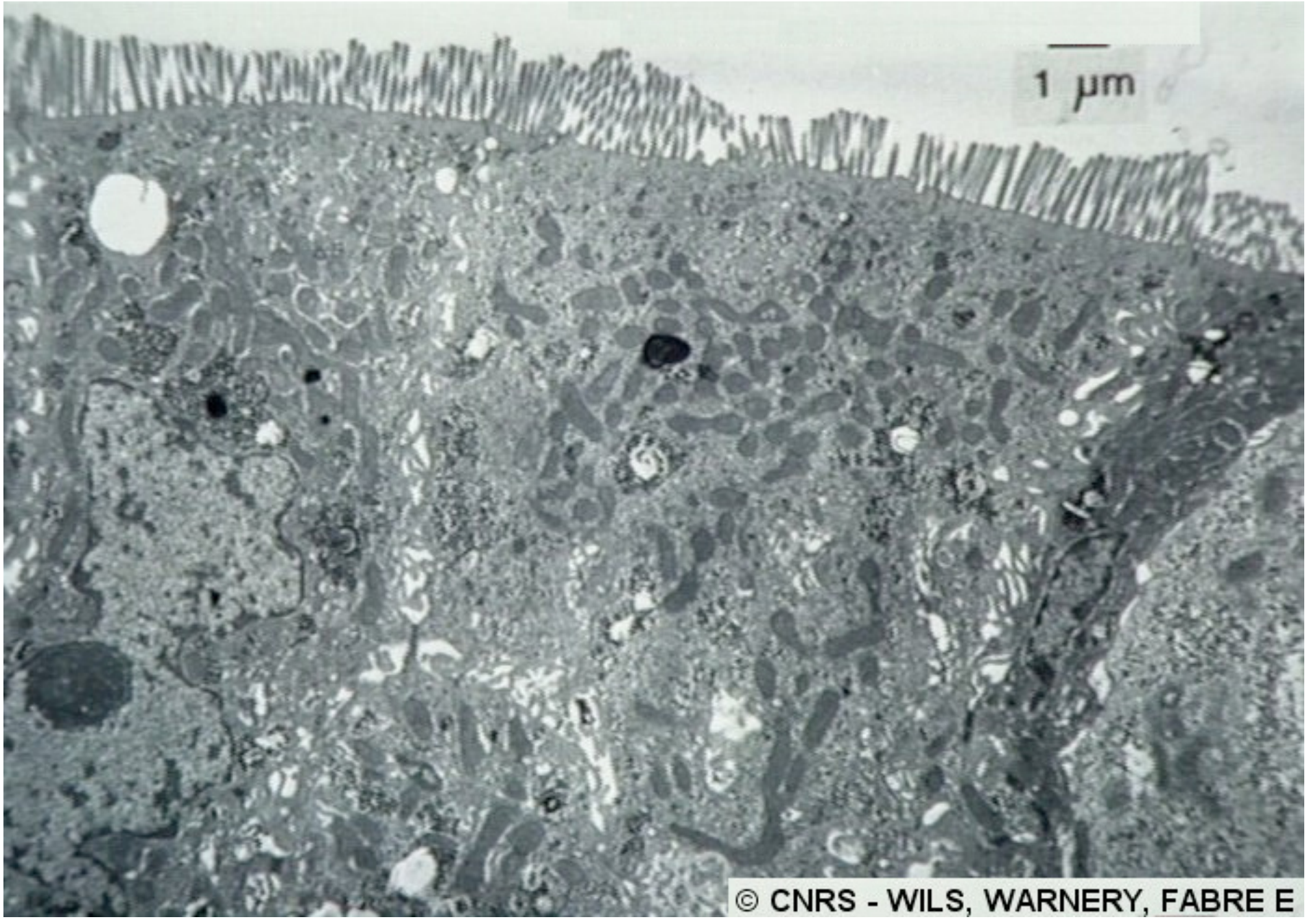
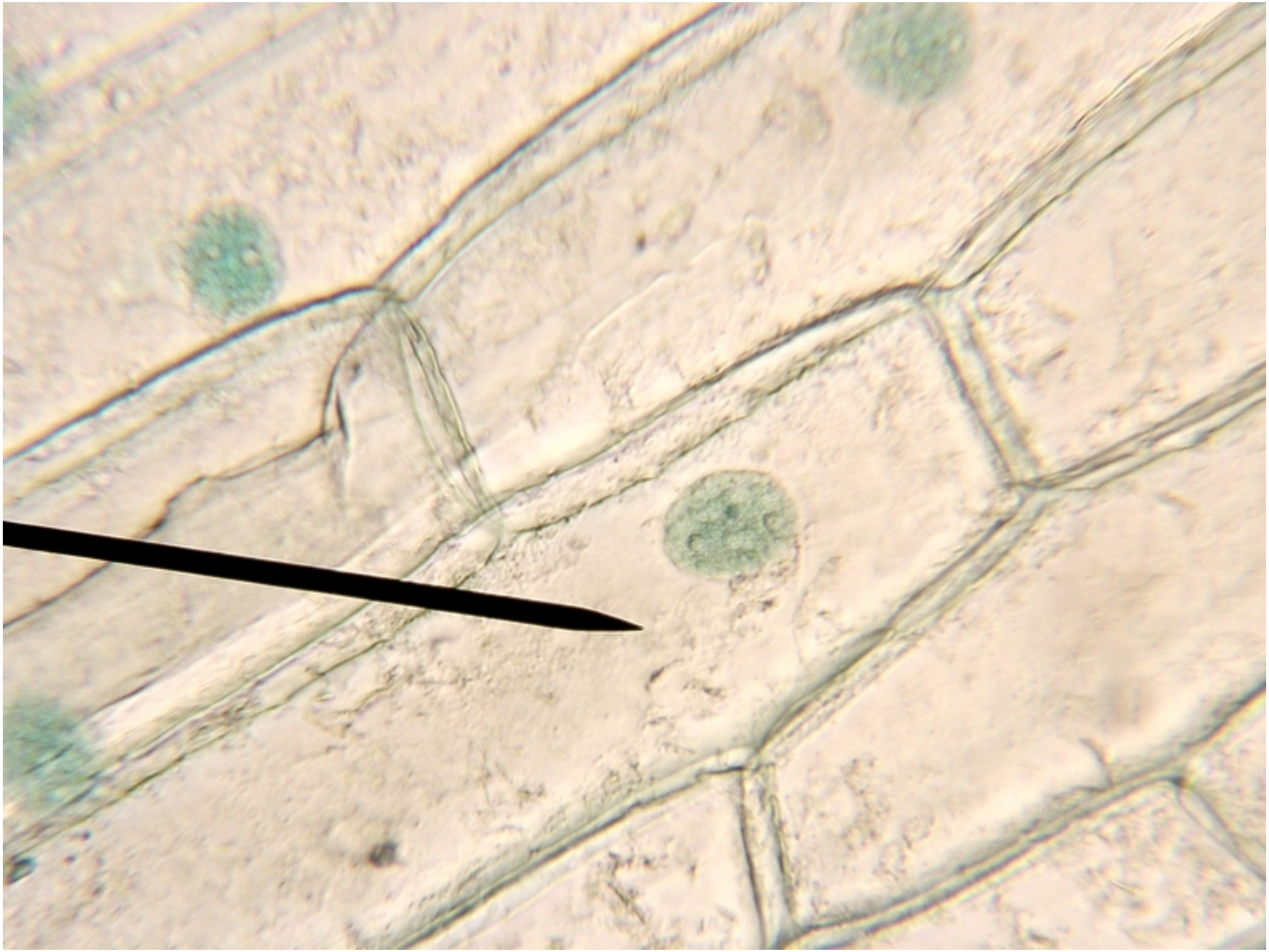
TP BC2 : compartimentation de la cellule eucaryote

