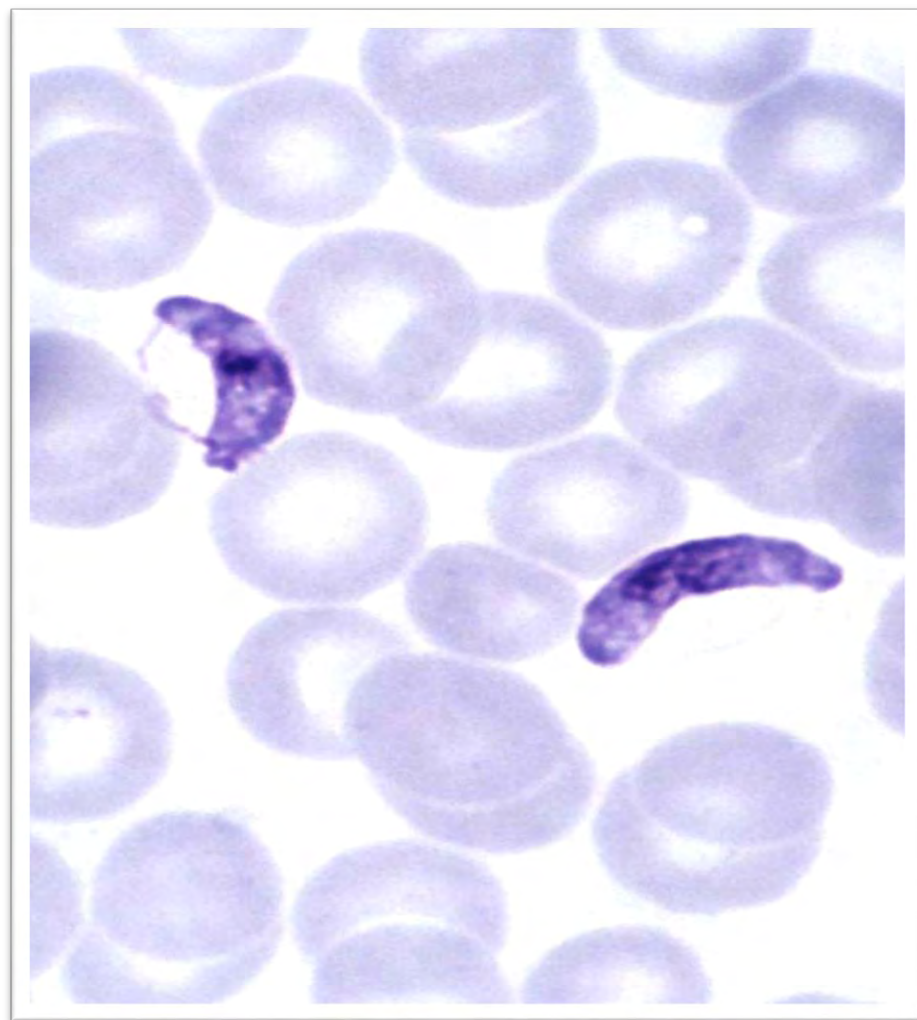
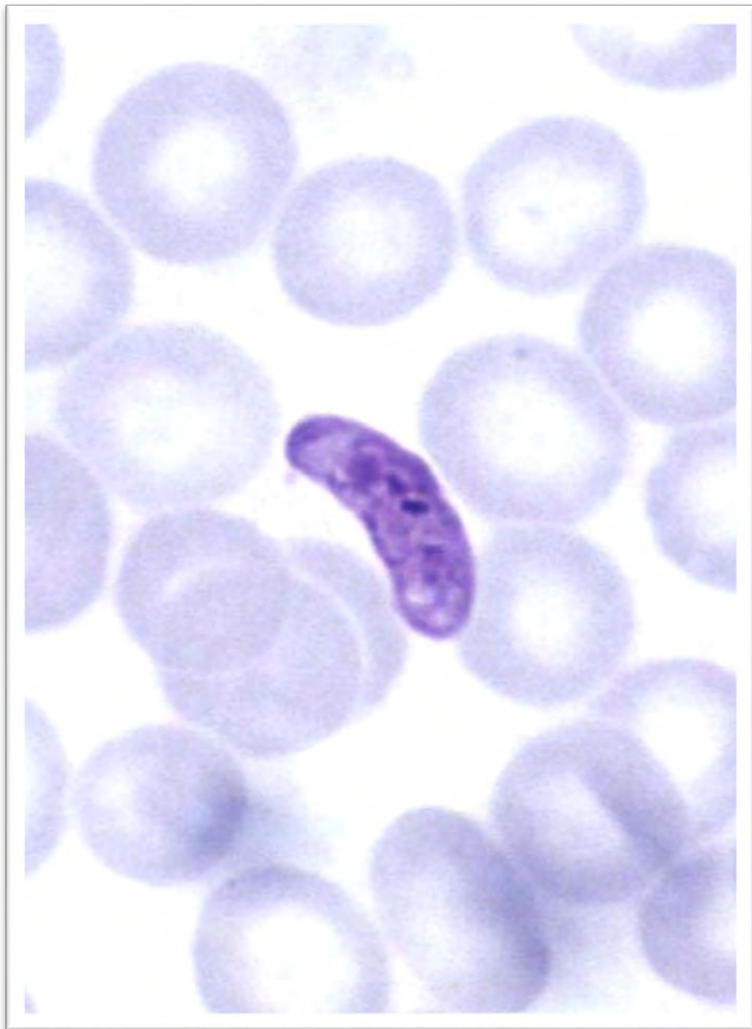
Plasmodium falciparum -trophozoïtes en bague à chaton-



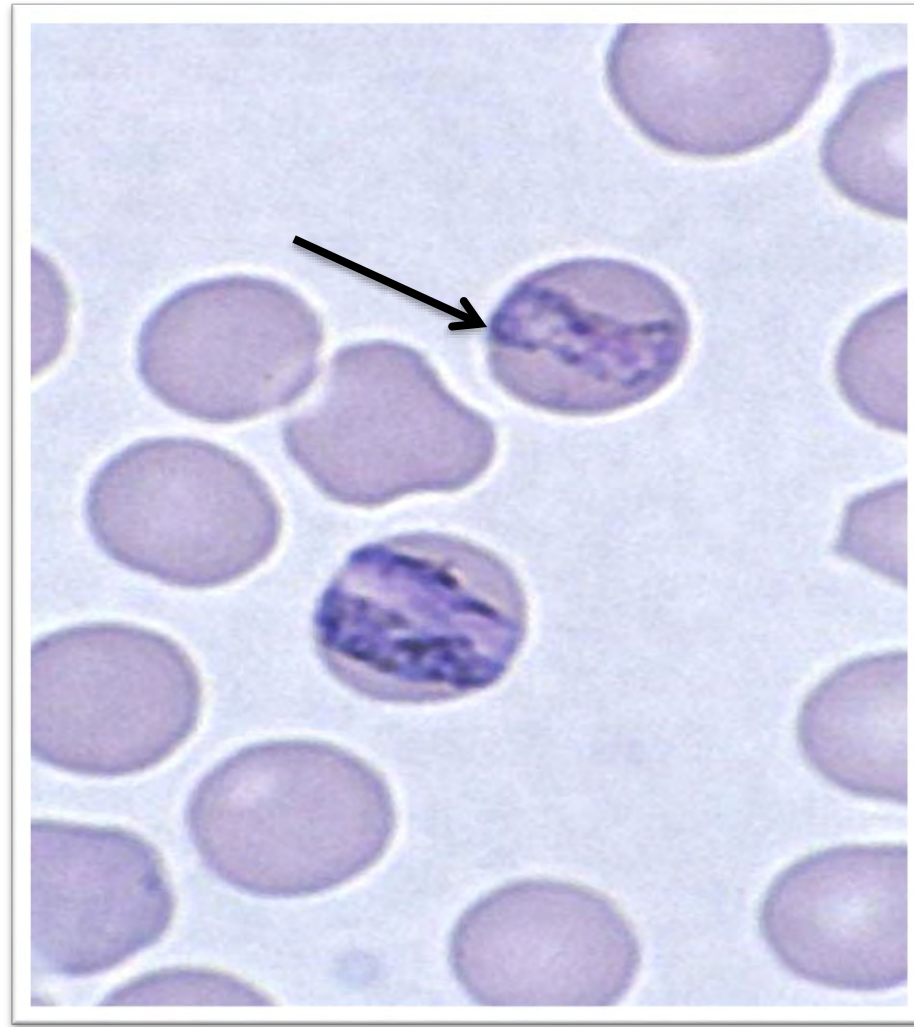
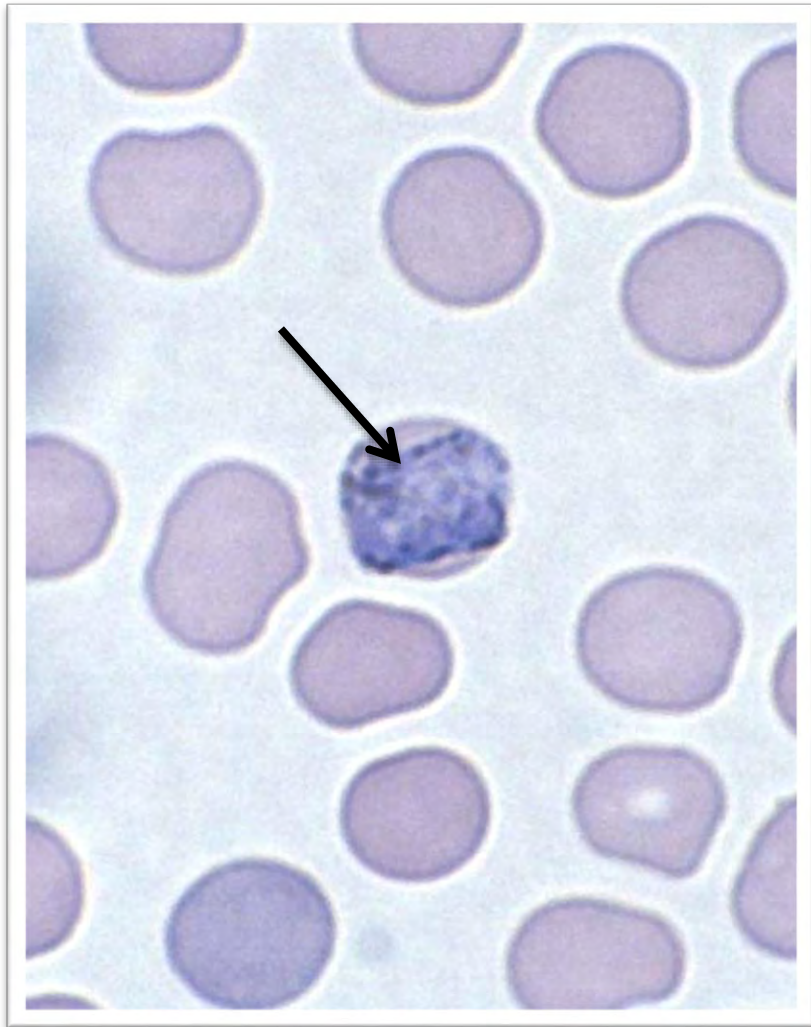
Hématies polyparasités