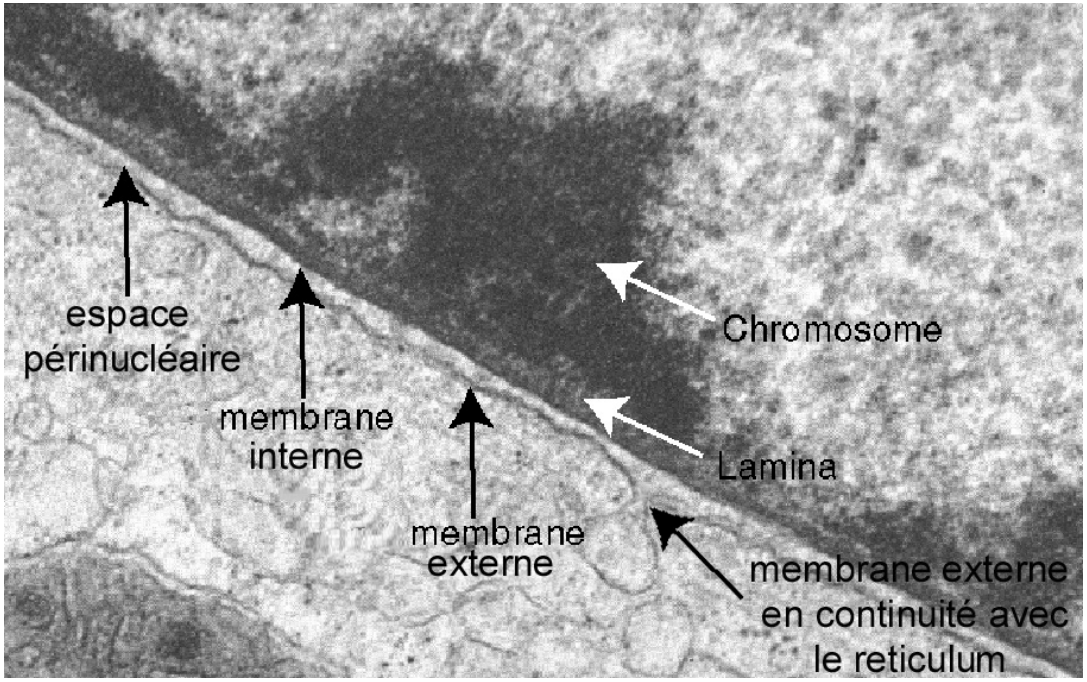


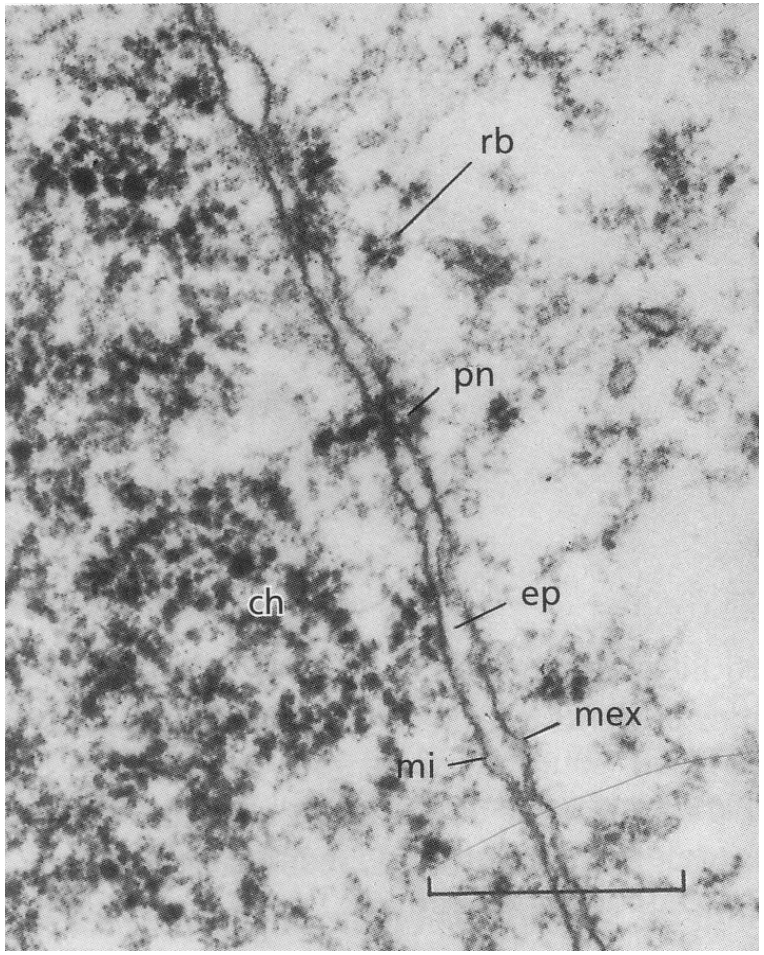
I. Le noyau

Coloration au vert de méthyle

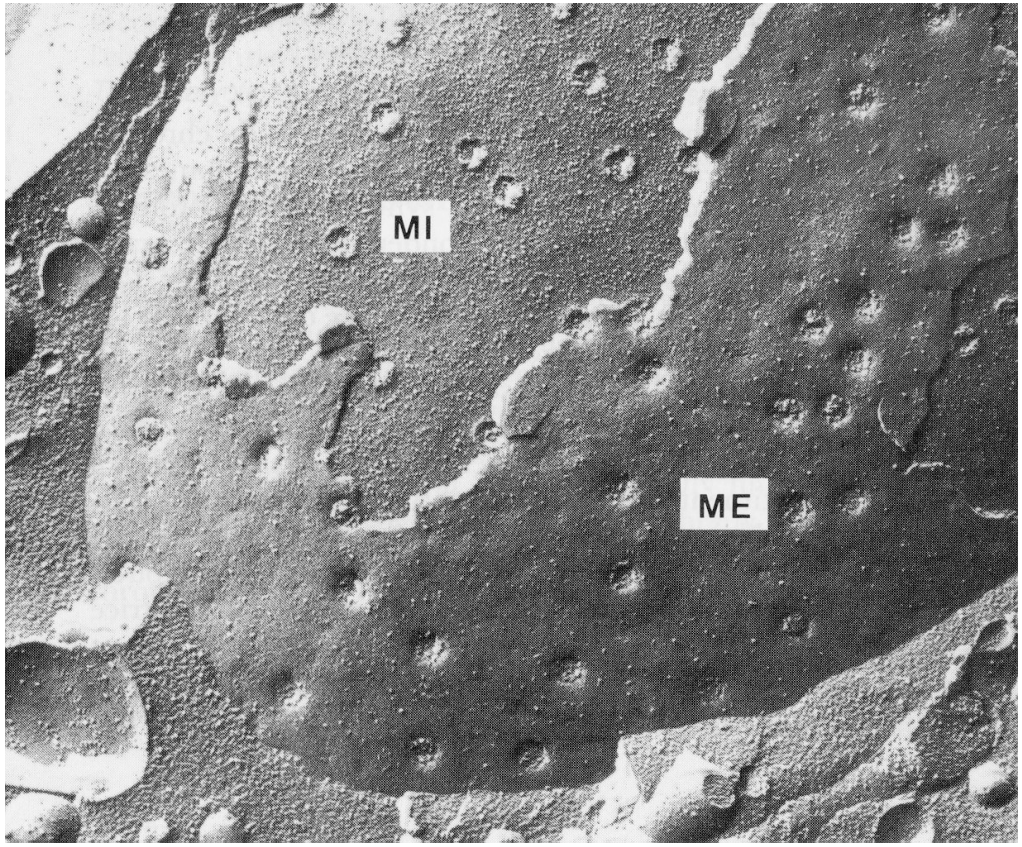


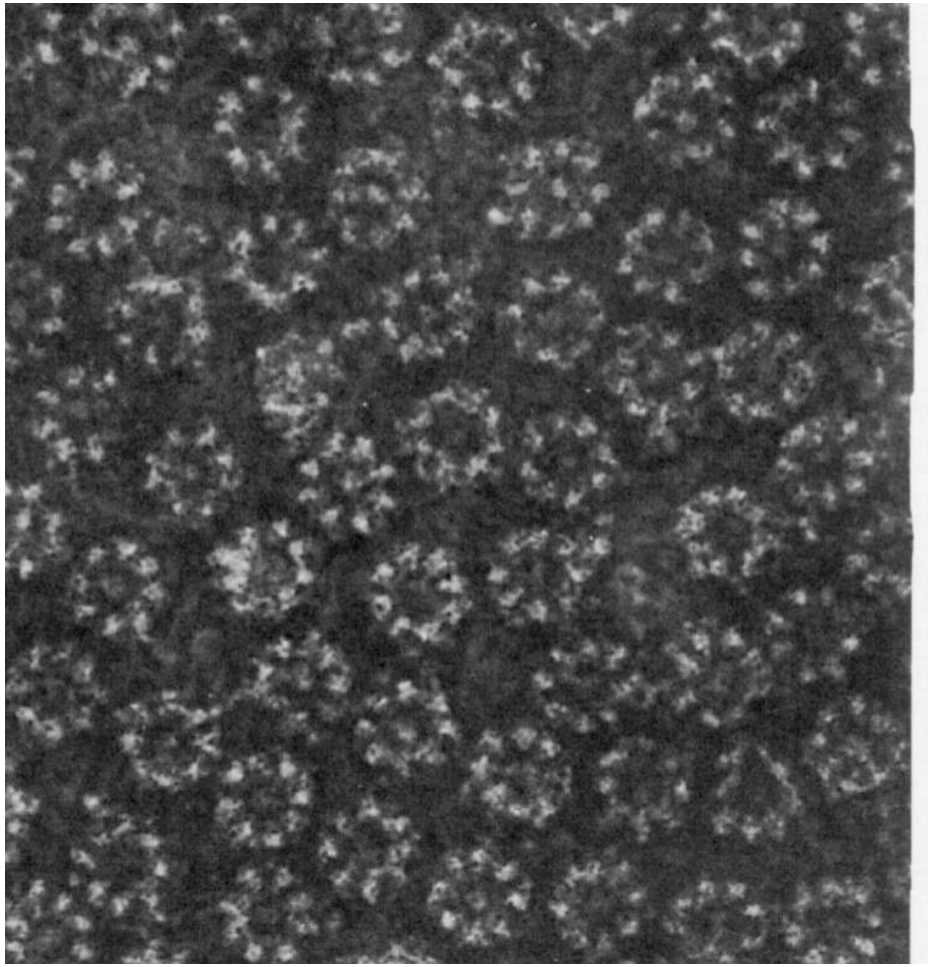
L'enveloppe nucléaire

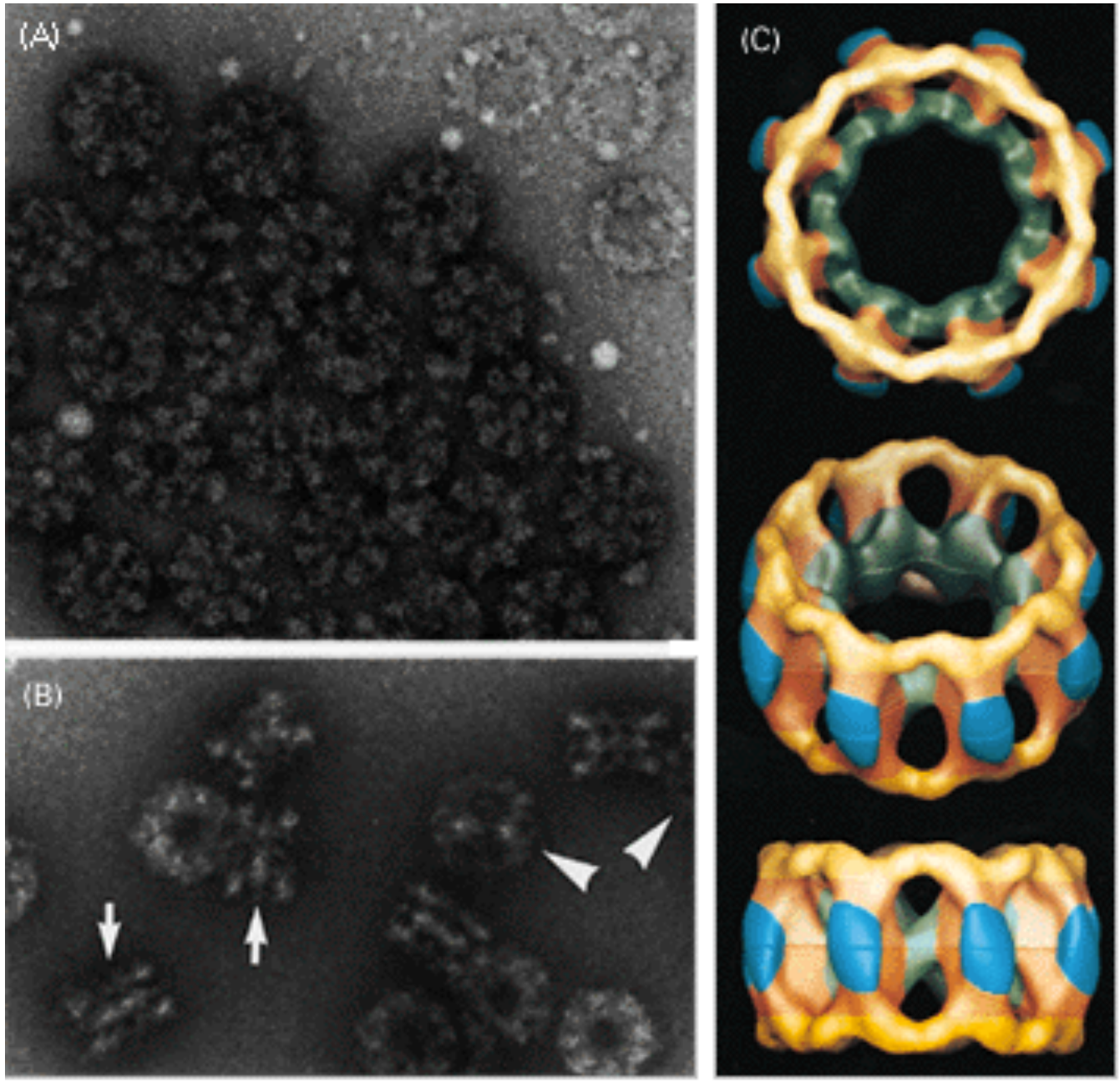


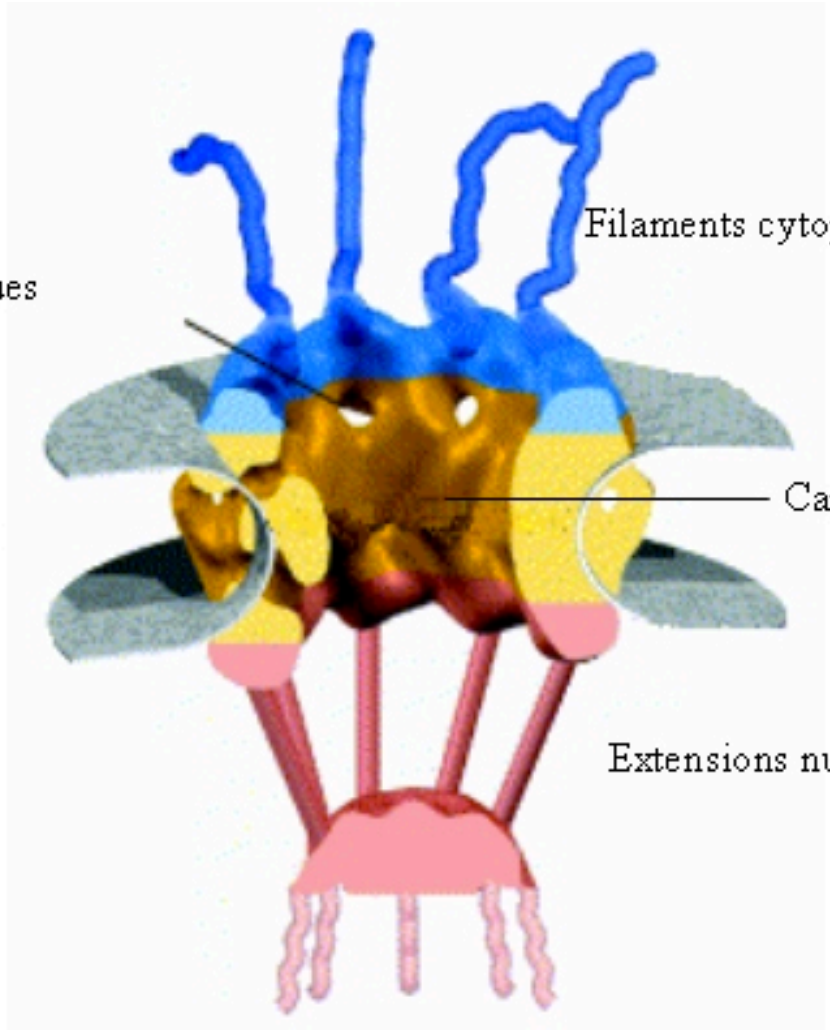


Les pores nucléaires

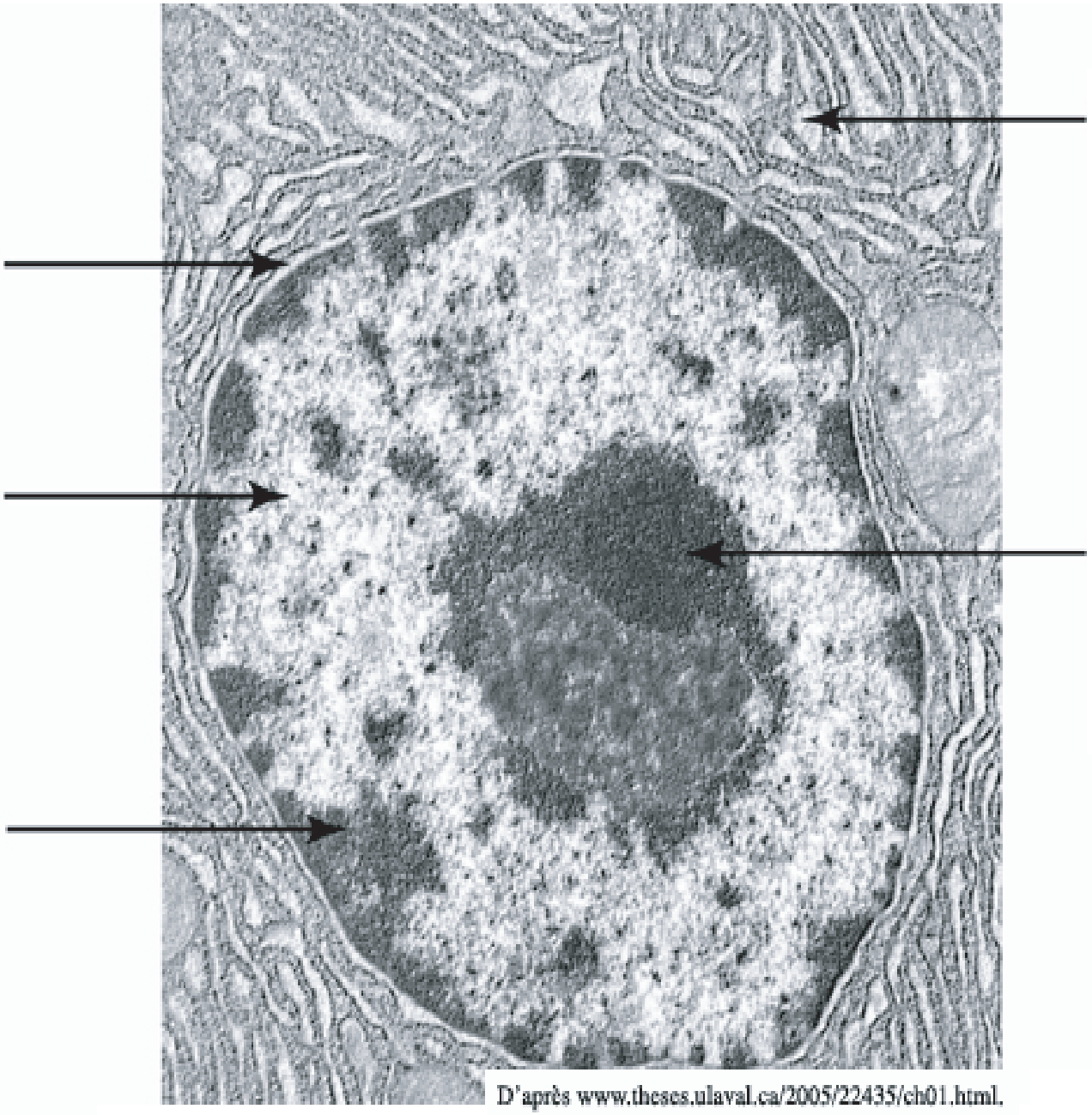




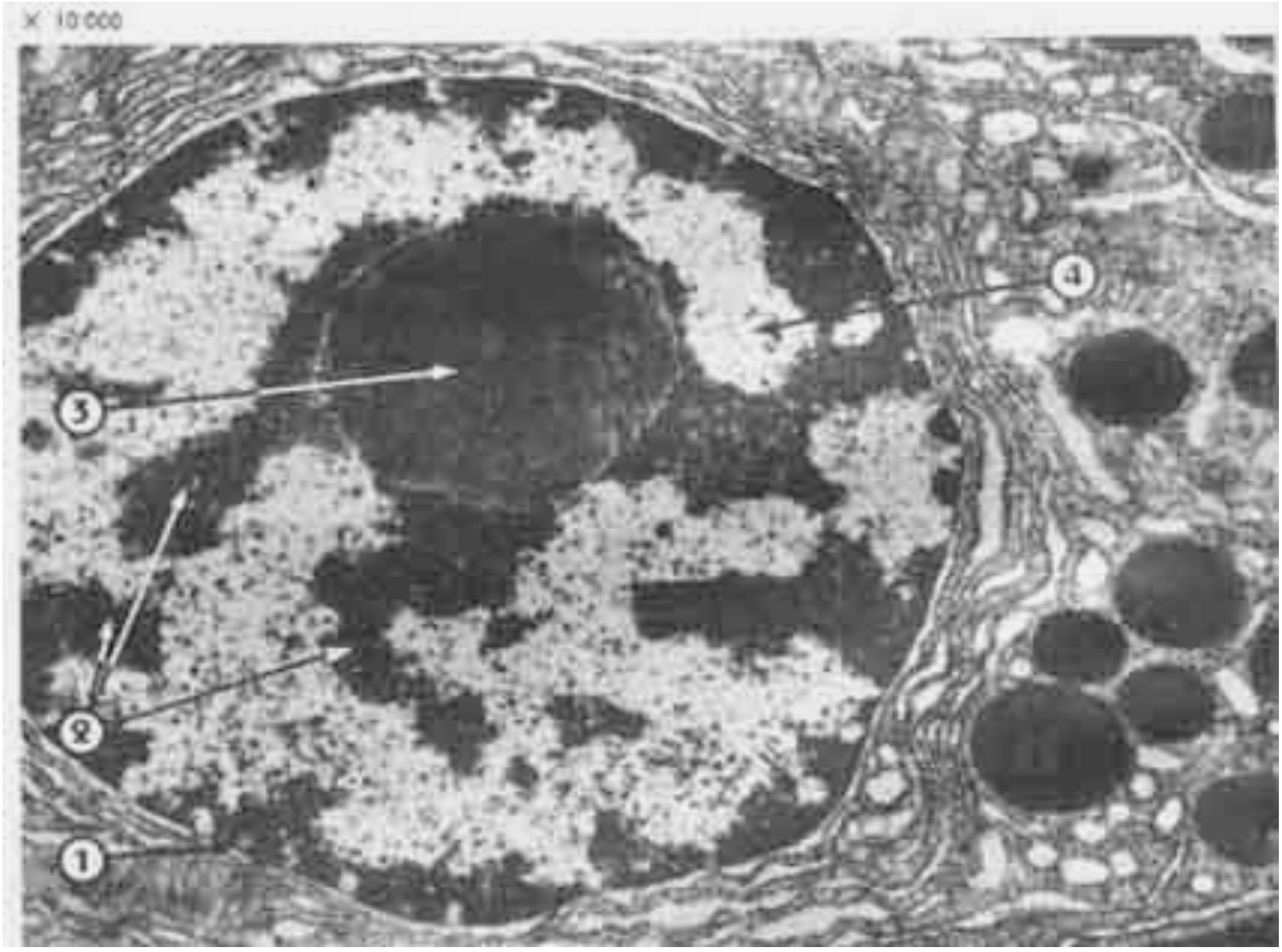

(A)
(B)
(C)
200 nm


Filaments cytoplasmiques
Canaux périphériques
Membrane externe
Canal central
Lumen
Membrane interne
Extensions nucléaires

Contenu du noyau

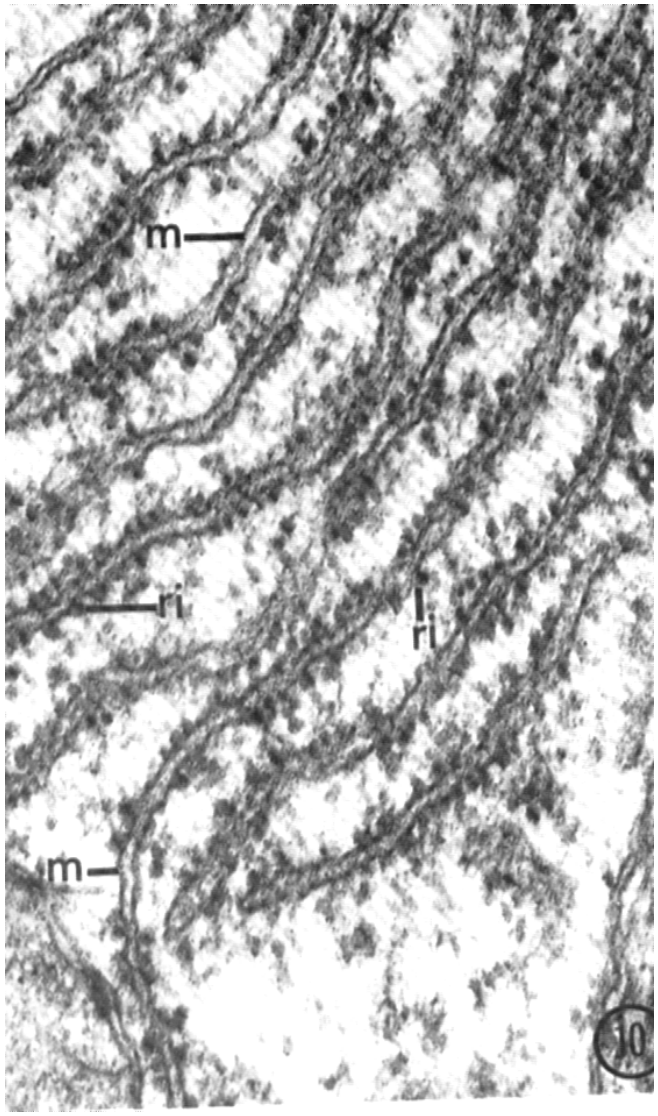


D'après www.theses.ulaval.ca/2005/22435/ch01.html.