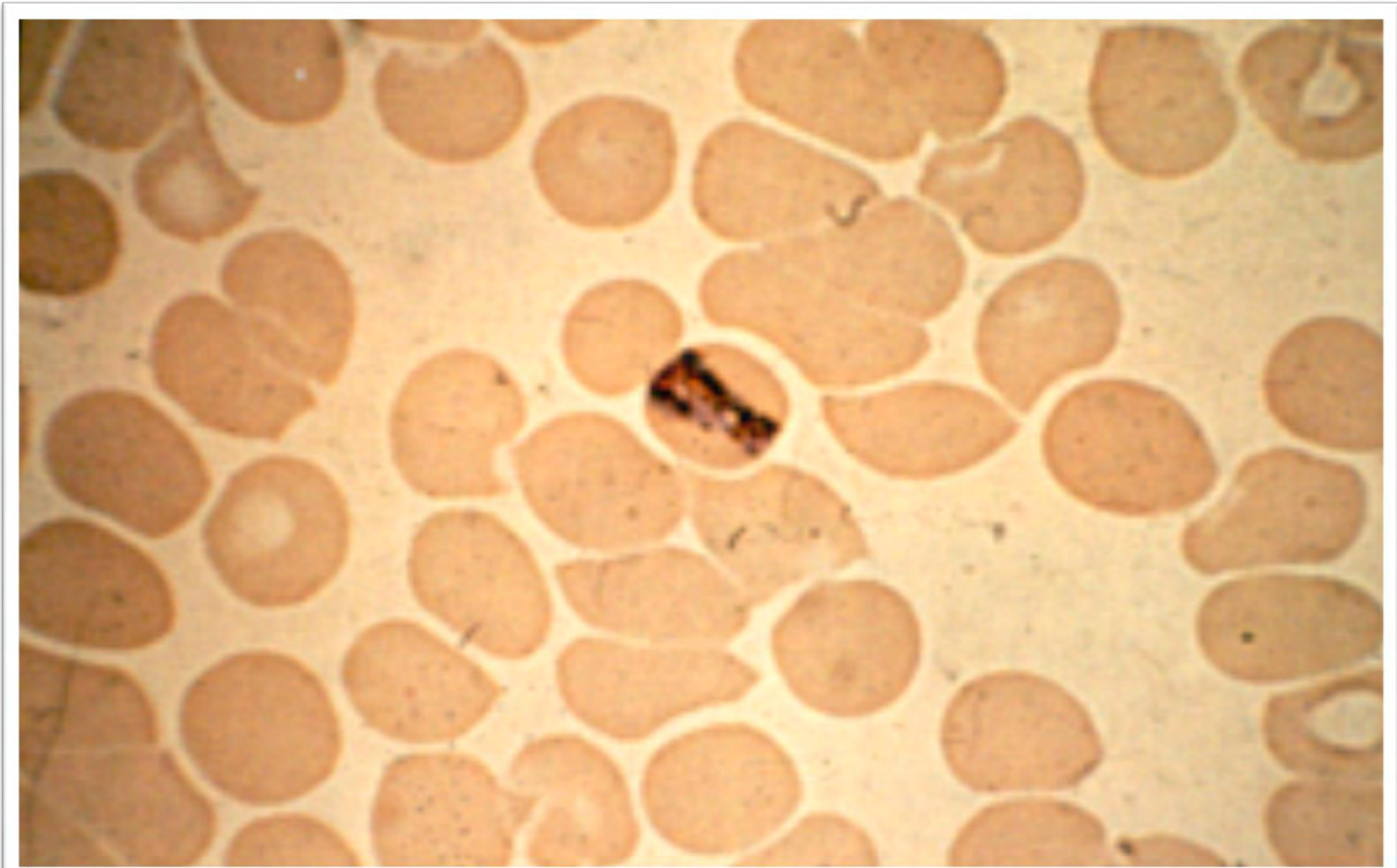
Gamétocytes



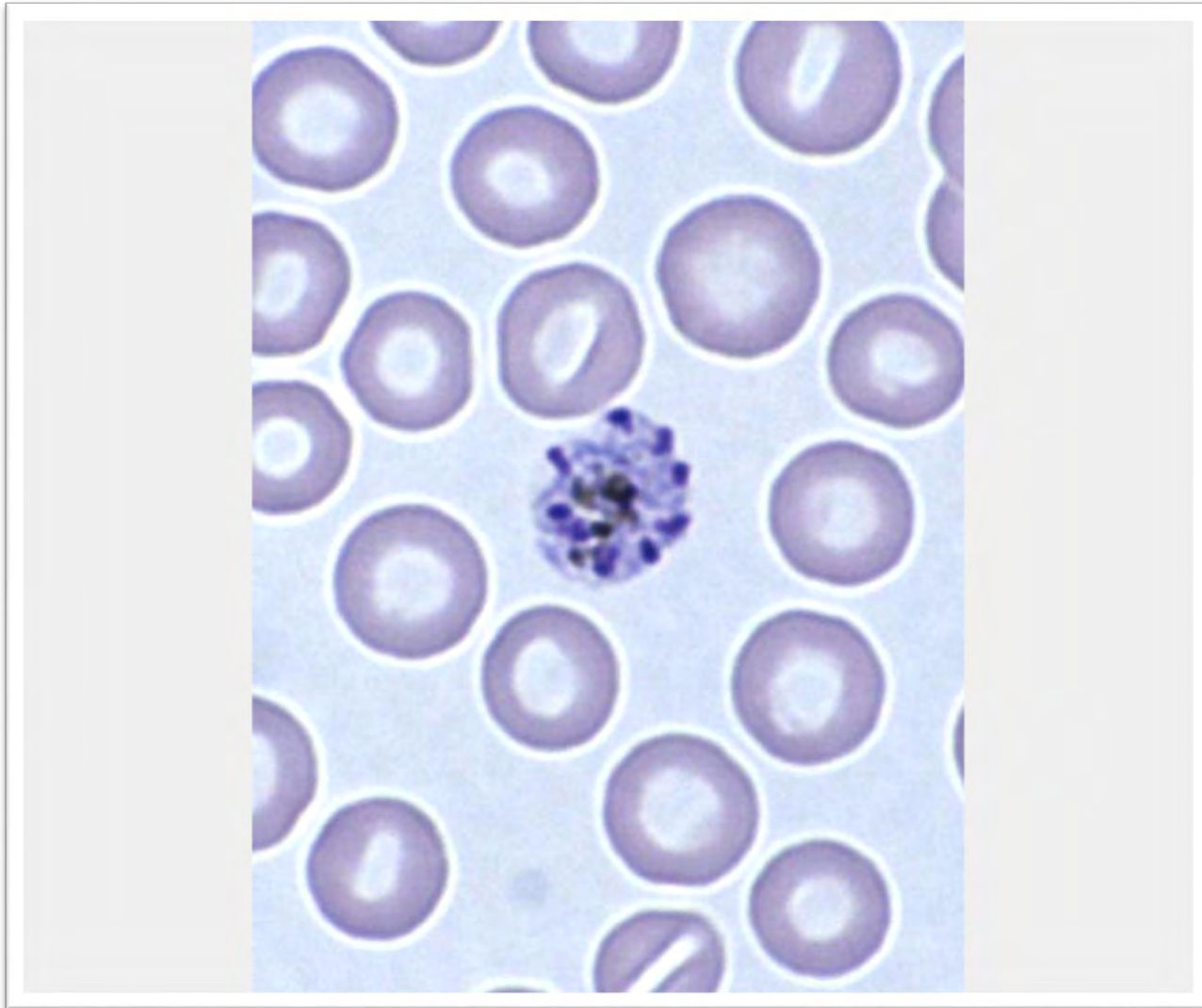
Plasmodium malariae -trophozoïtes âgés-



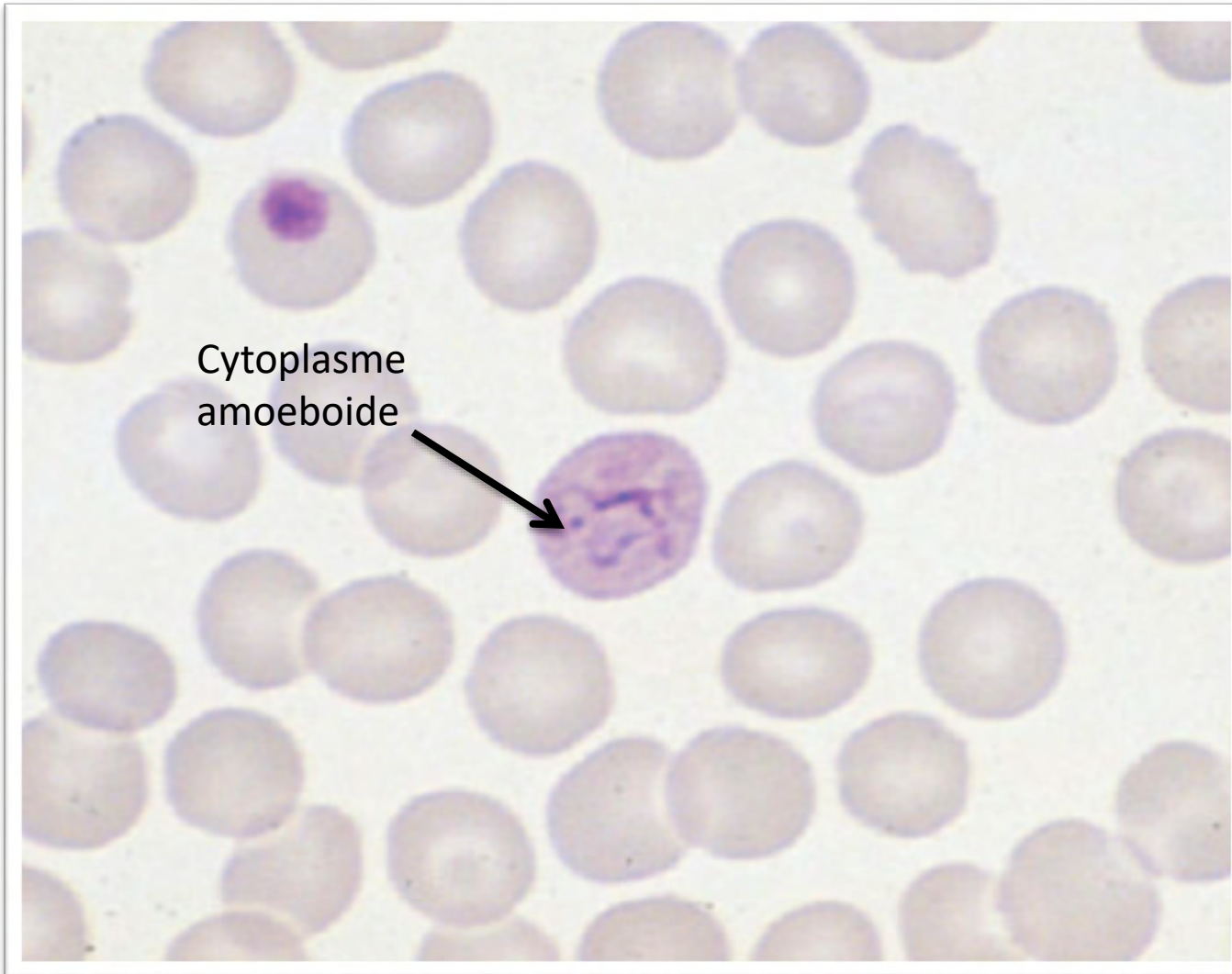
Plasmodium malariae -trophozoïtes âgés-



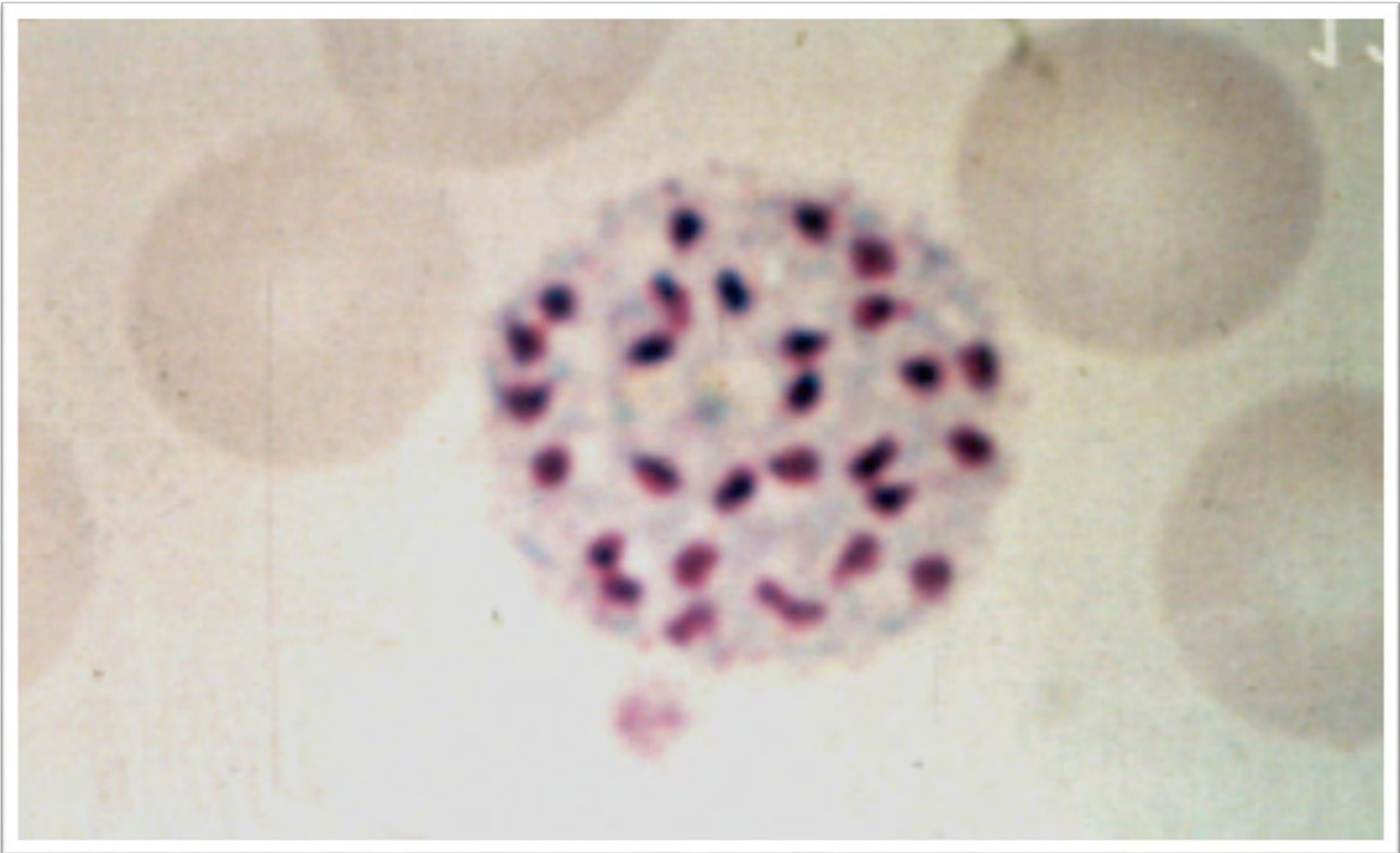
Plasmodium malariae-schizonte-



Plasmodium vivax-trophozoite agé-



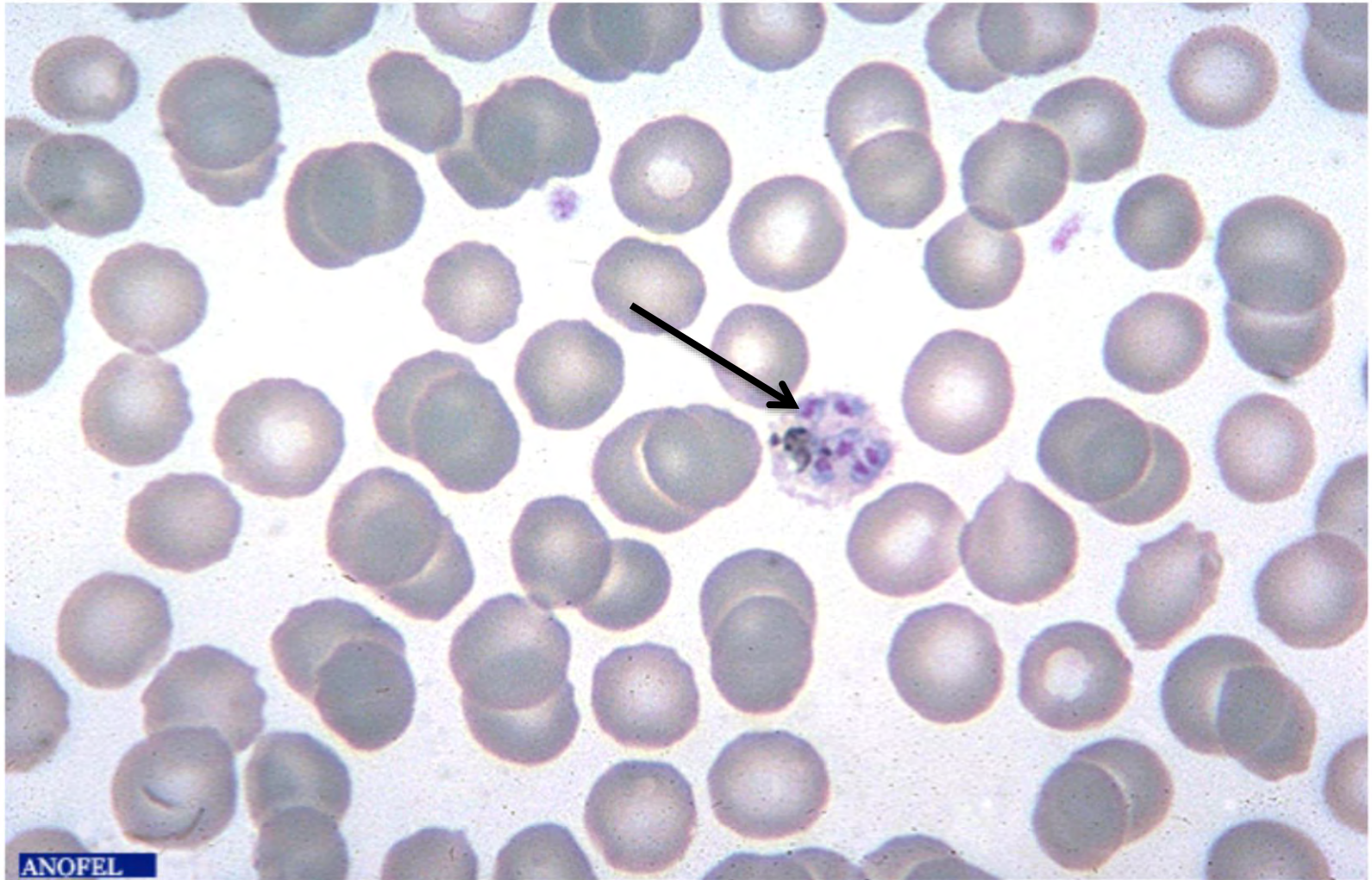
Plasmodium vivax-schizonte-



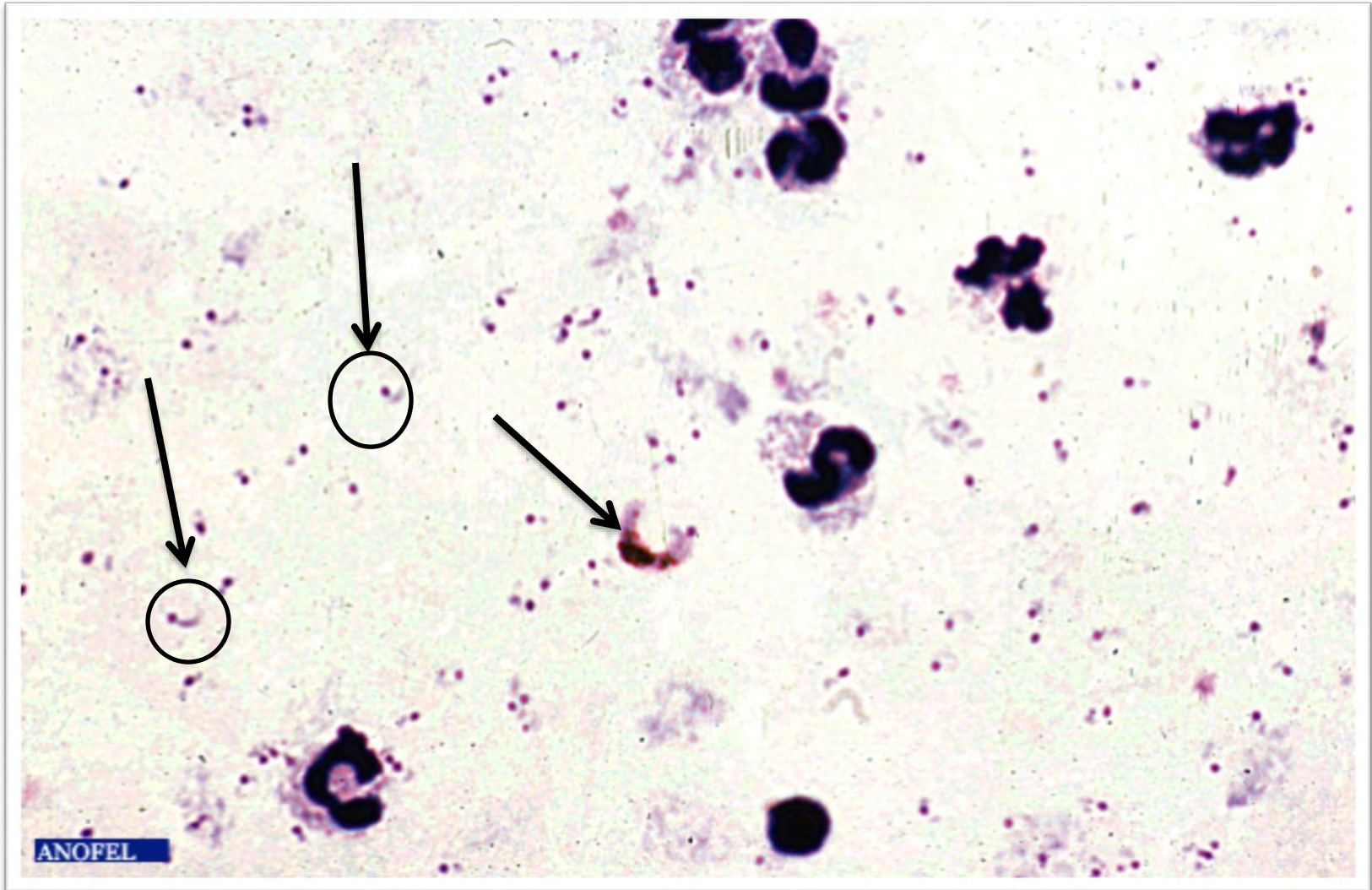
Plasmodium ovale -trophozoite jeune-