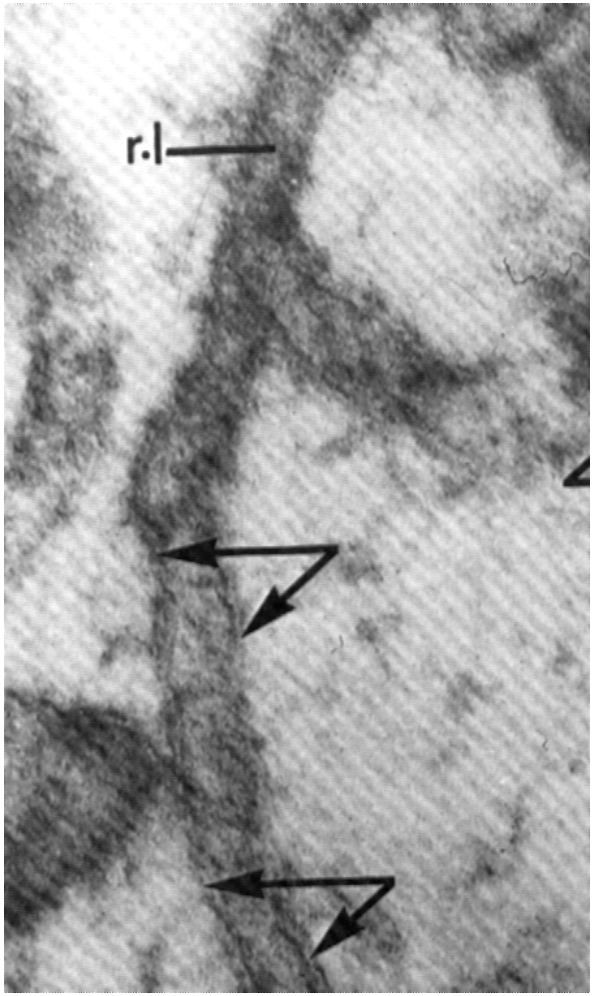

× 10 000
1
2
3
4

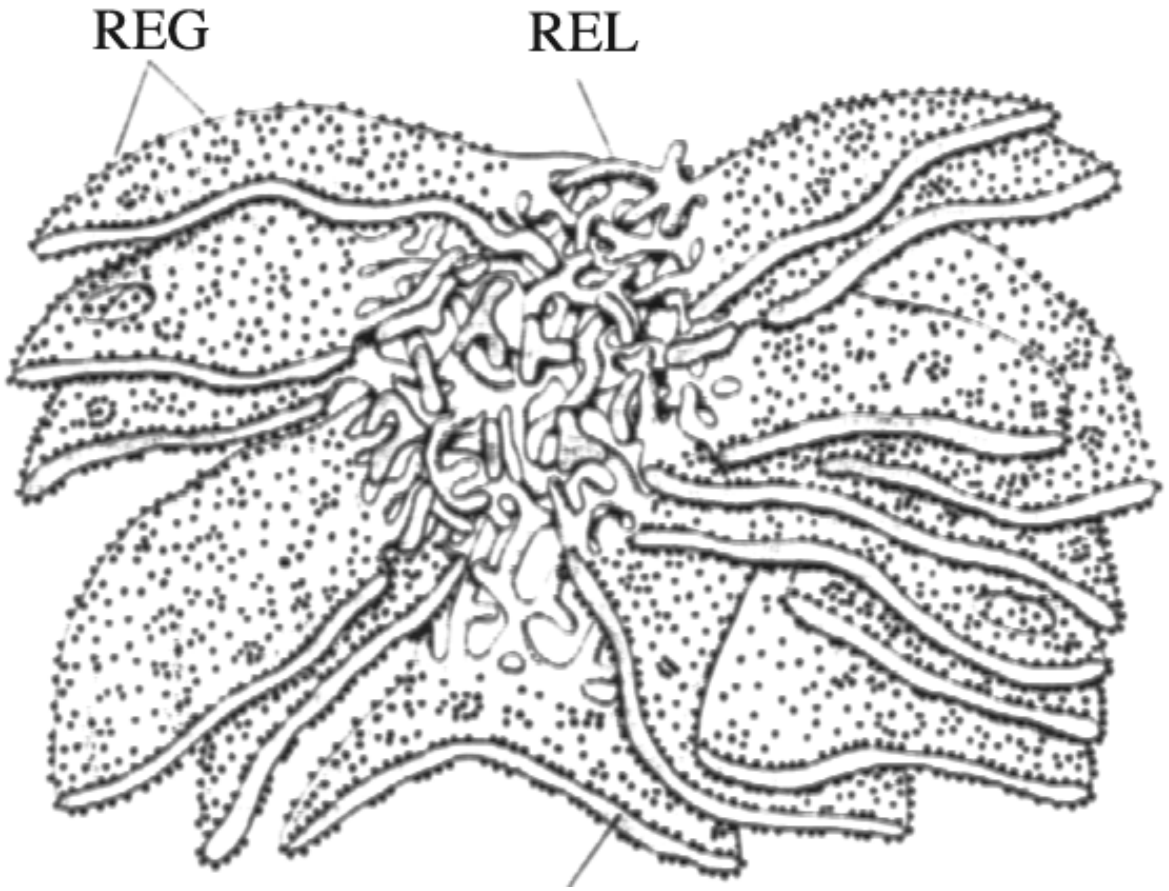
II. Les organites à simple membrane

1. Le réticulum endoplasmique granuleux



1. Le réticulum endoplasmique lisse





2. L’appareil de Golgi

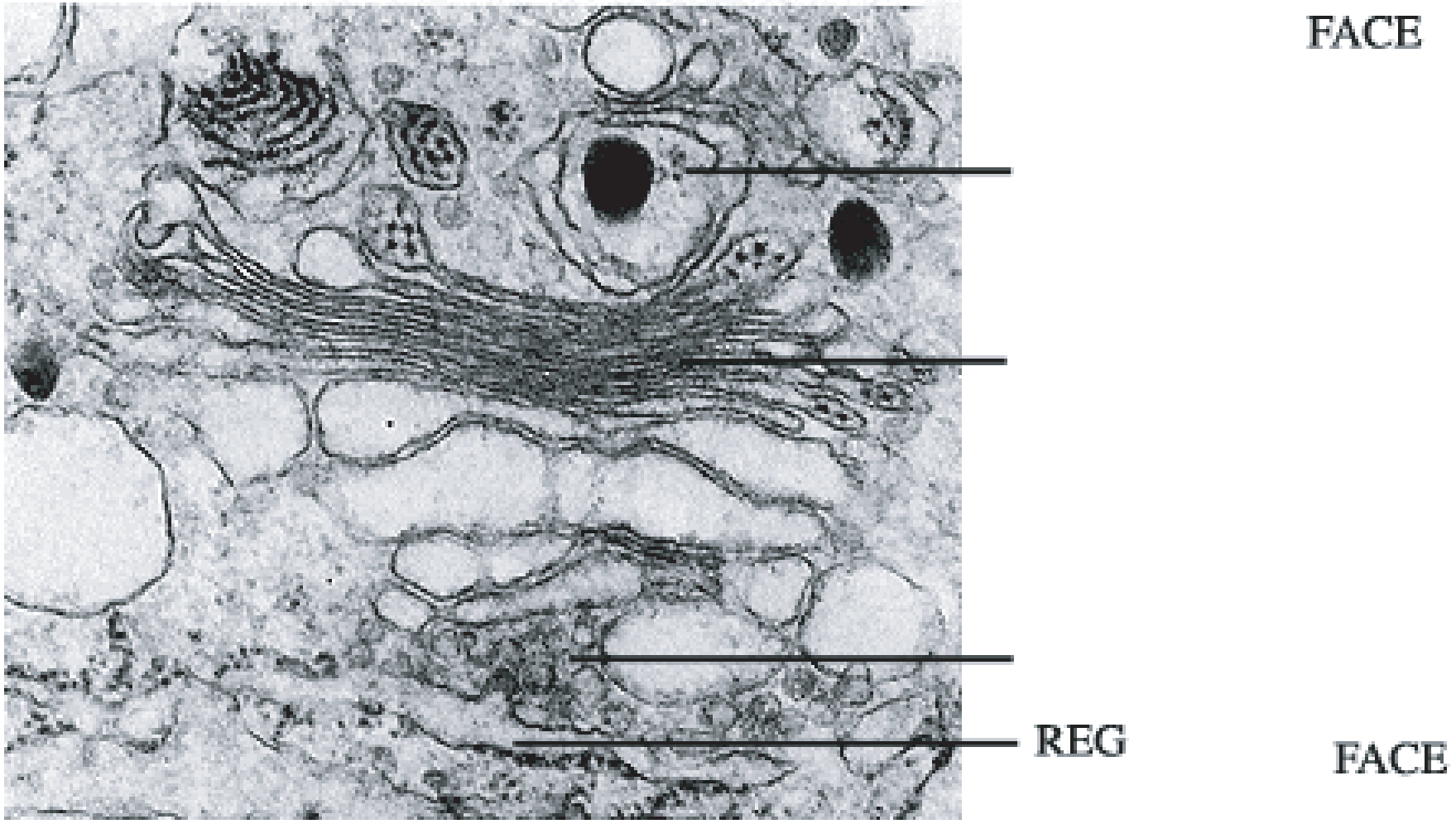
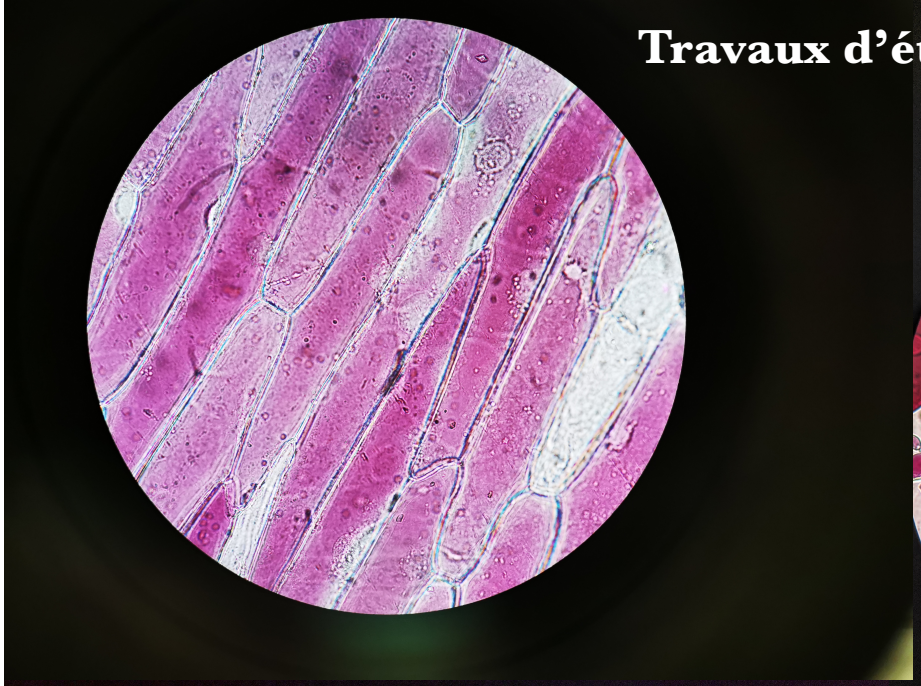