Plasmodium ovale -Rosace (4-12 maximum16 noyaux)-



Goutte épaisse positive *Plasmodium falciparum* -trophozoïtes
et gamétocytes-



Anophèle



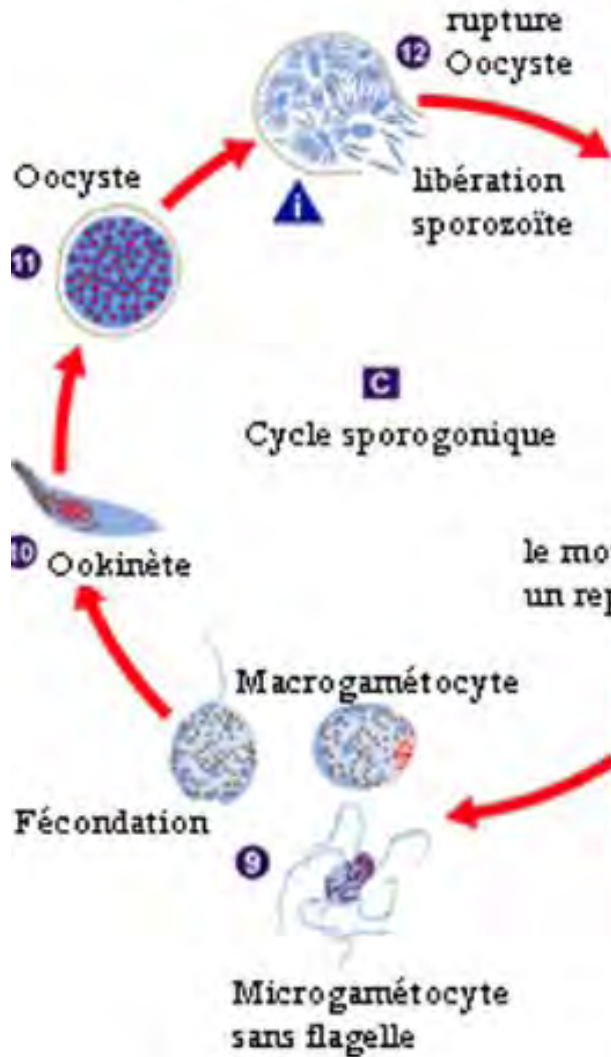
Sporozoïtes



▲ = Etape infectieuse
 ▲_d = Etape diagnostique



Etape de l'anophèle



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

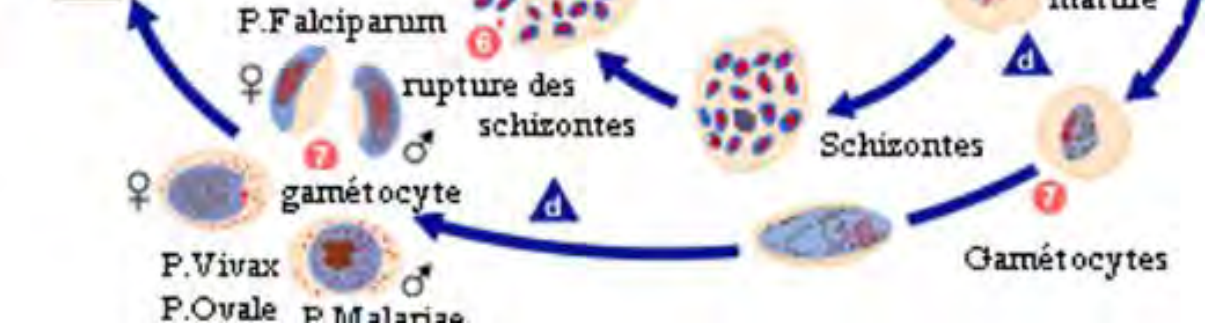
Le moustique prend un repas de sang



le moustique prend un repas de sang



Etape humaine



P.Falciparum

♀ rapture des schizontes

♂ gamétocyte

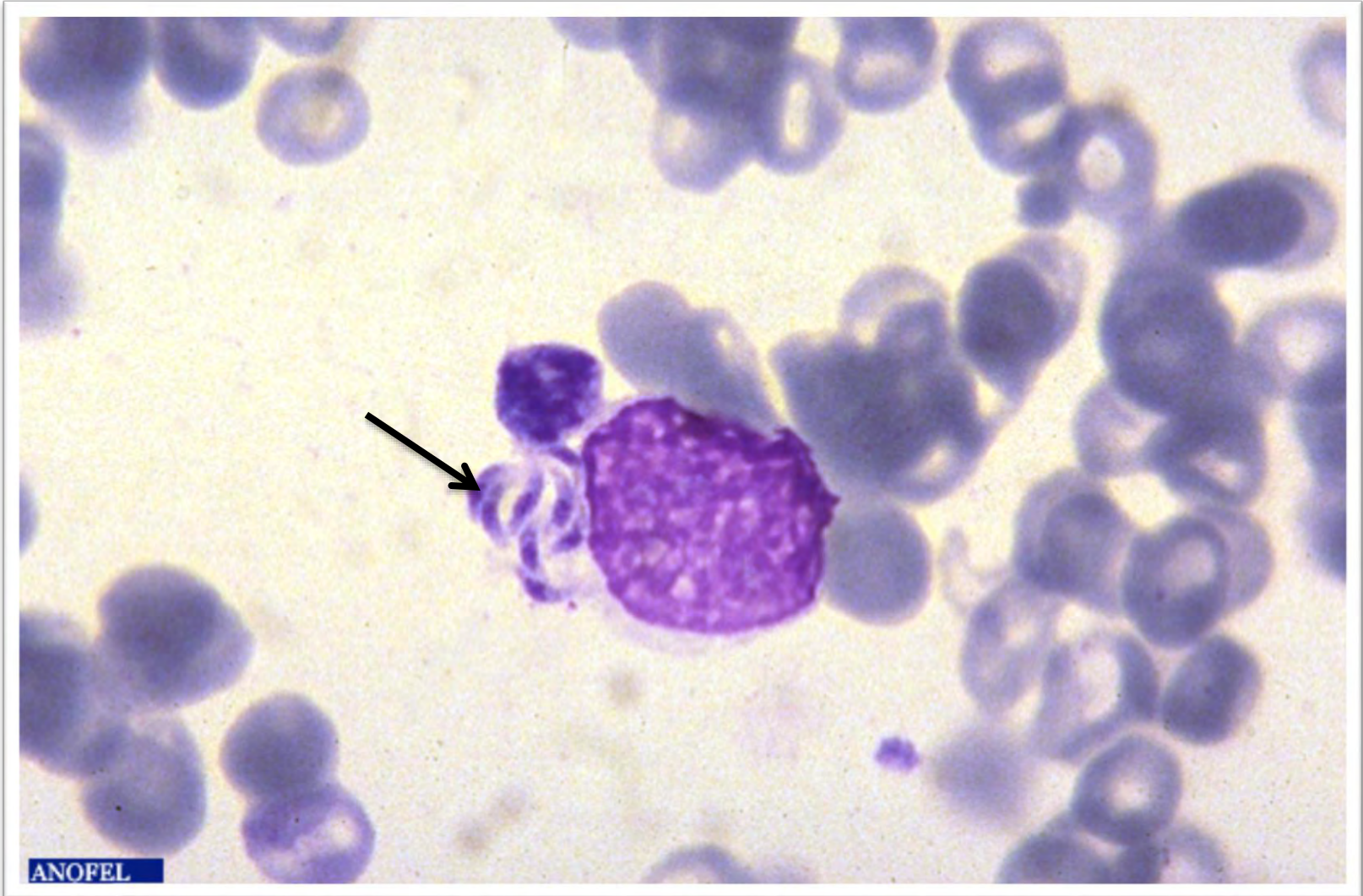
♀ P.Vivax

♂ P.Ovale

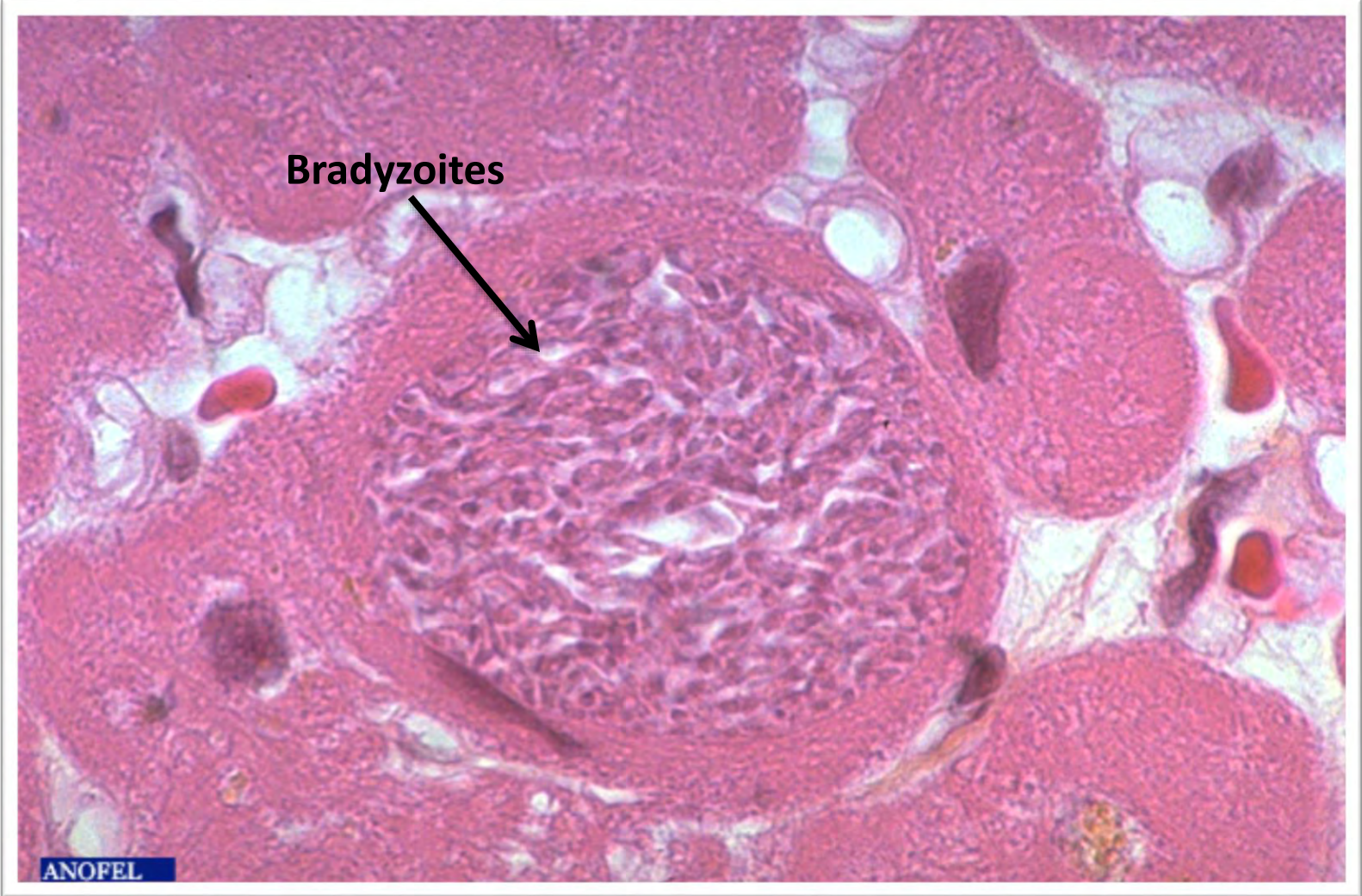
♂ P.Malariae

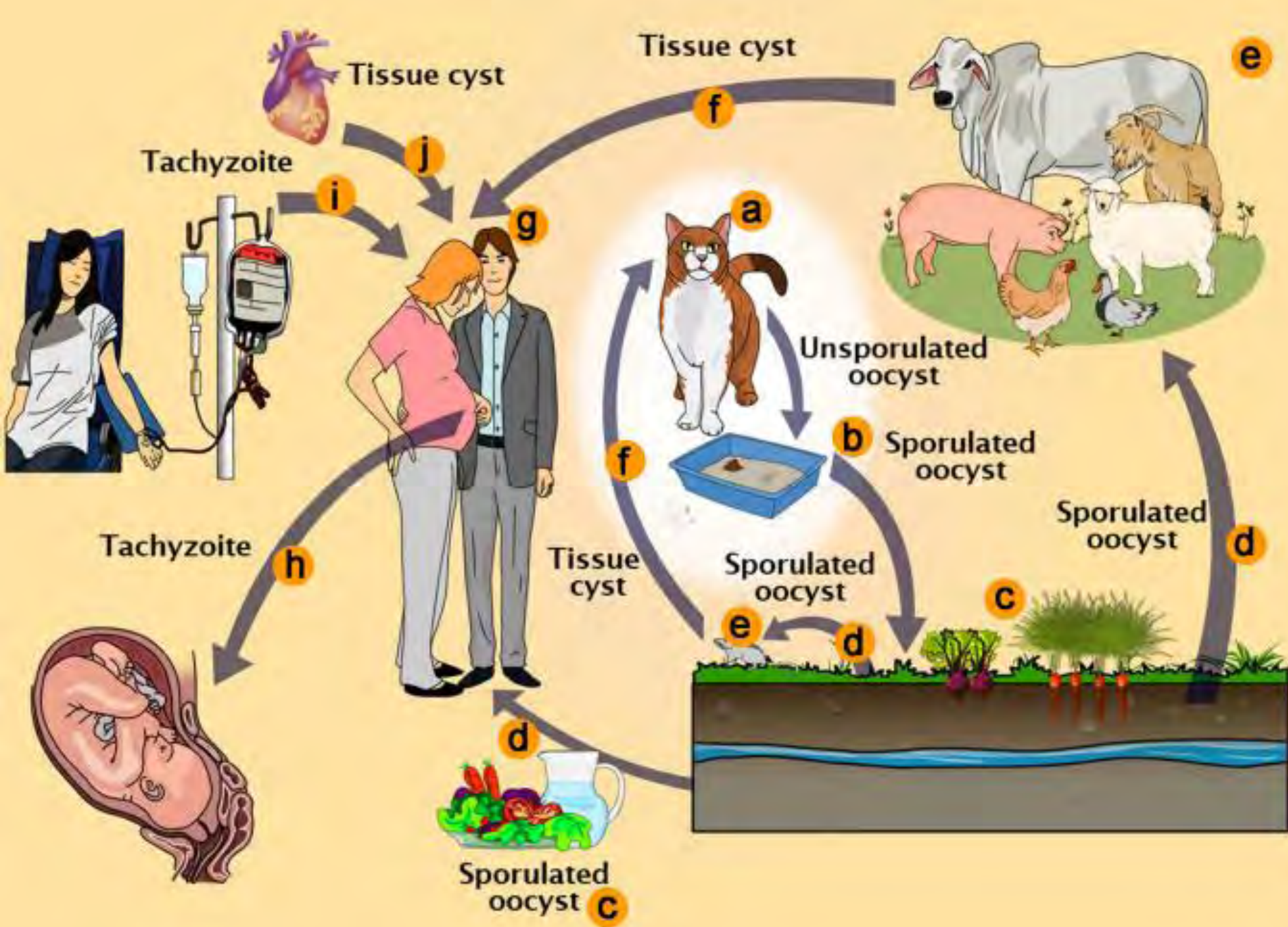
Gamétocytes

Toxoplasma gondii -tachyzoite-

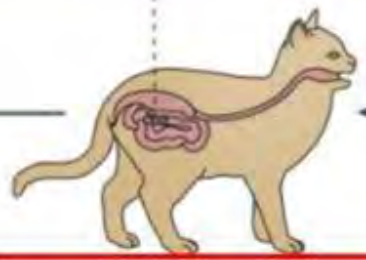
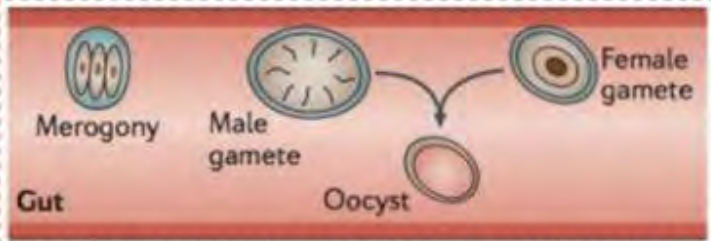


Toxoplasma gondii – kyste-





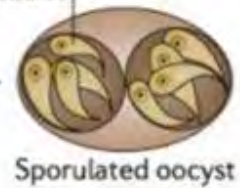
Sexual reproduction



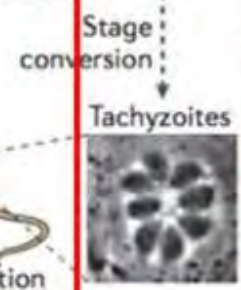
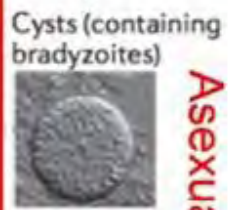
Oocyst shedding