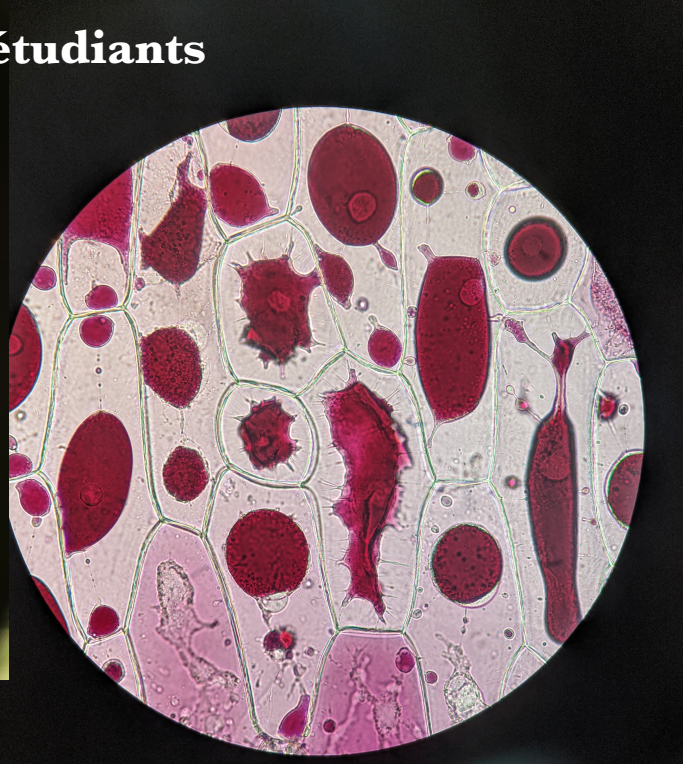
Figure 10 : appareil de Golgi au MET

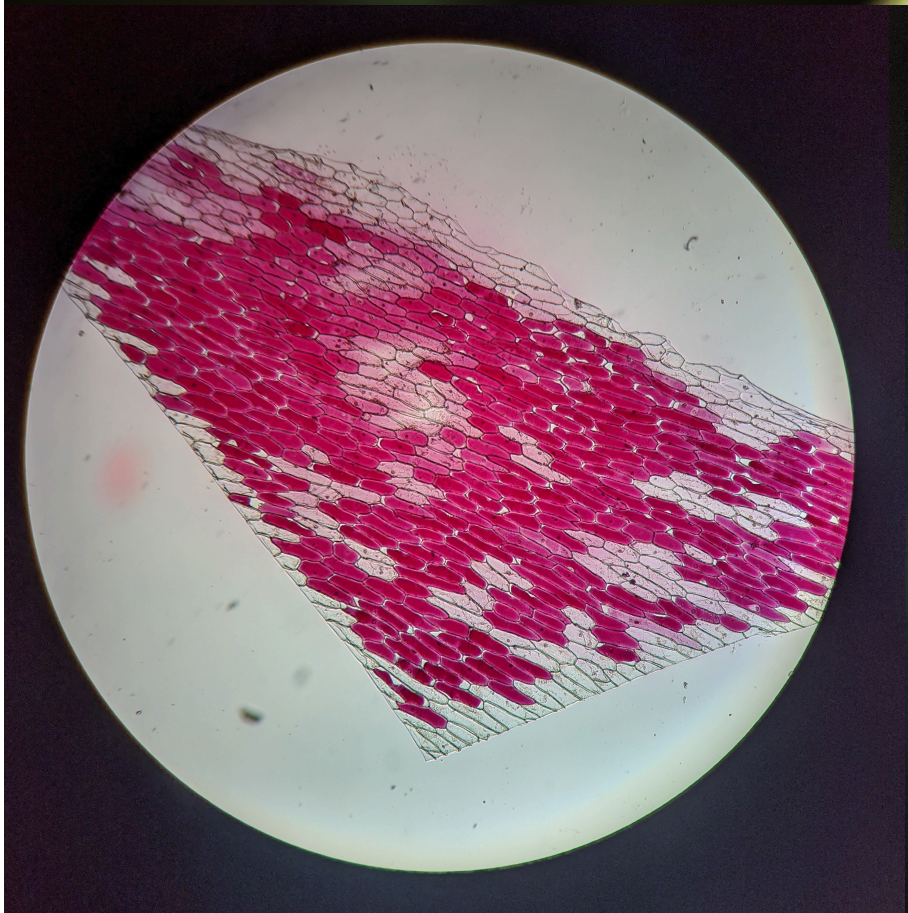
3. La vacuole

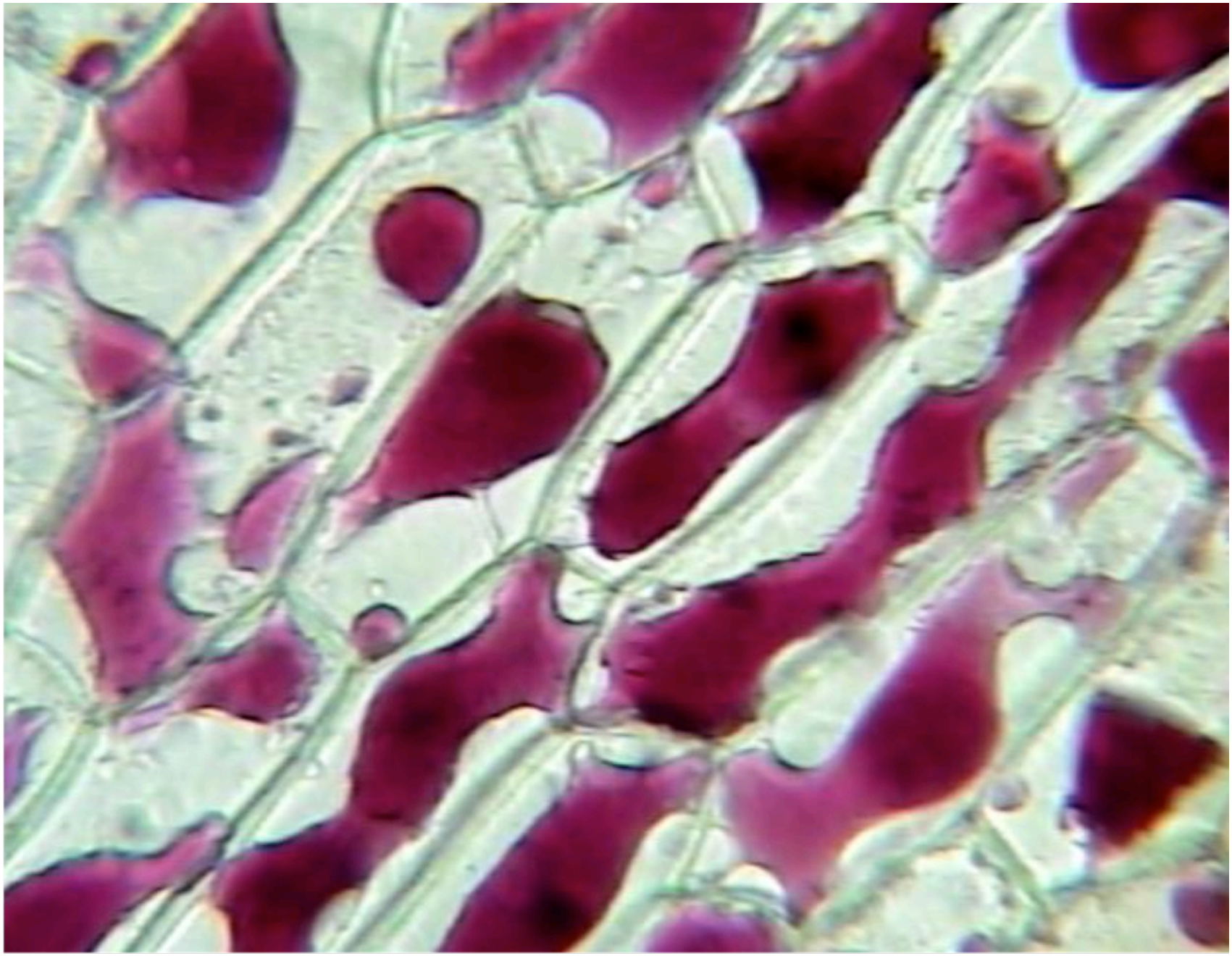
cellules turgescentes

Travaux d’étudiants

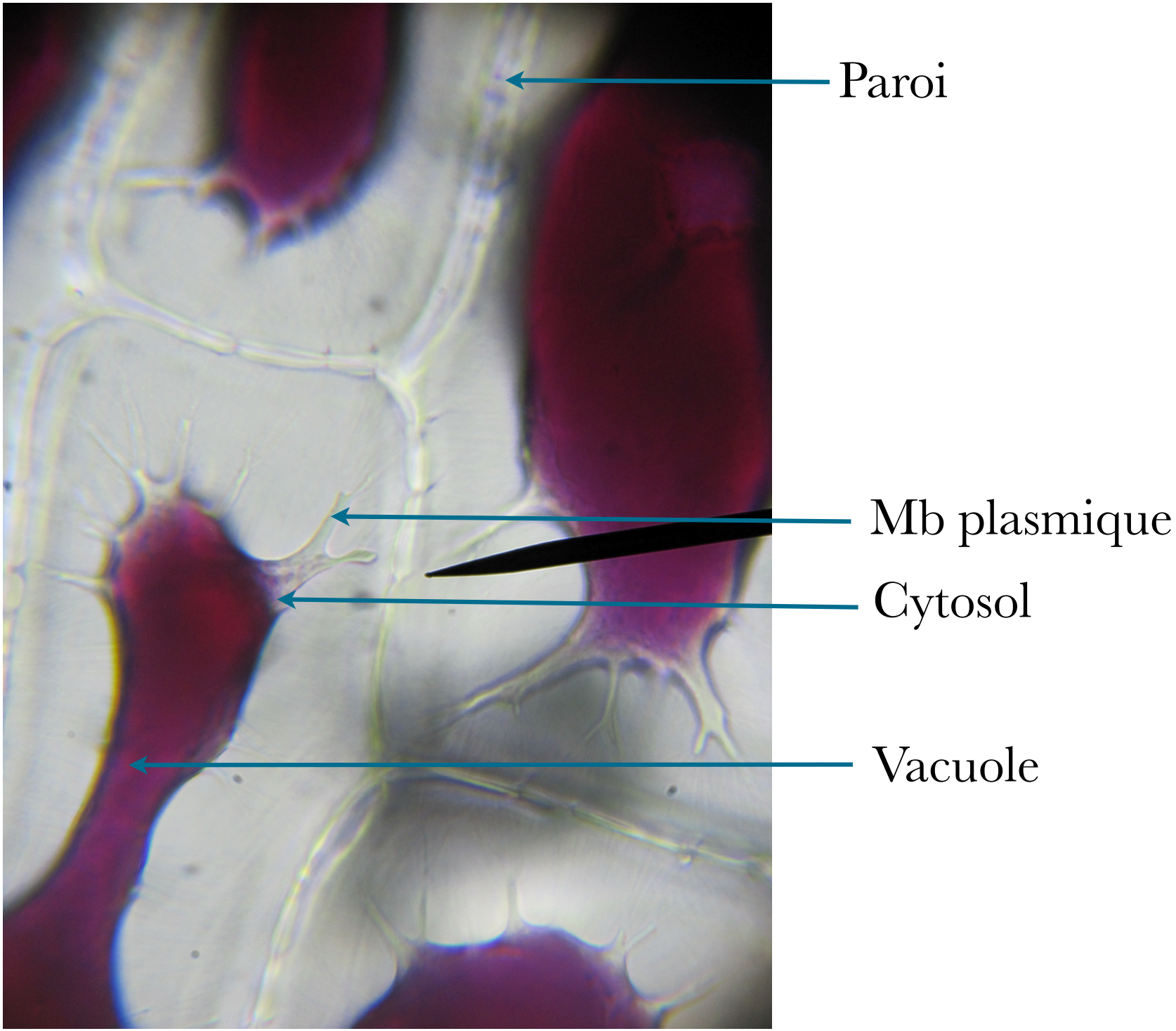


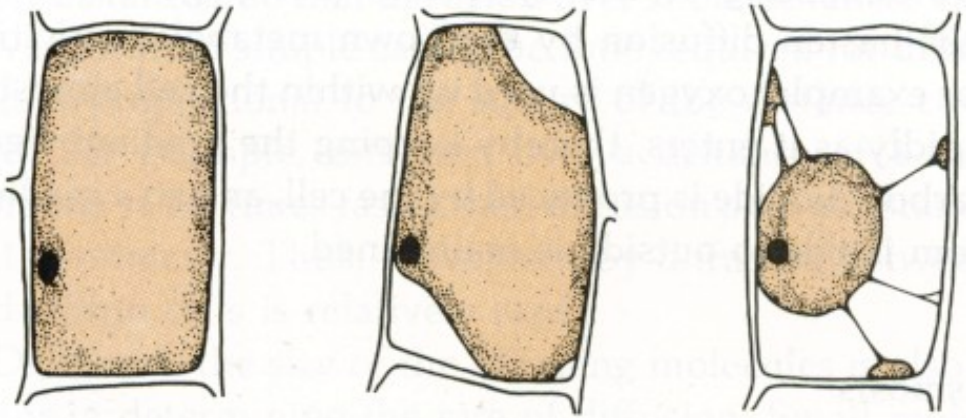


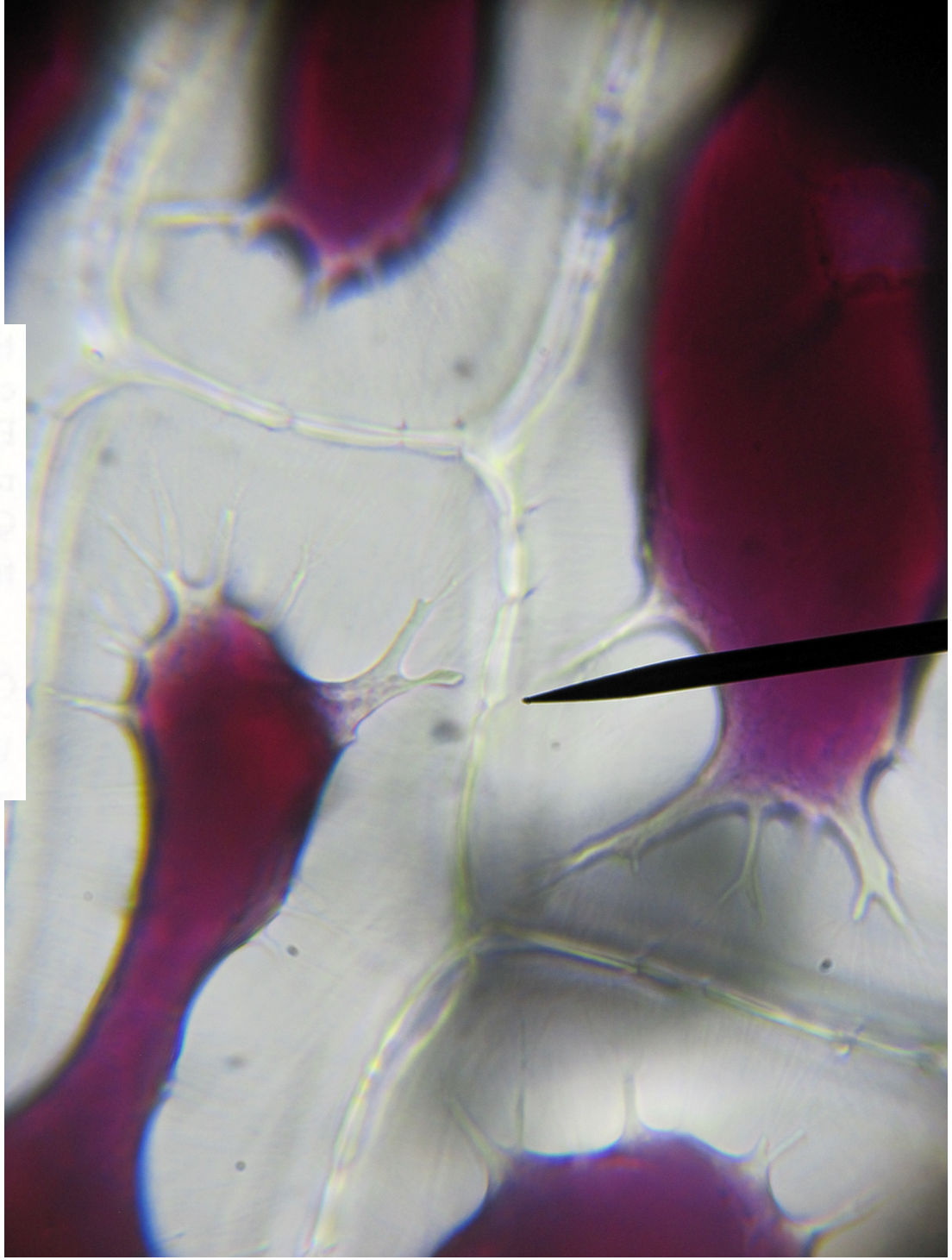


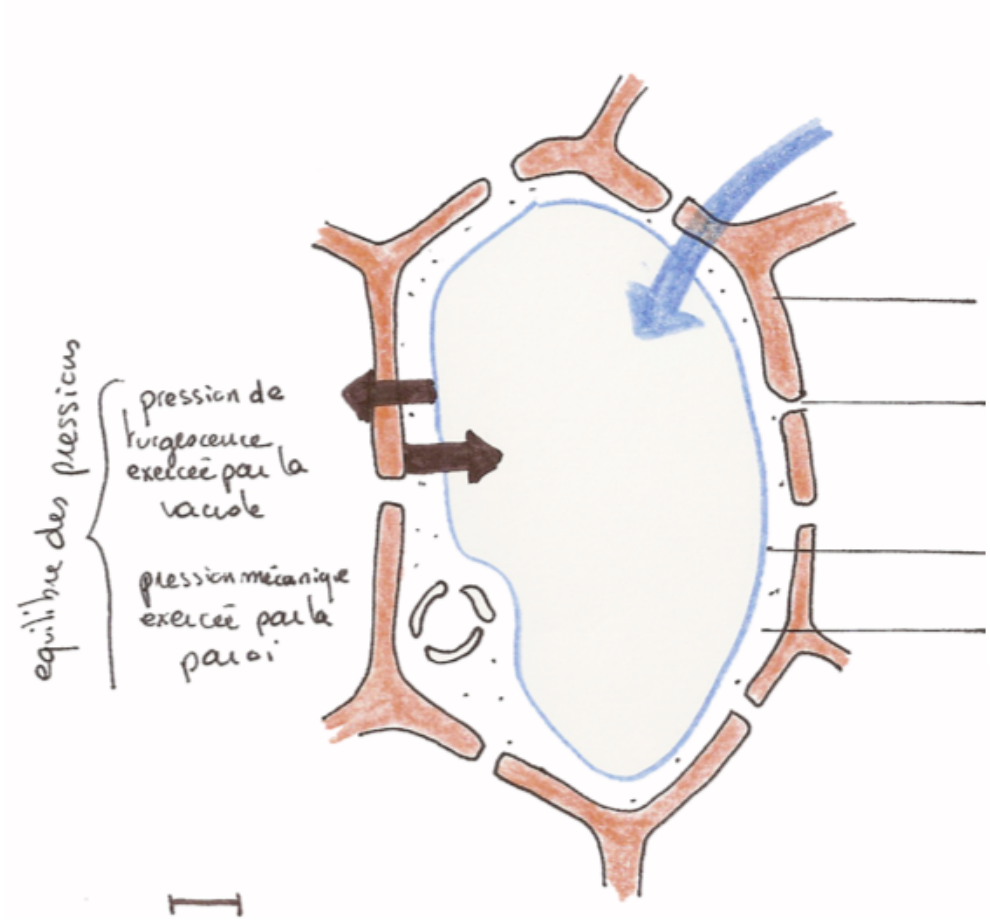