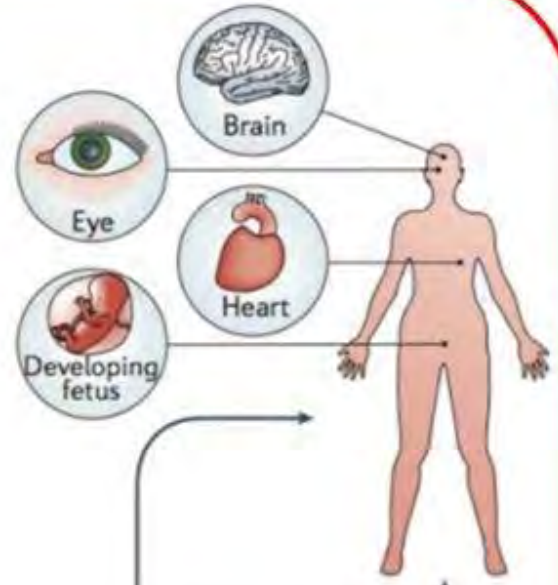
Sporulation



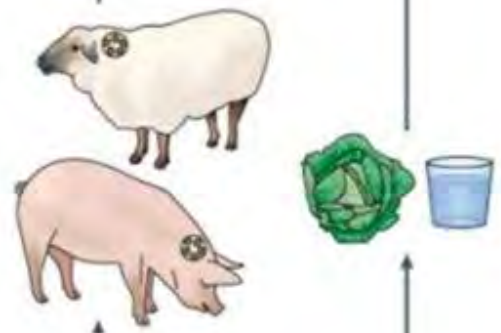
Environmental transmission



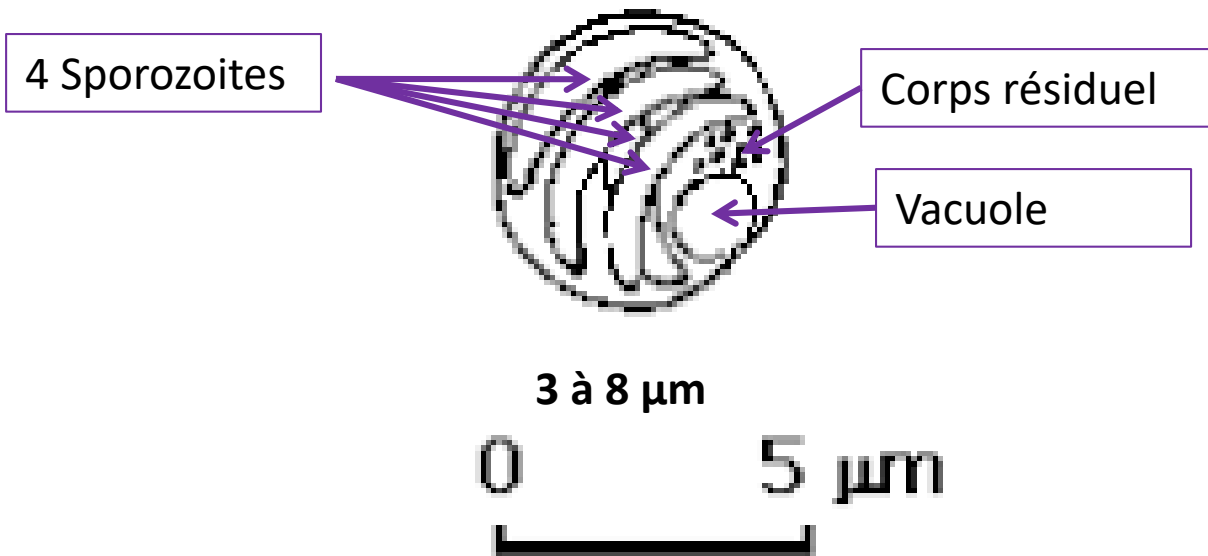
Asexual reproduction



Food- or water-borne transmission

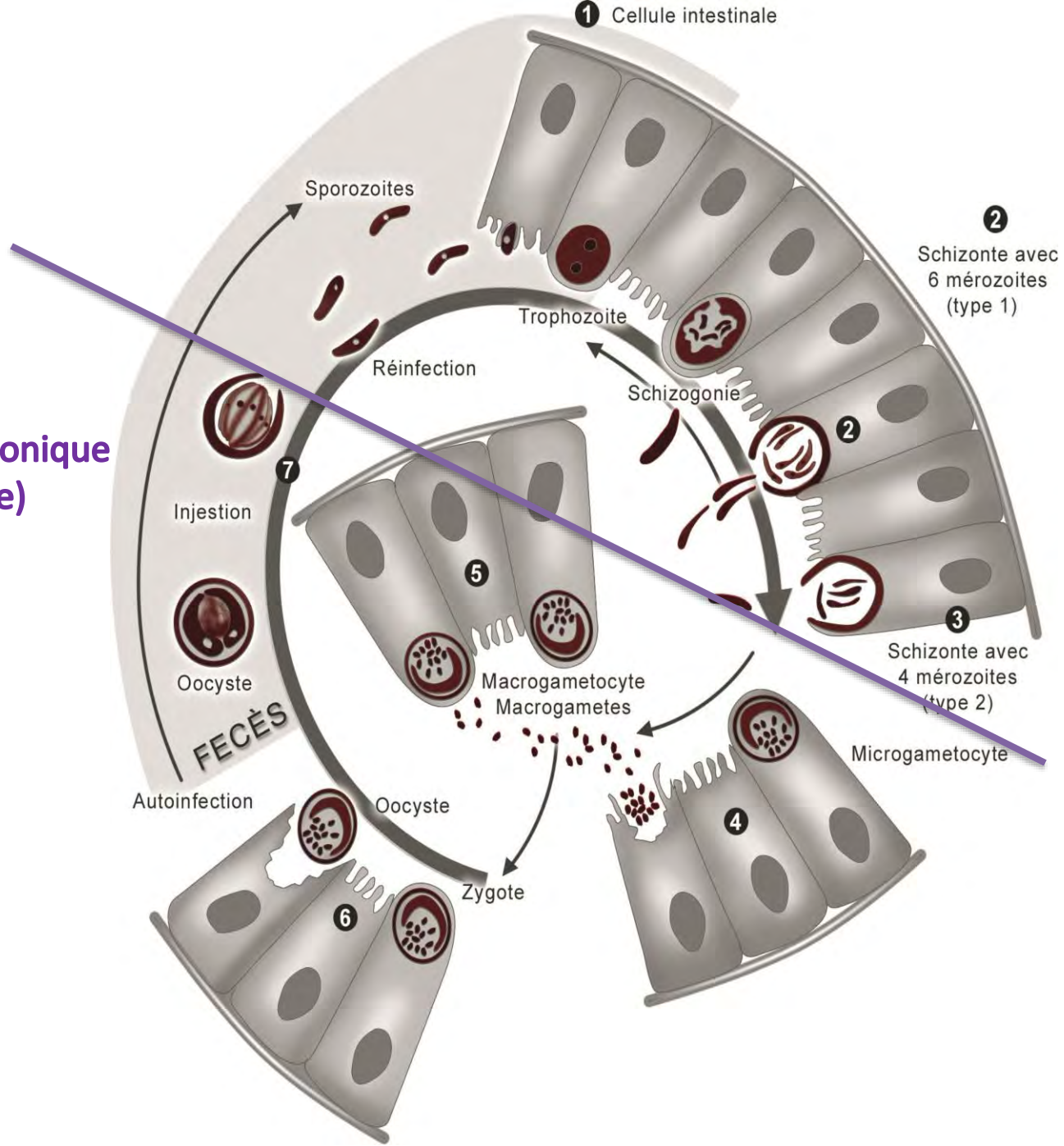


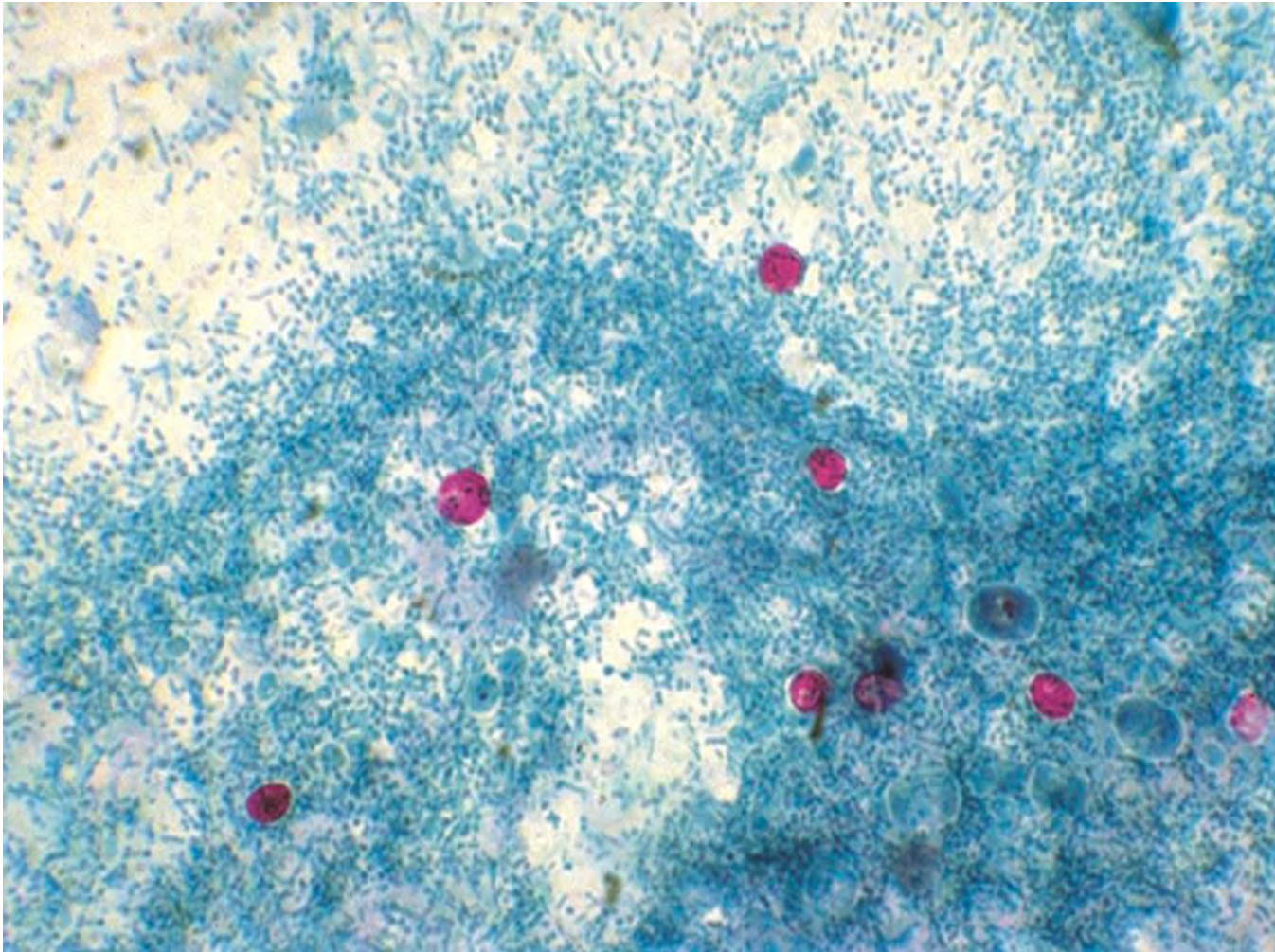
Cryptosporidium sp – oocyste-



Phase gamogonique (sexuée)

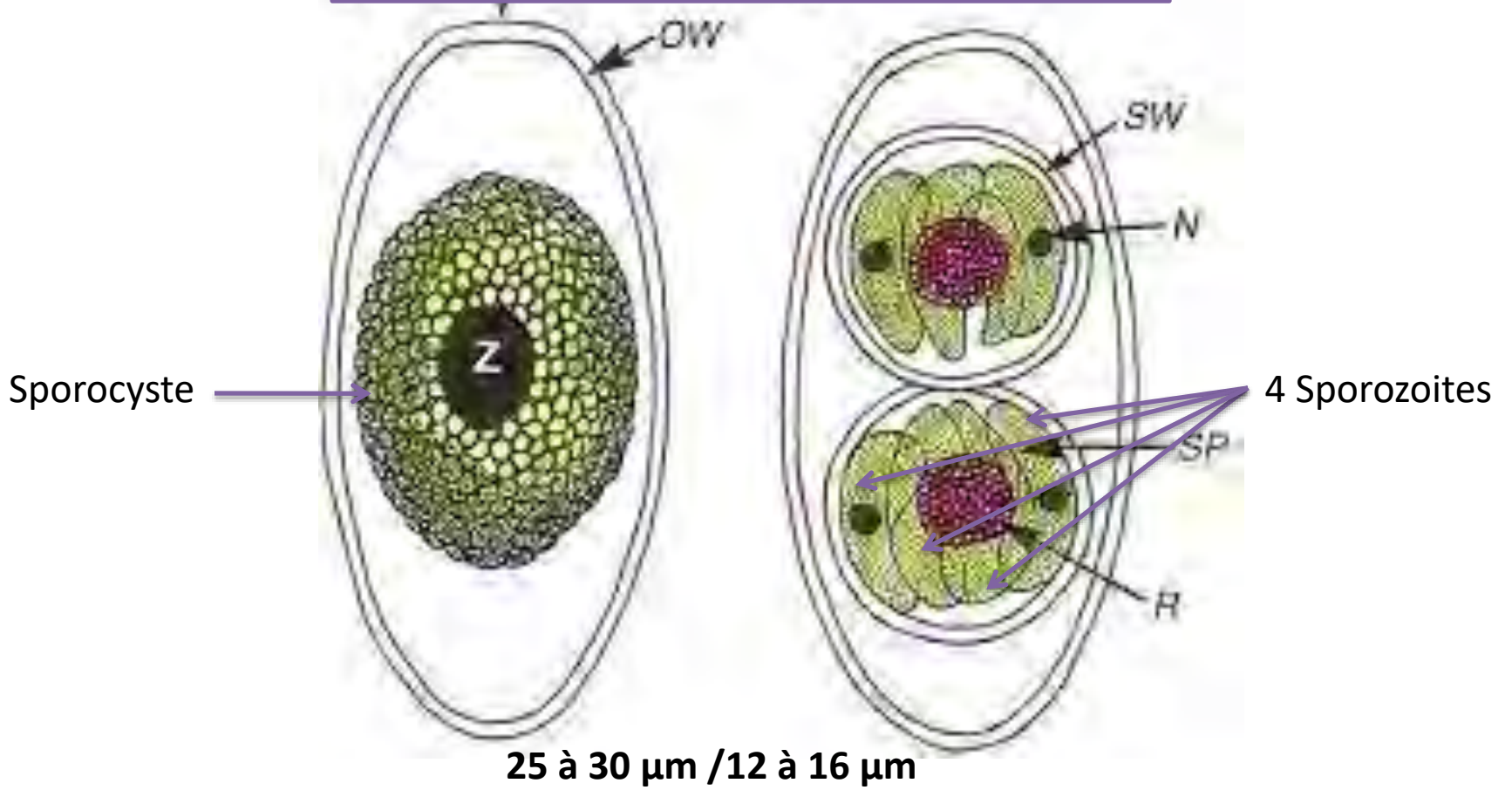
Phase schisogonique (asexuée)

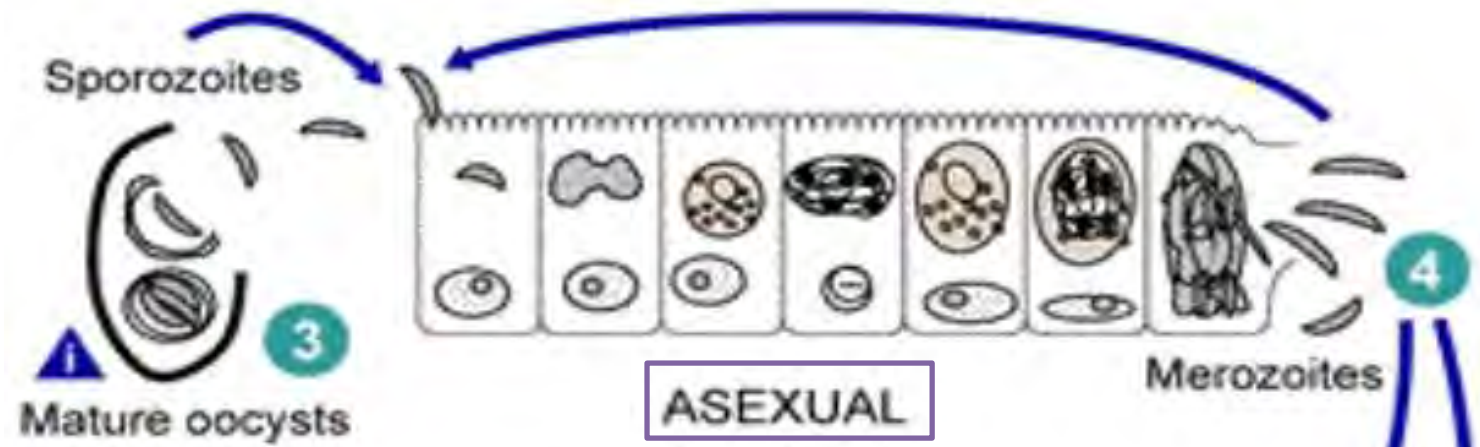




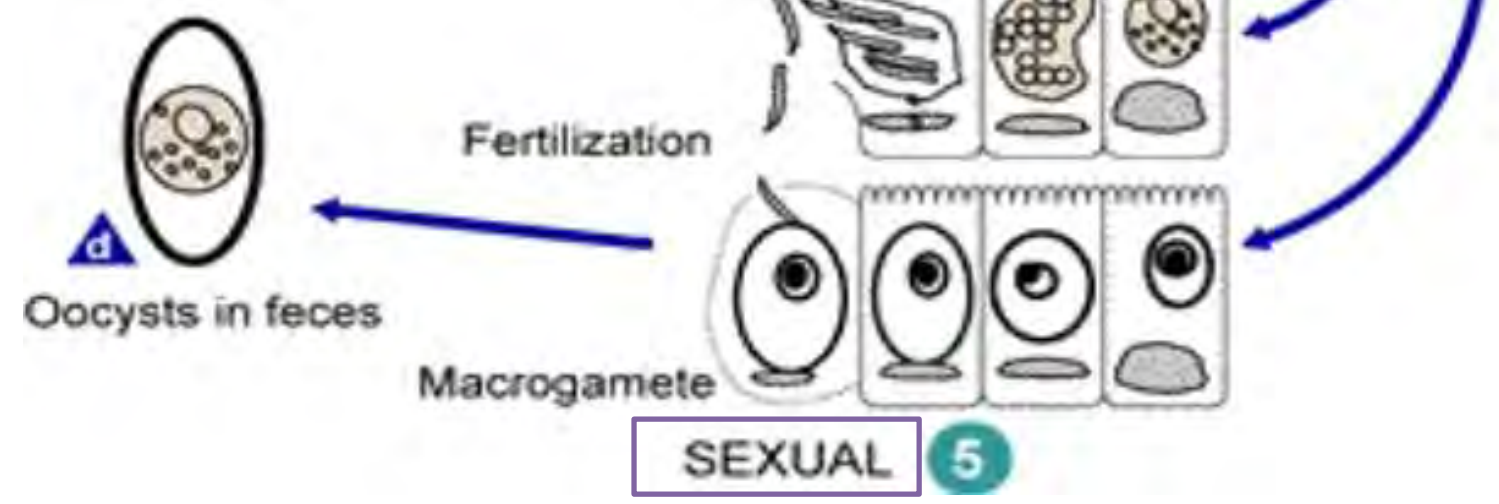
**Oocyste de *Cryptosporidium* sp.
Coloration Ziehl Neelsen**

Cystoisospora belli sp – oocyste-



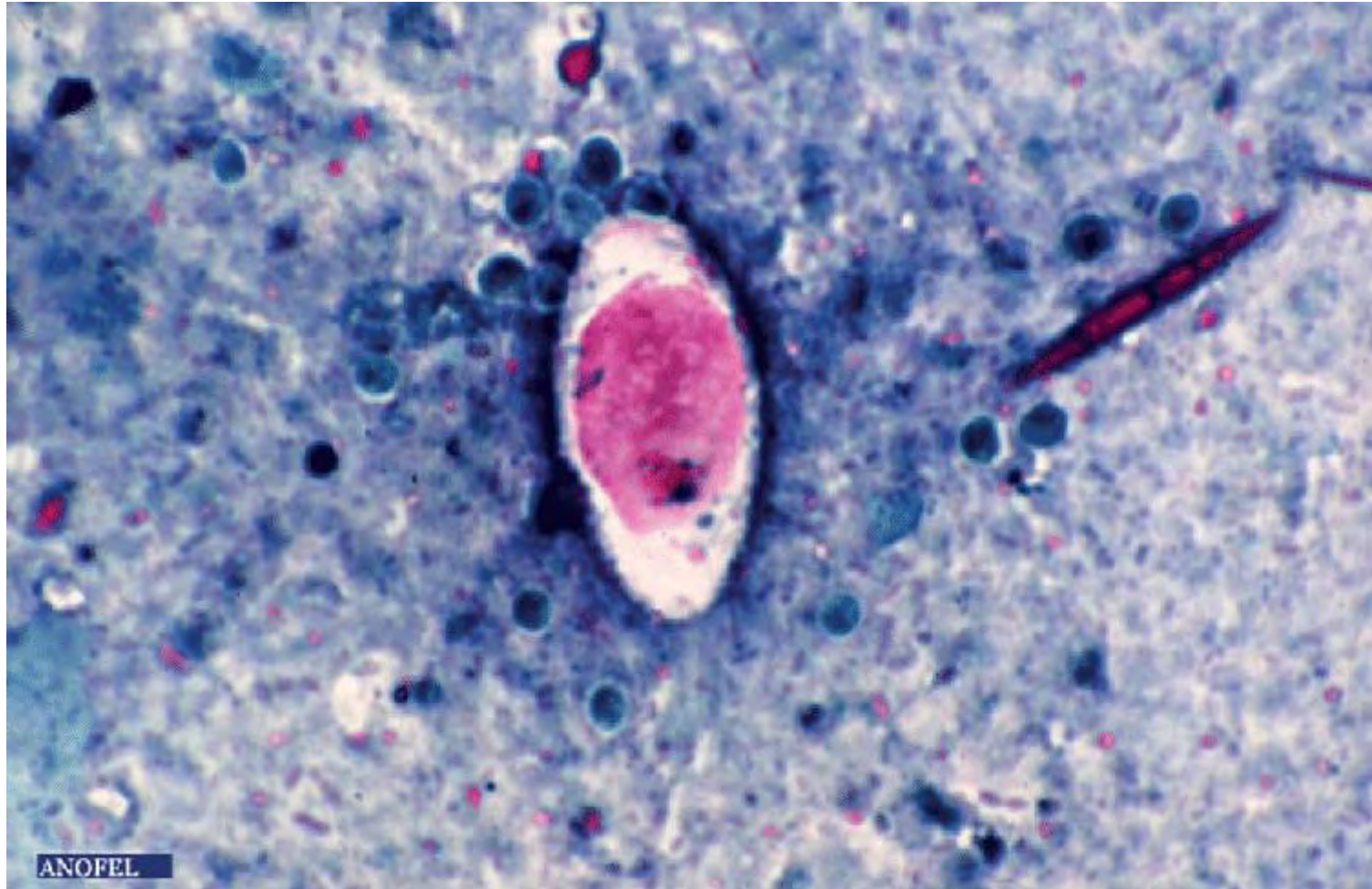


SPORULATION



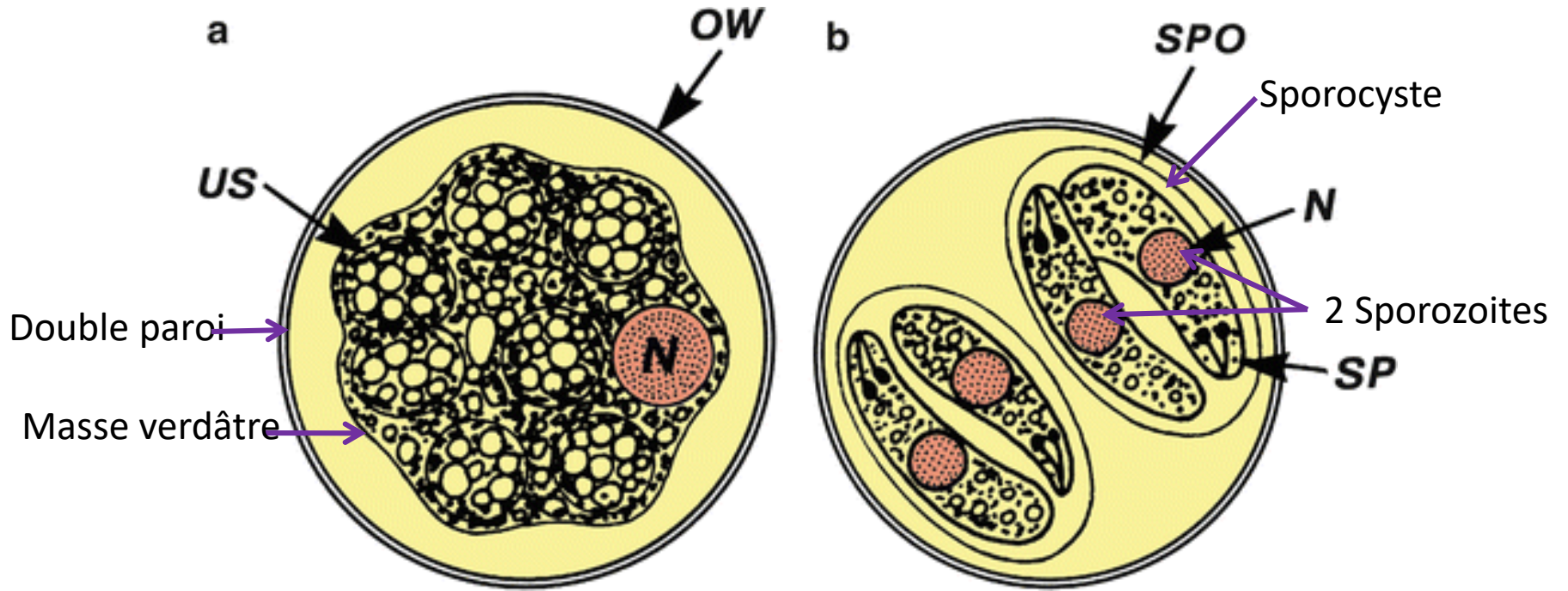


**Oocyste de *Cystoisospora belli*
À l'état frais**

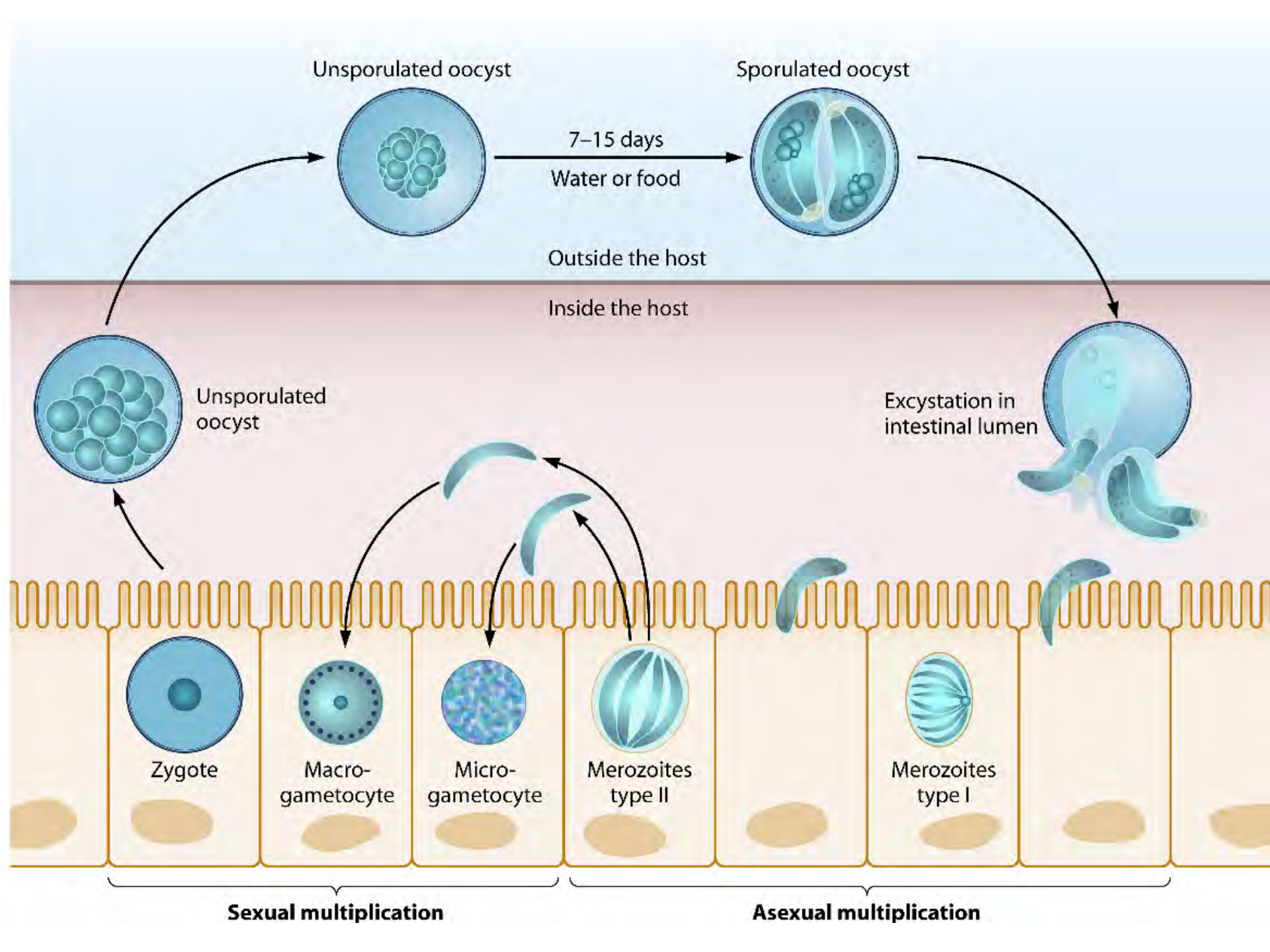


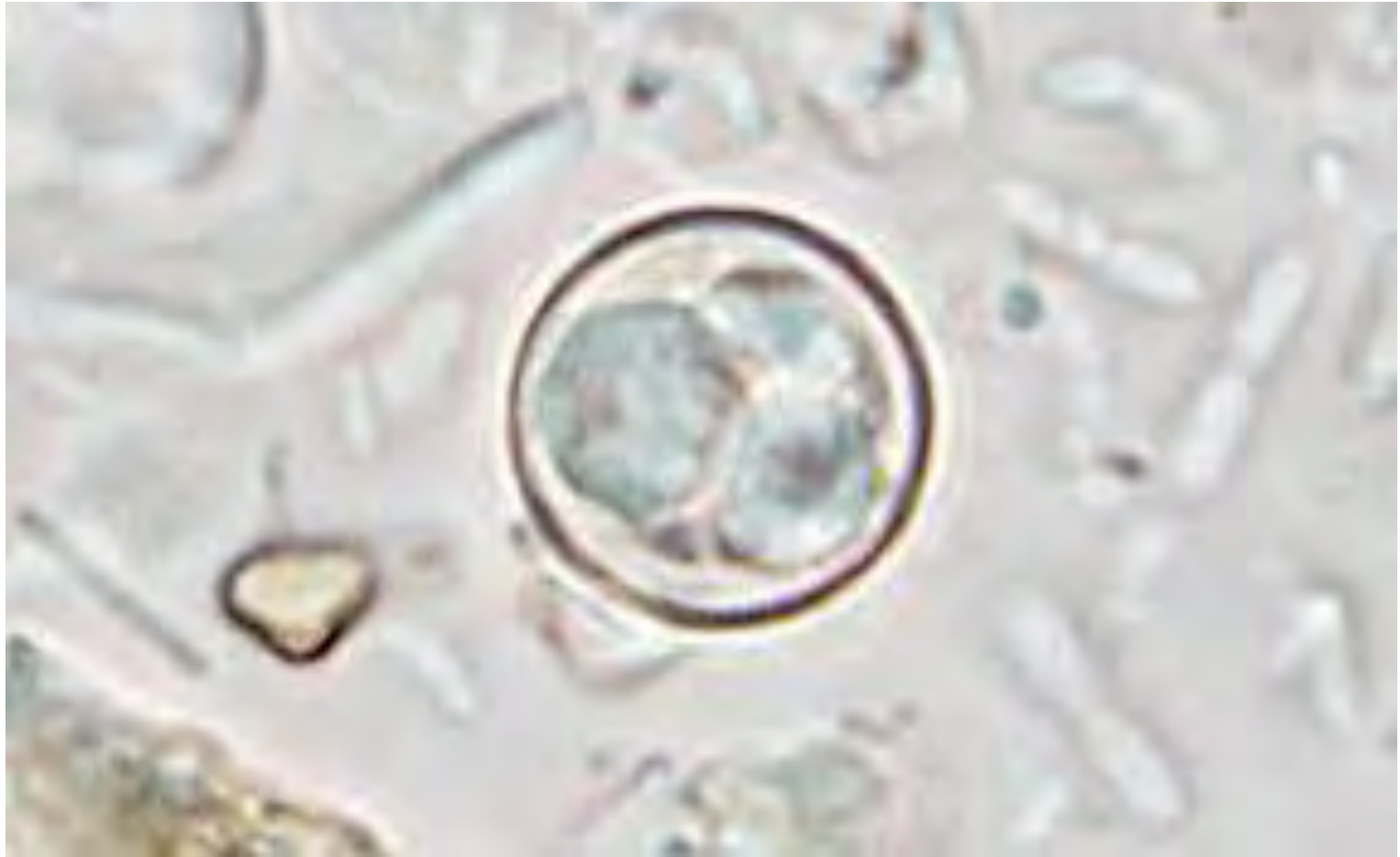
Oocyste de *Cystoisospora belli*
Coloration Ziehl Neelsen