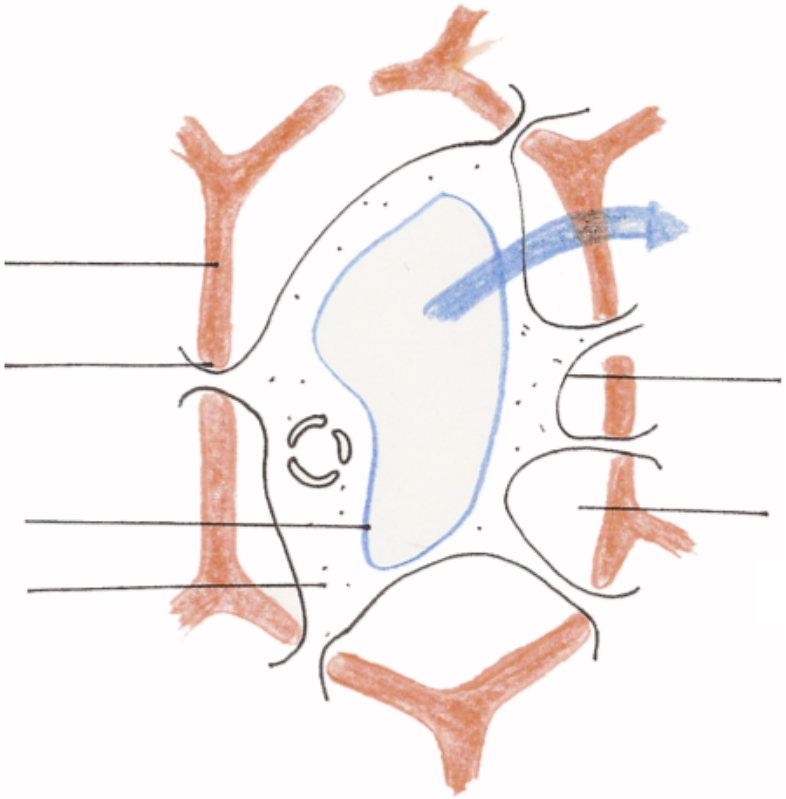
cellules plasmolysées


Paroi
Mb plasmique
Cytosol
Vacuole

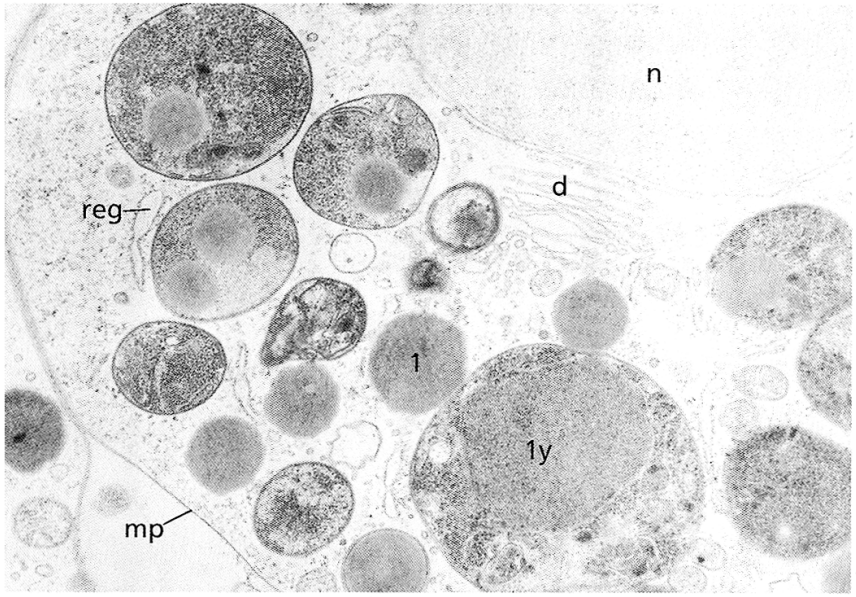

(a)
(b)
(c)




équilibre des pressions
pression de turgescence exercée par la vacuole
pression mécanique exercée par la paroi



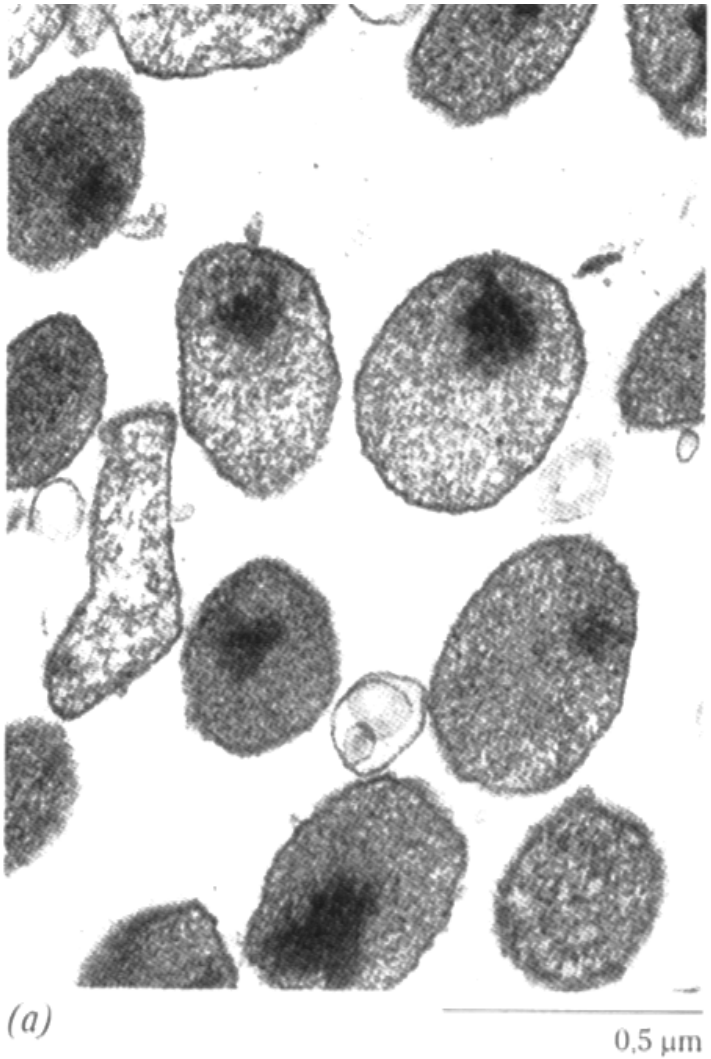
4 et 5. Les lysosomes et péroxysomes



Lysosome dans une cellule phagocytaire (x 30 000).