Oocyste de *Cyclospora caytanensis*

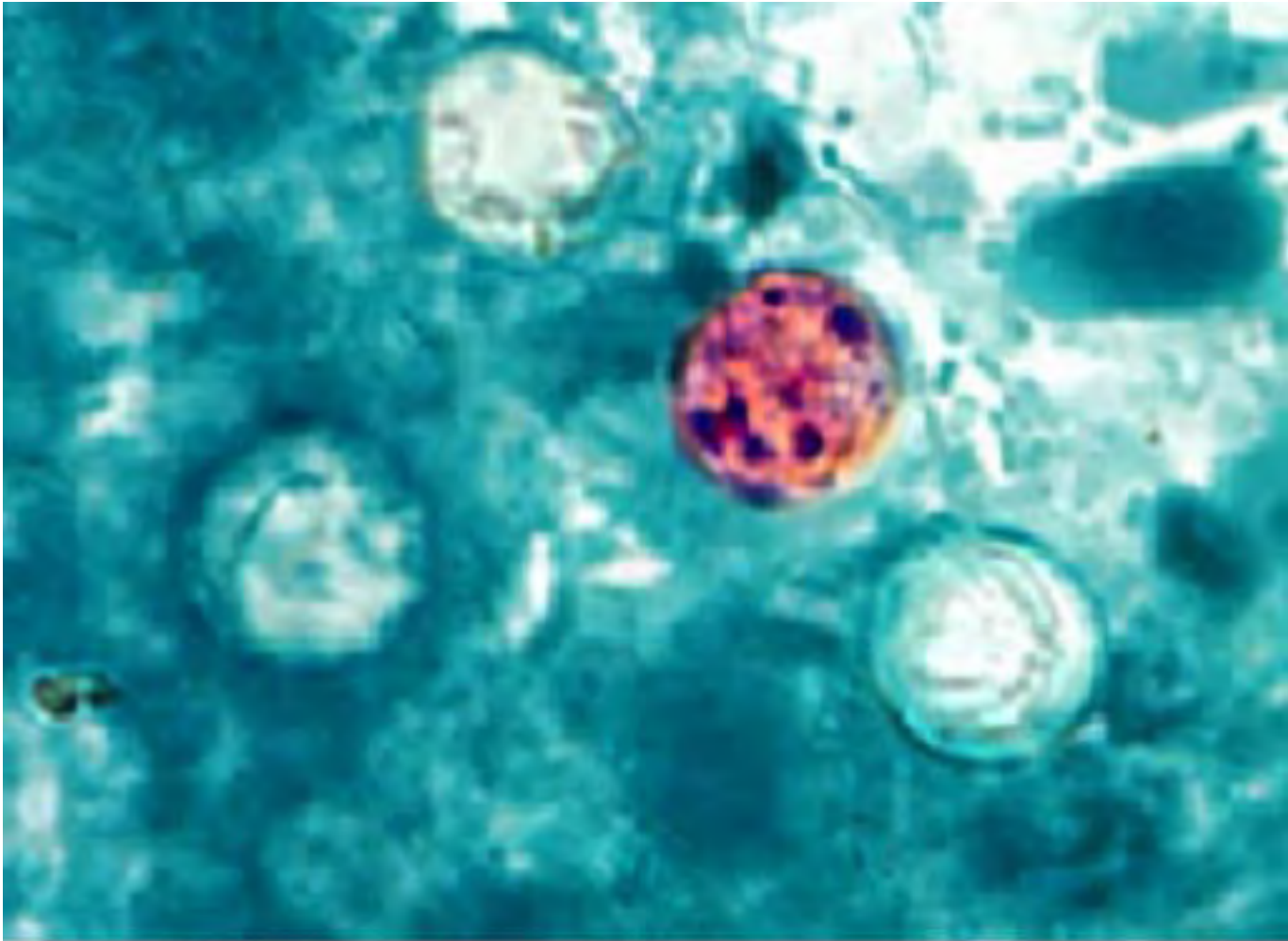


8 à 10 μm

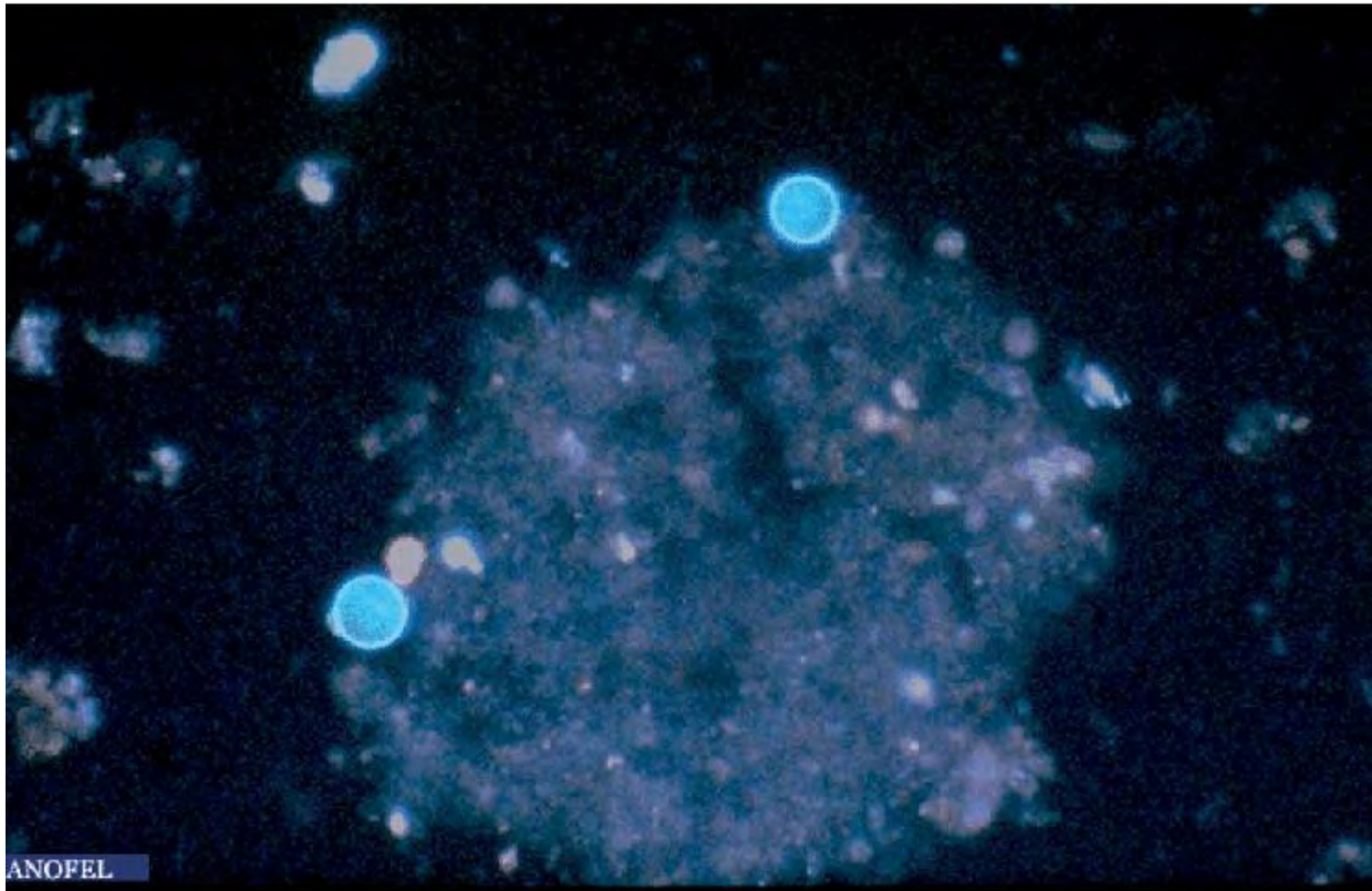




**Oocyste de *Cyclospora caytanensis*
À l'état frais**

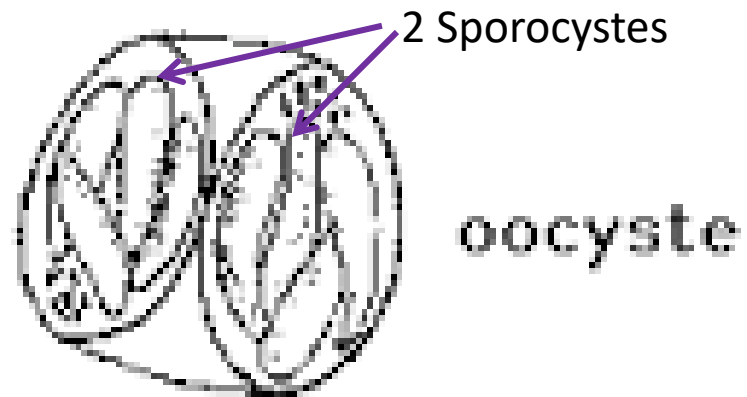


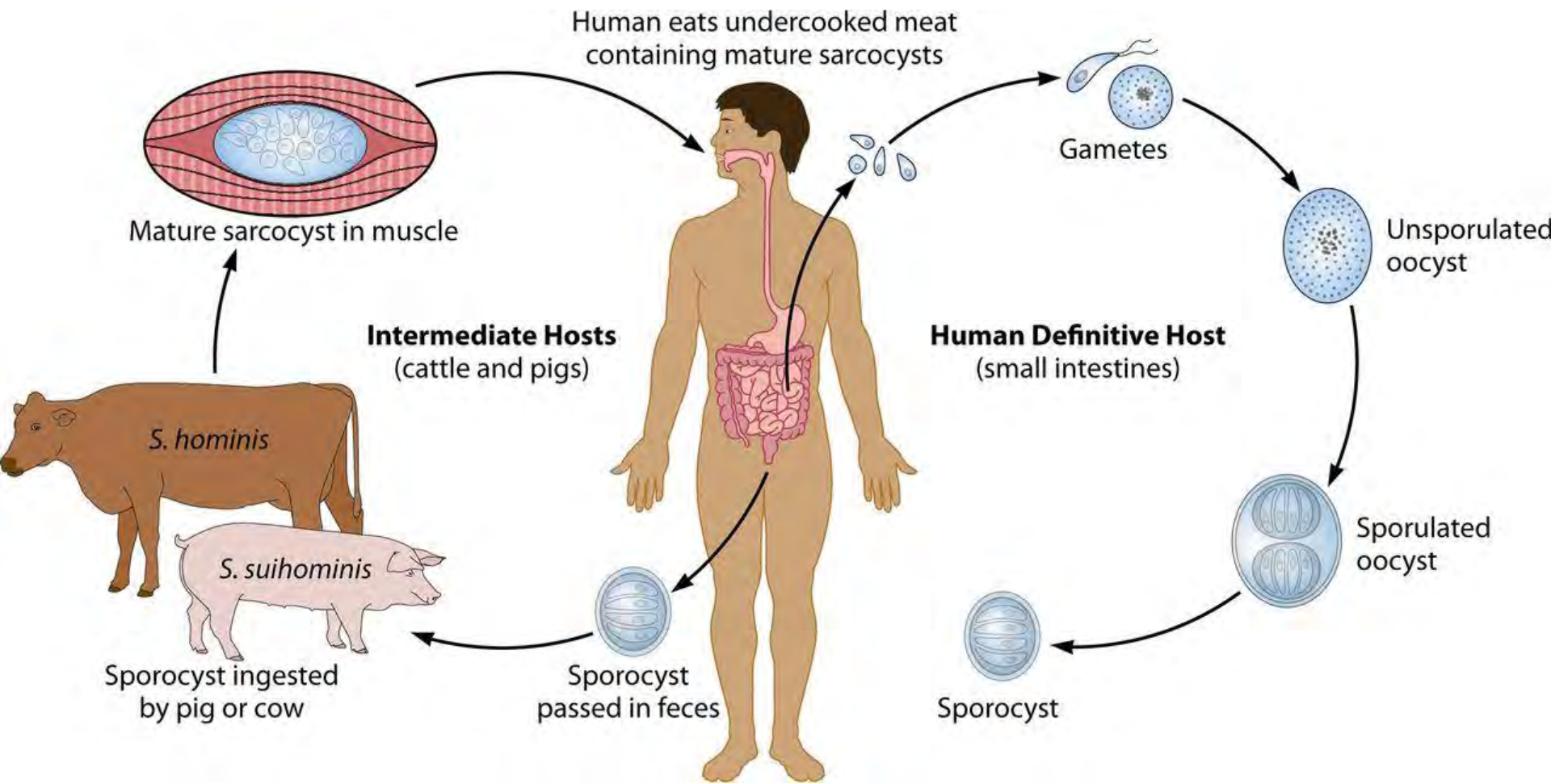
**Oocyste de *Cyclospora caytanensis*
Coloration Ziel Neelsen modifiée**



**Oocyste de *Cyclospora caytanensis*
À la lumière UV**

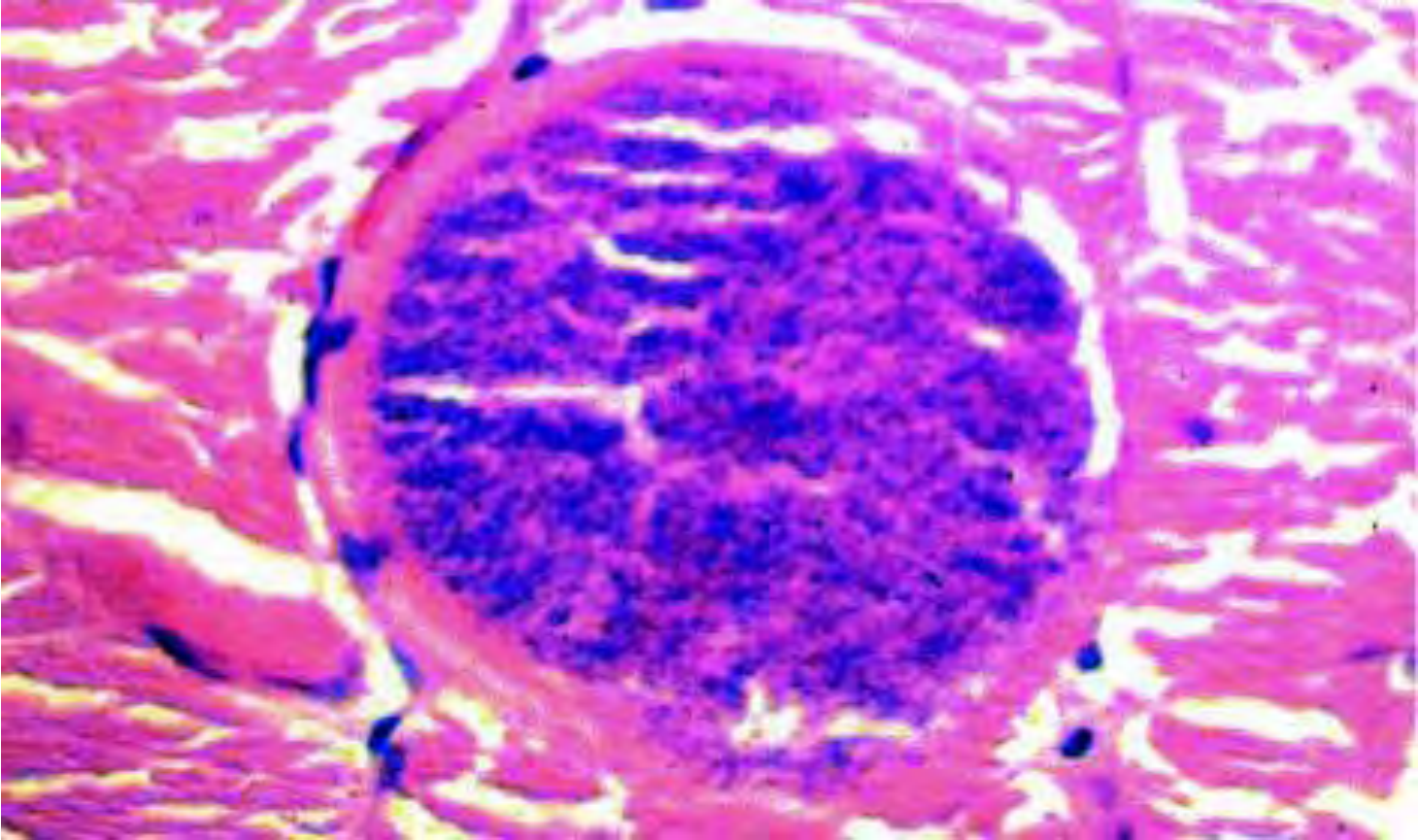
Oocyste de *Sarcocystis* sp.





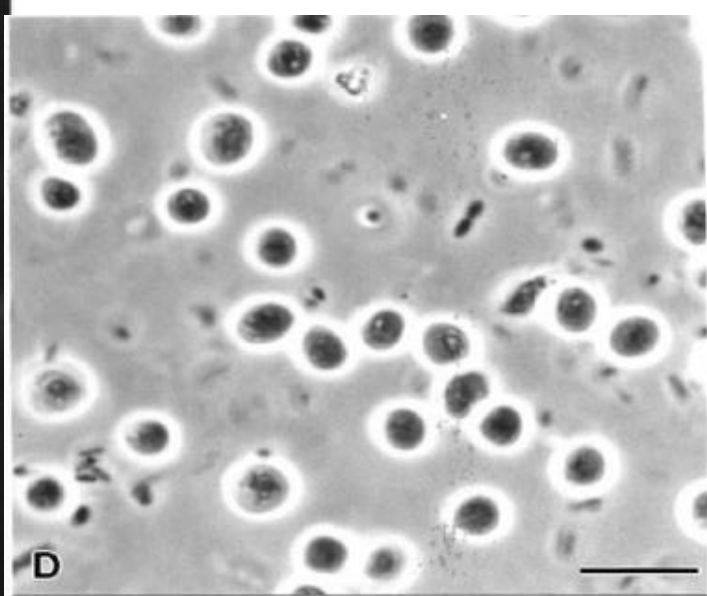
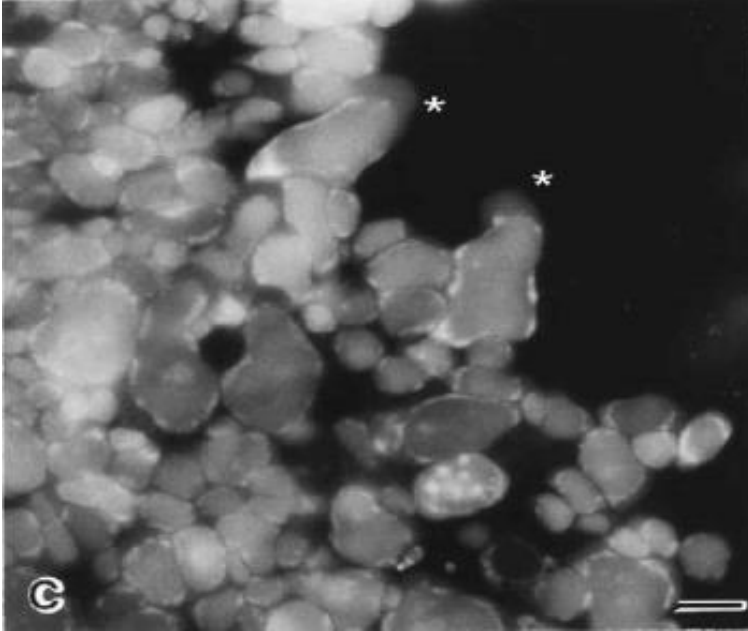
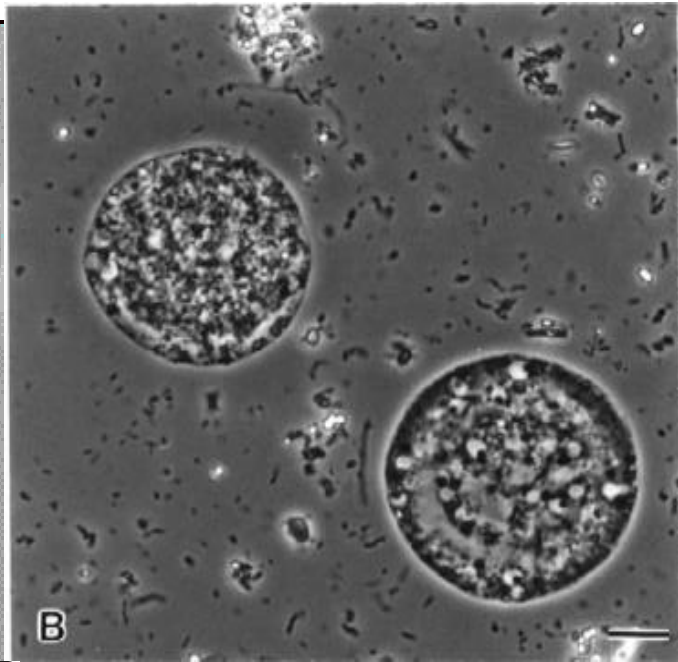
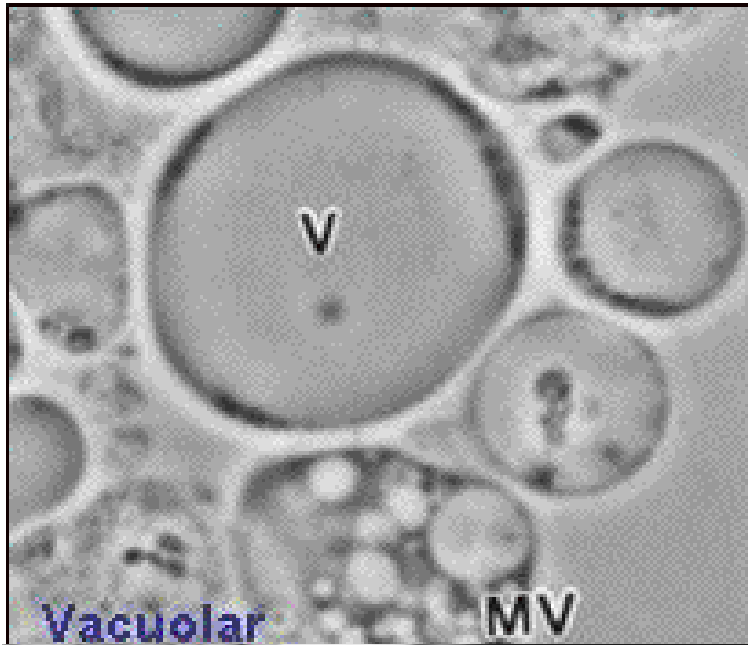


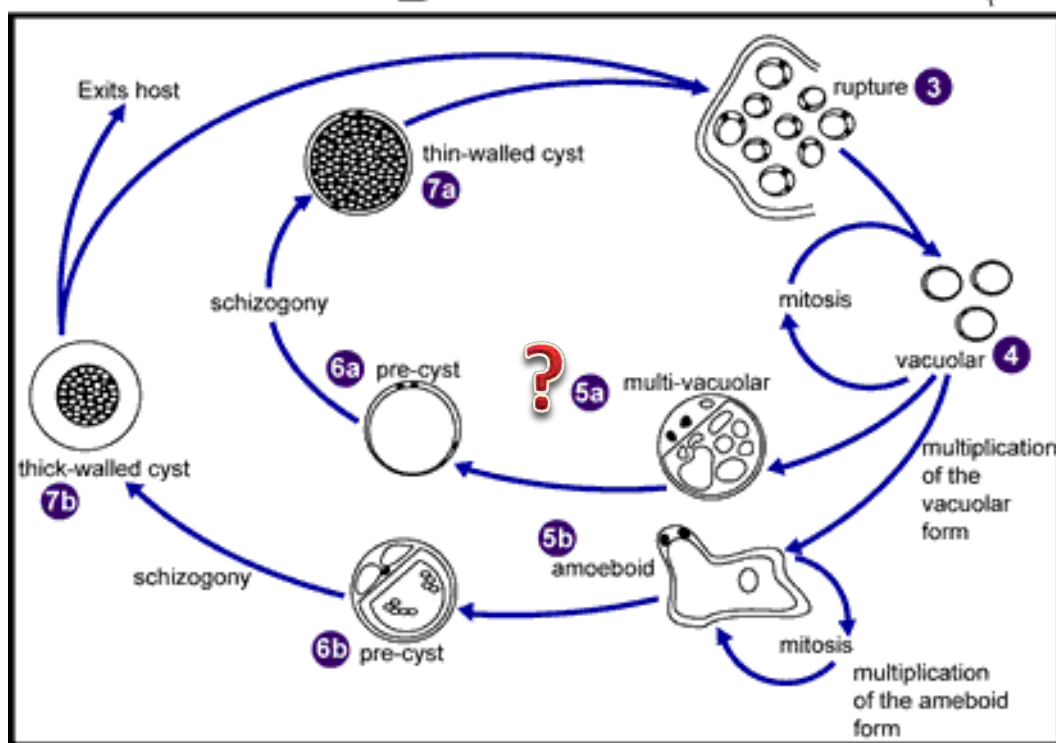
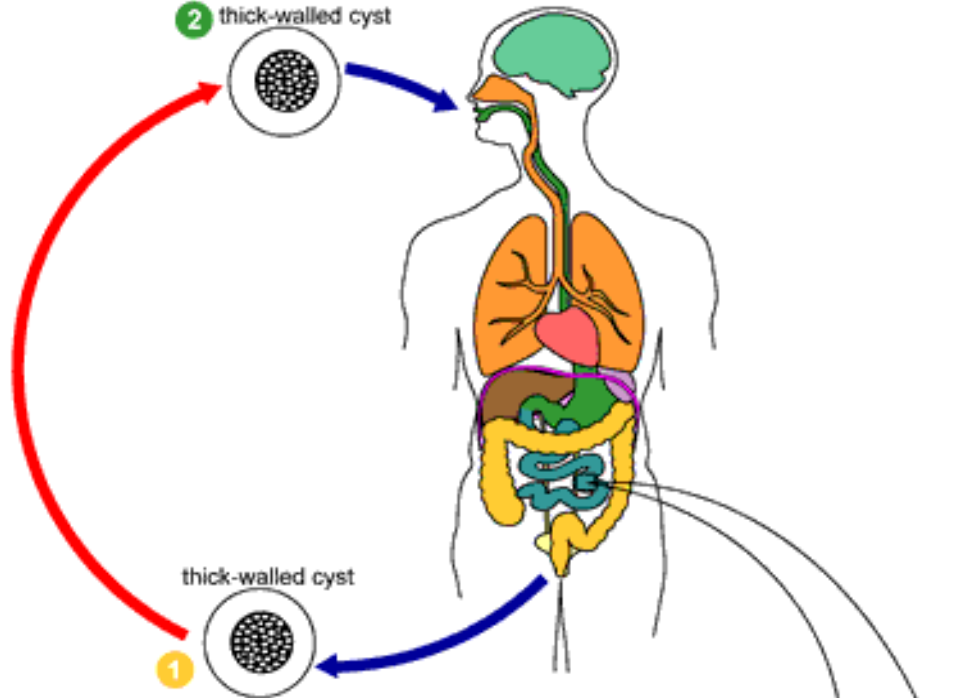
Oocyste de *Sarcocystis* sp.

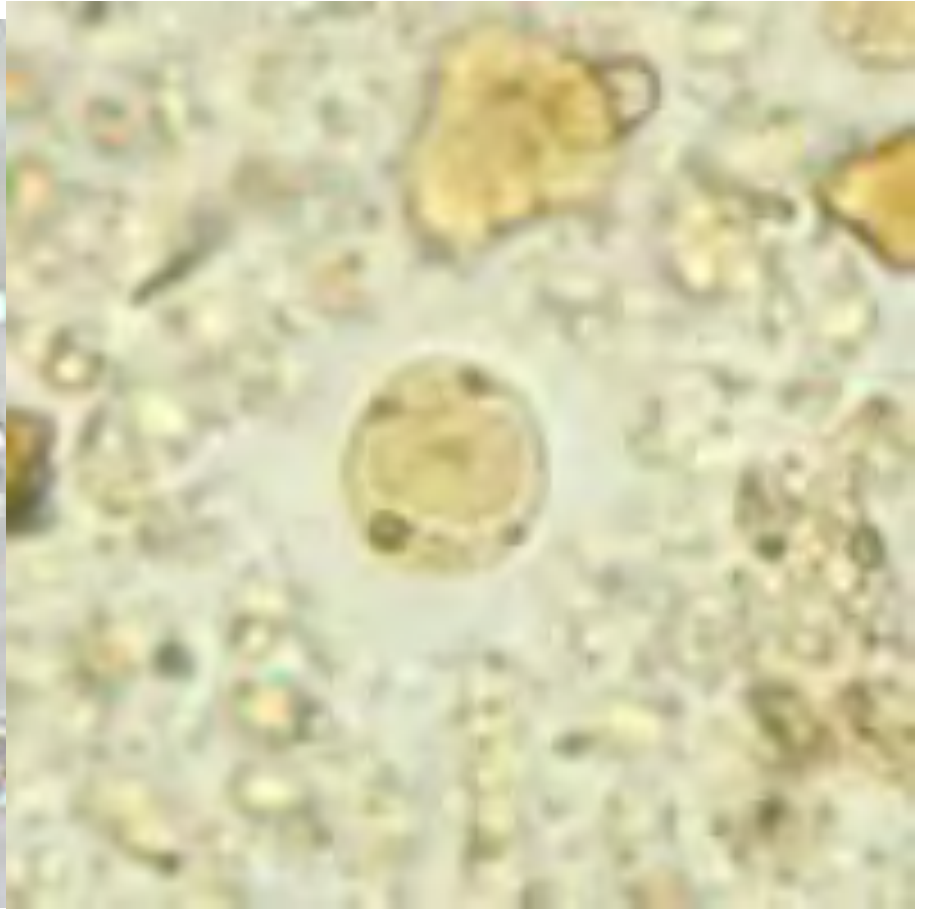
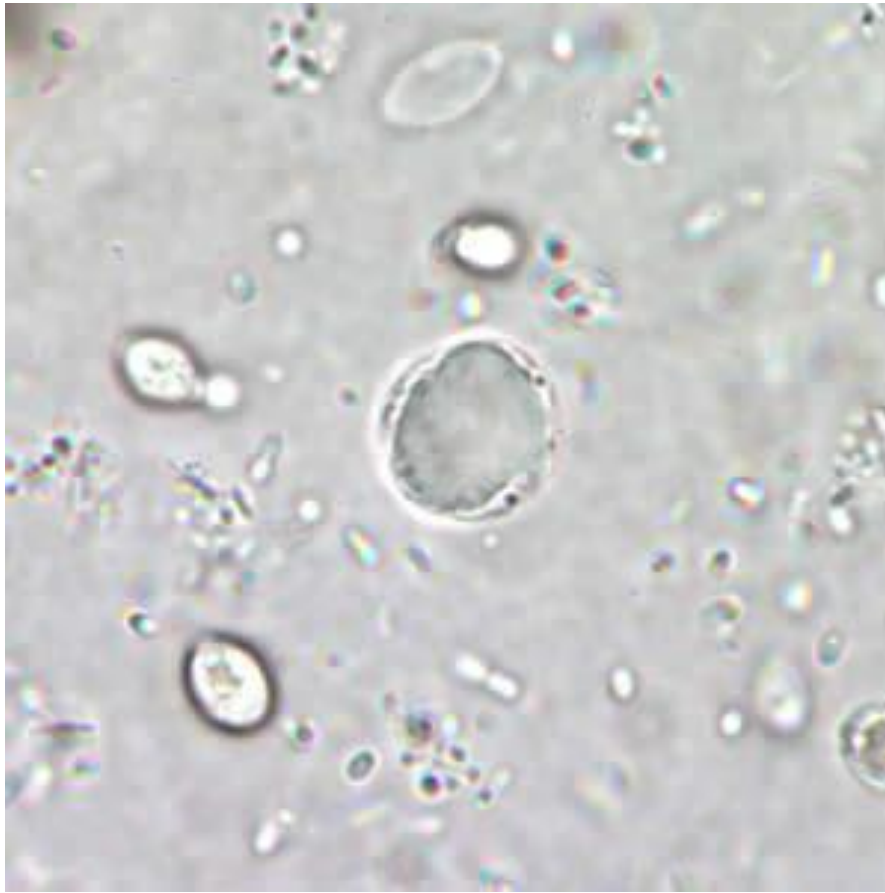


Sarcocyste (kyste) de *Sarcocystis* sp.

BLASTOCYSTIS SP.







**Forme vacuolaire de *B. hominis*
État frais**



Merci de votre attention