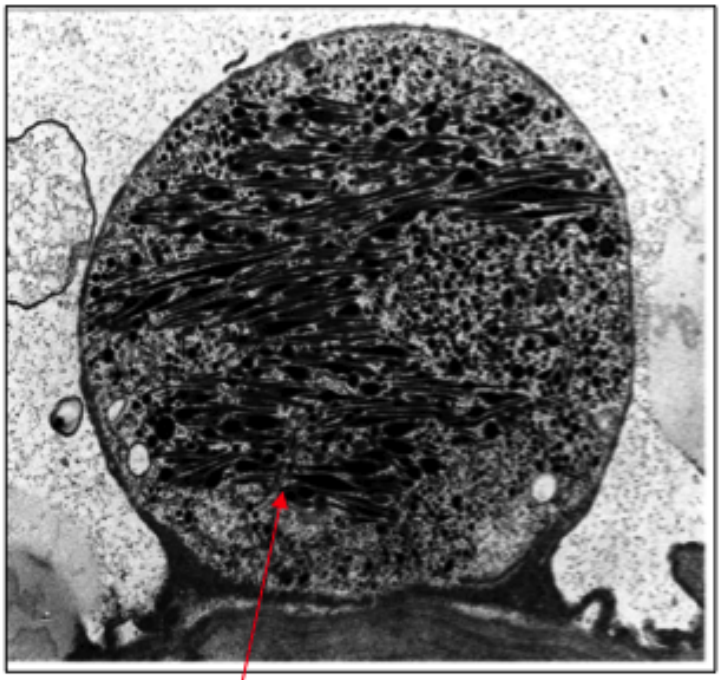
Archéocyte d'éponge. Les très nombreux lysosomes présents dans le cytoplasme contiennent des fragments cellulaires d'origine exogène en cours de digestion (résidus de cellules voisines dégénérées) : ce sont des lysosomes secondaires (ly).

Noyau (n) ; mitochondrie (m) ; dictyosome (d) ; goutelettes lipidiques (l) ; membrane plasmique (mp) ; réticulum endoplasmique granulaire (reg). *(Cliché L. de Vos.)*

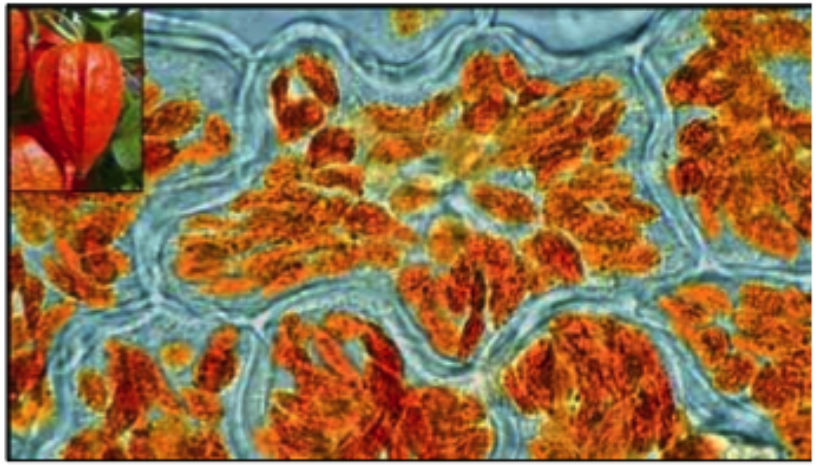


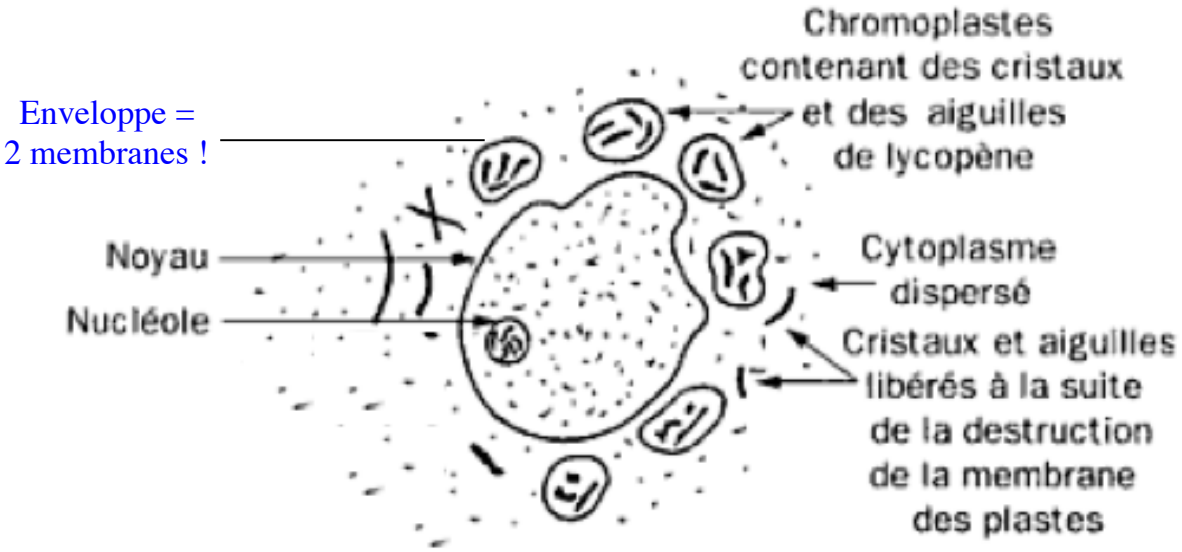
III. Les organites semi-autonomes

A. <u>Les amyloplastes et chromoplastes chez les végétaux</u>



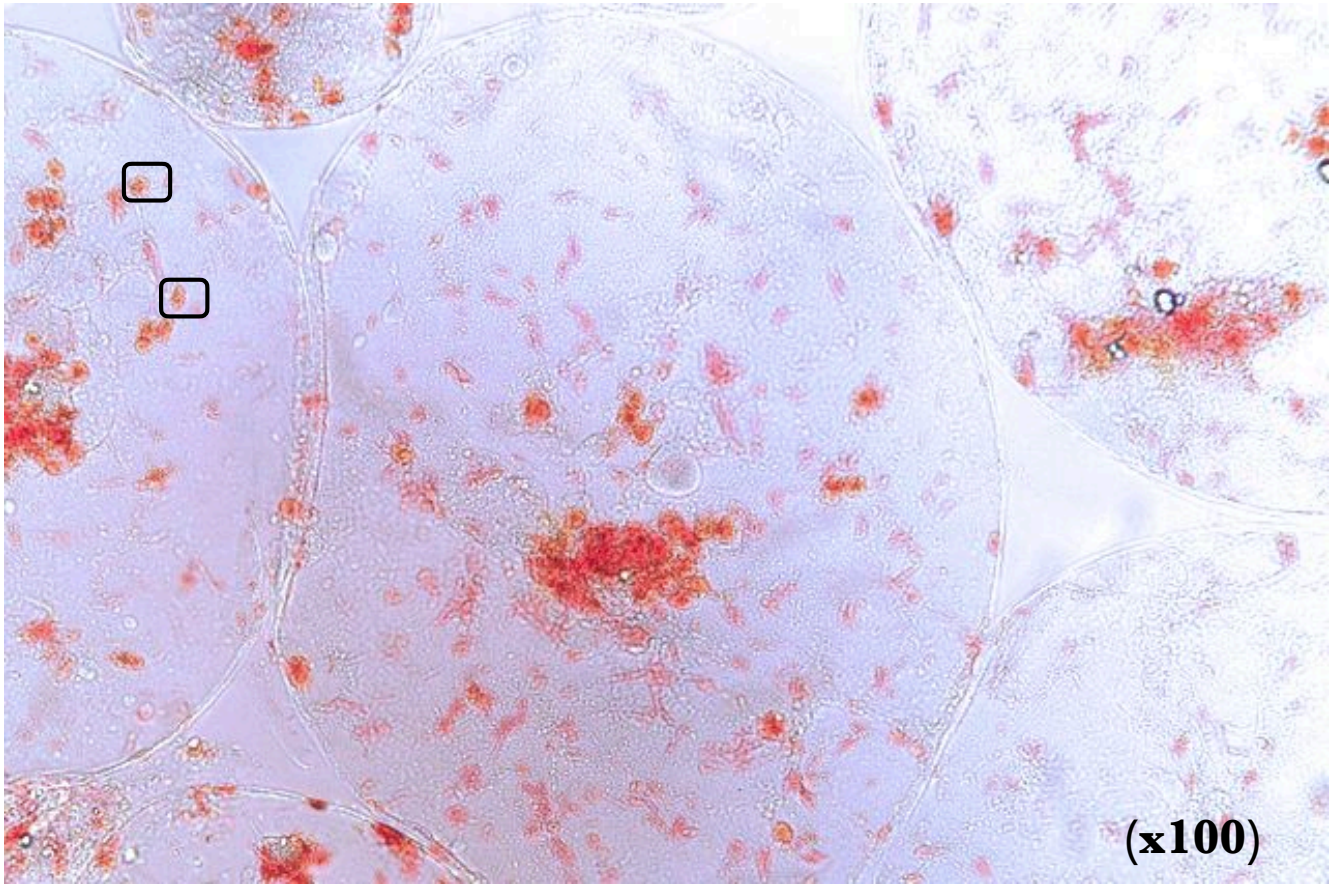
Caroténoïdes



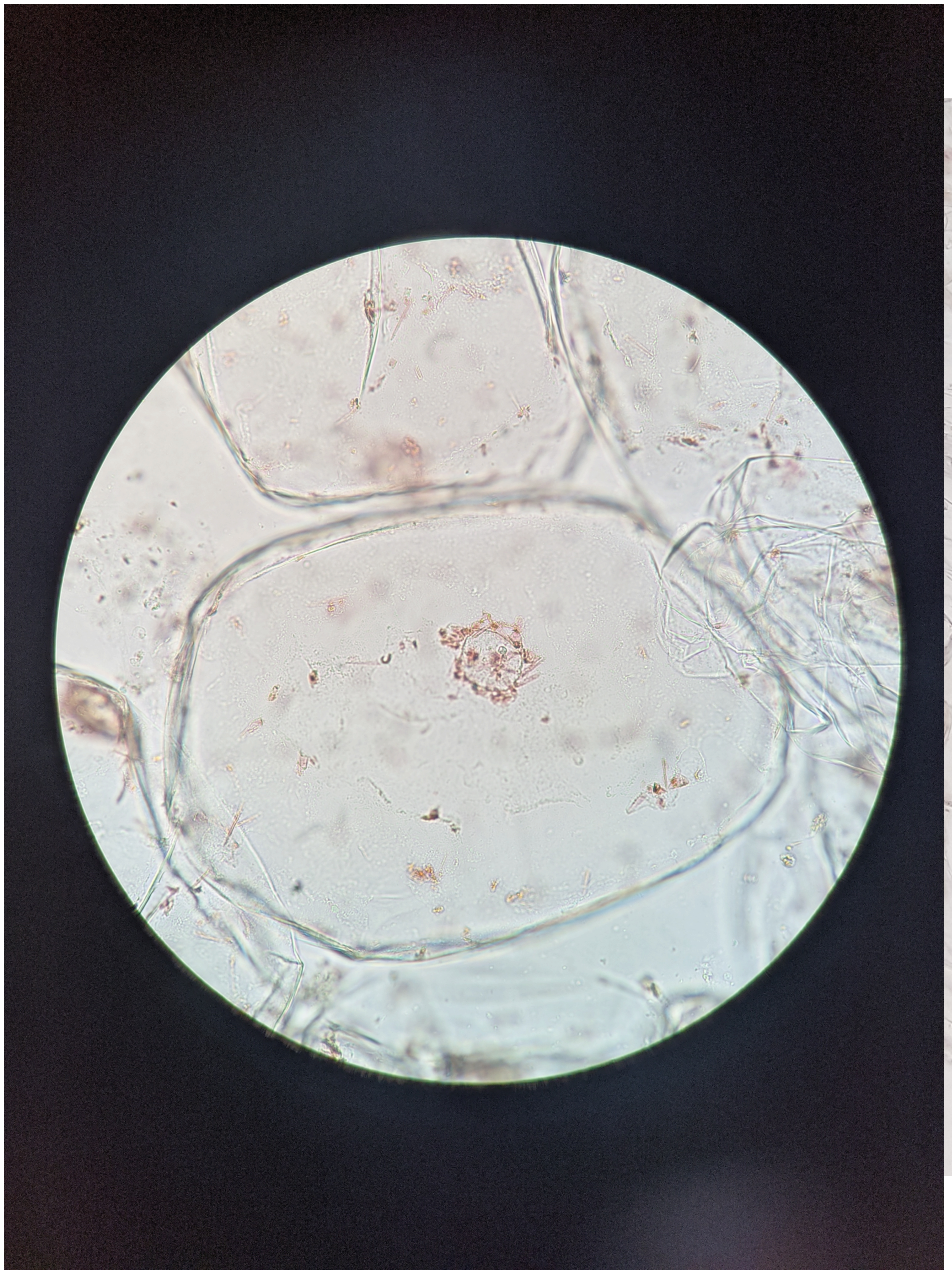


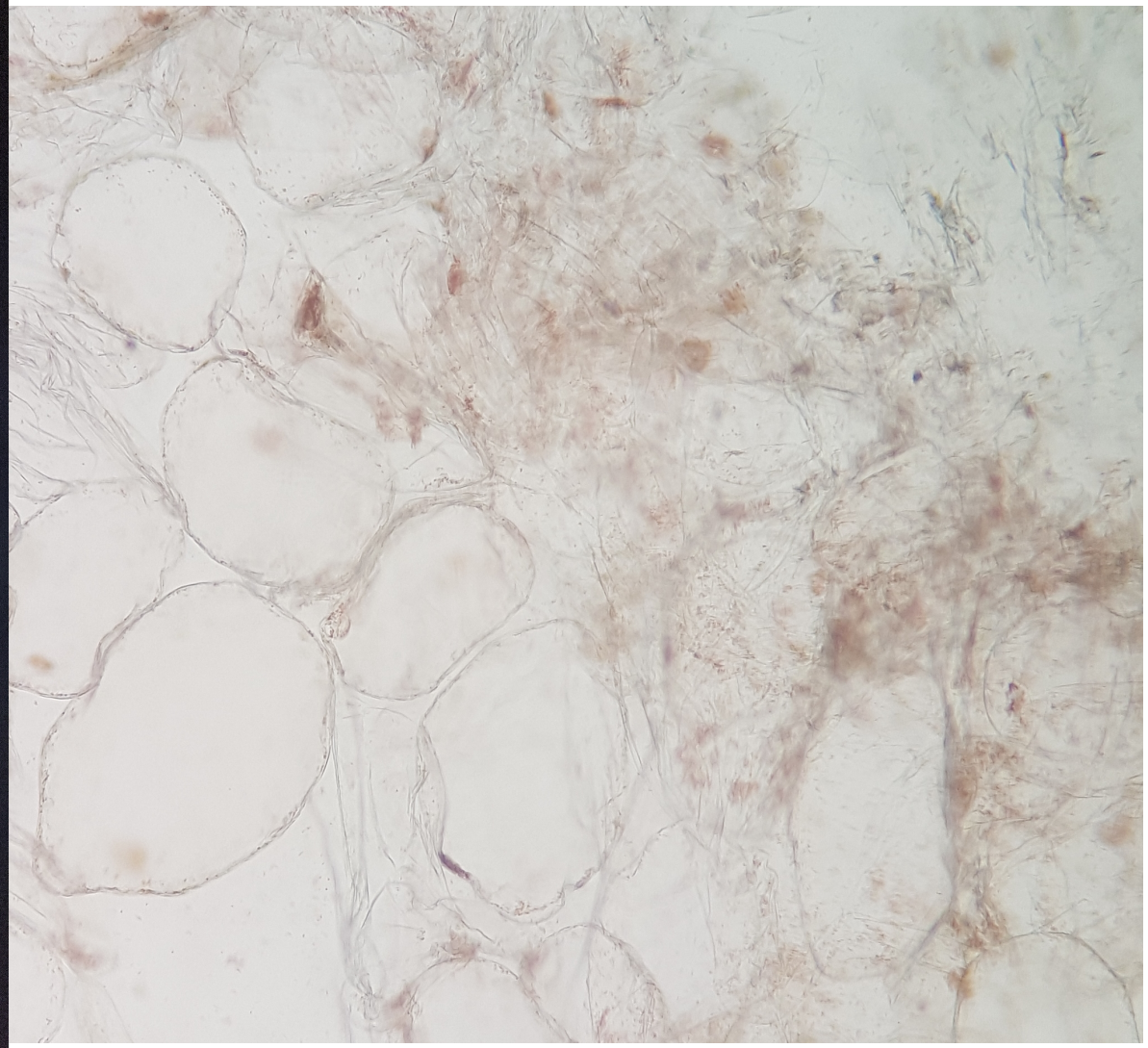
Chromoplaste de tomate

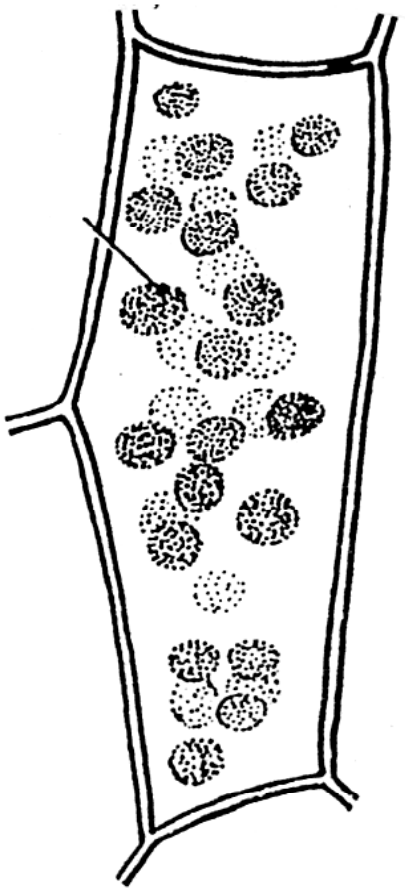
mikroscopia.com

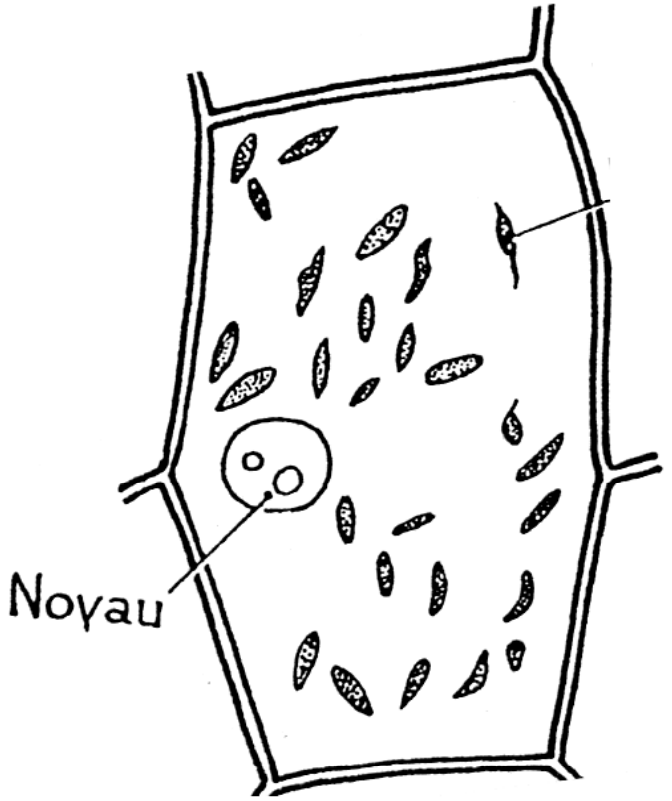


Travaux d'étudiants



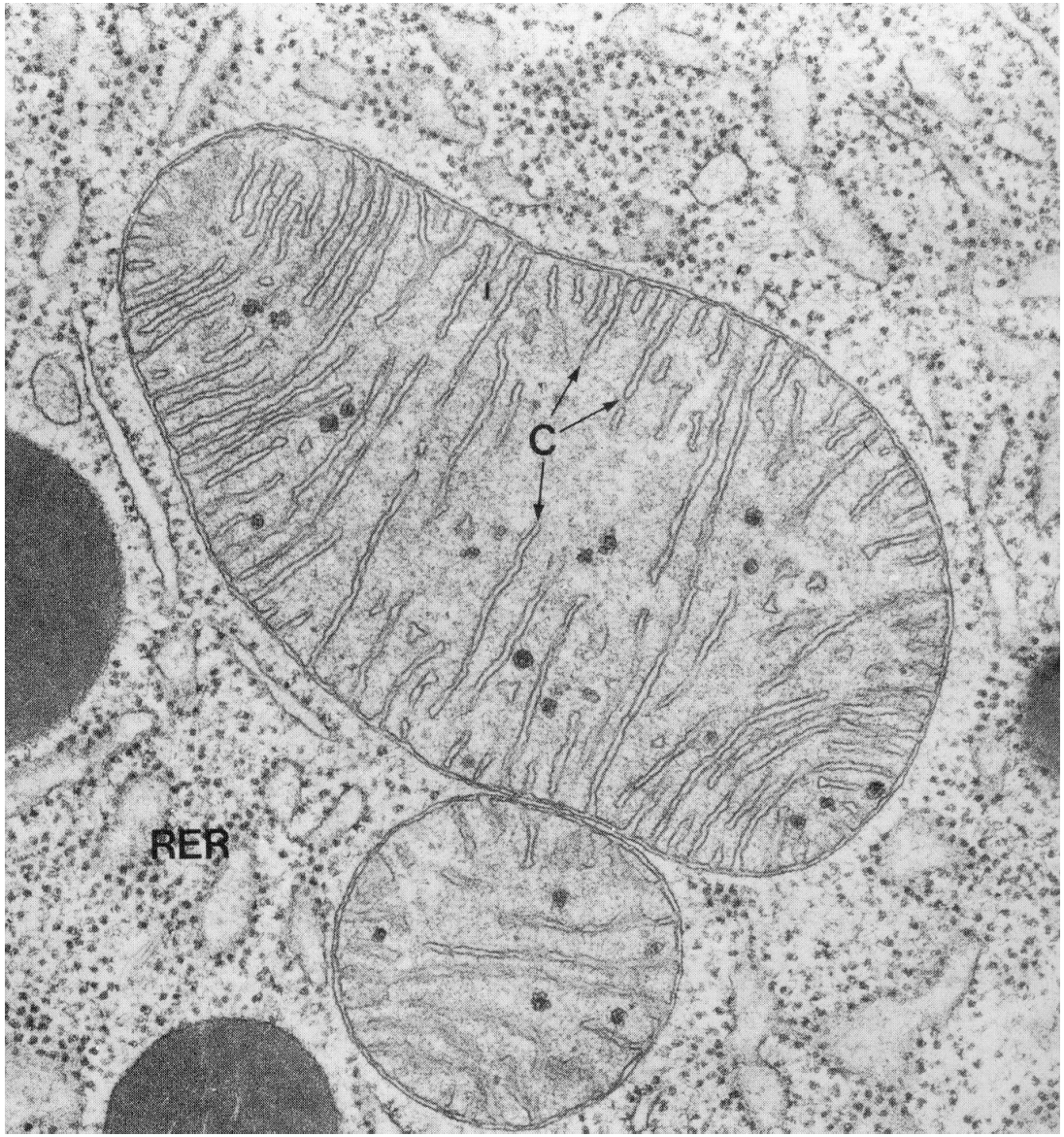


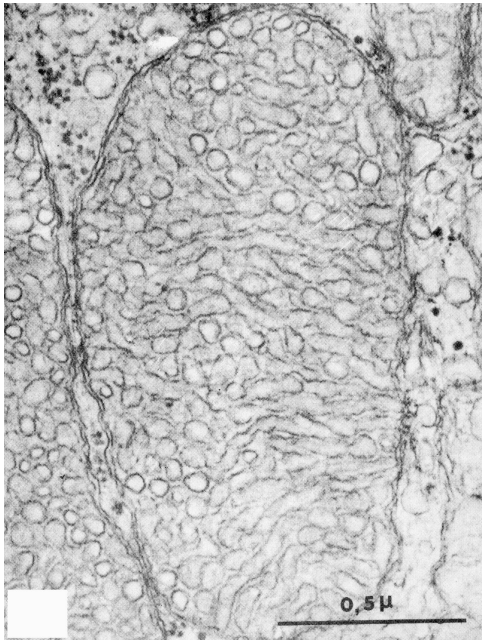




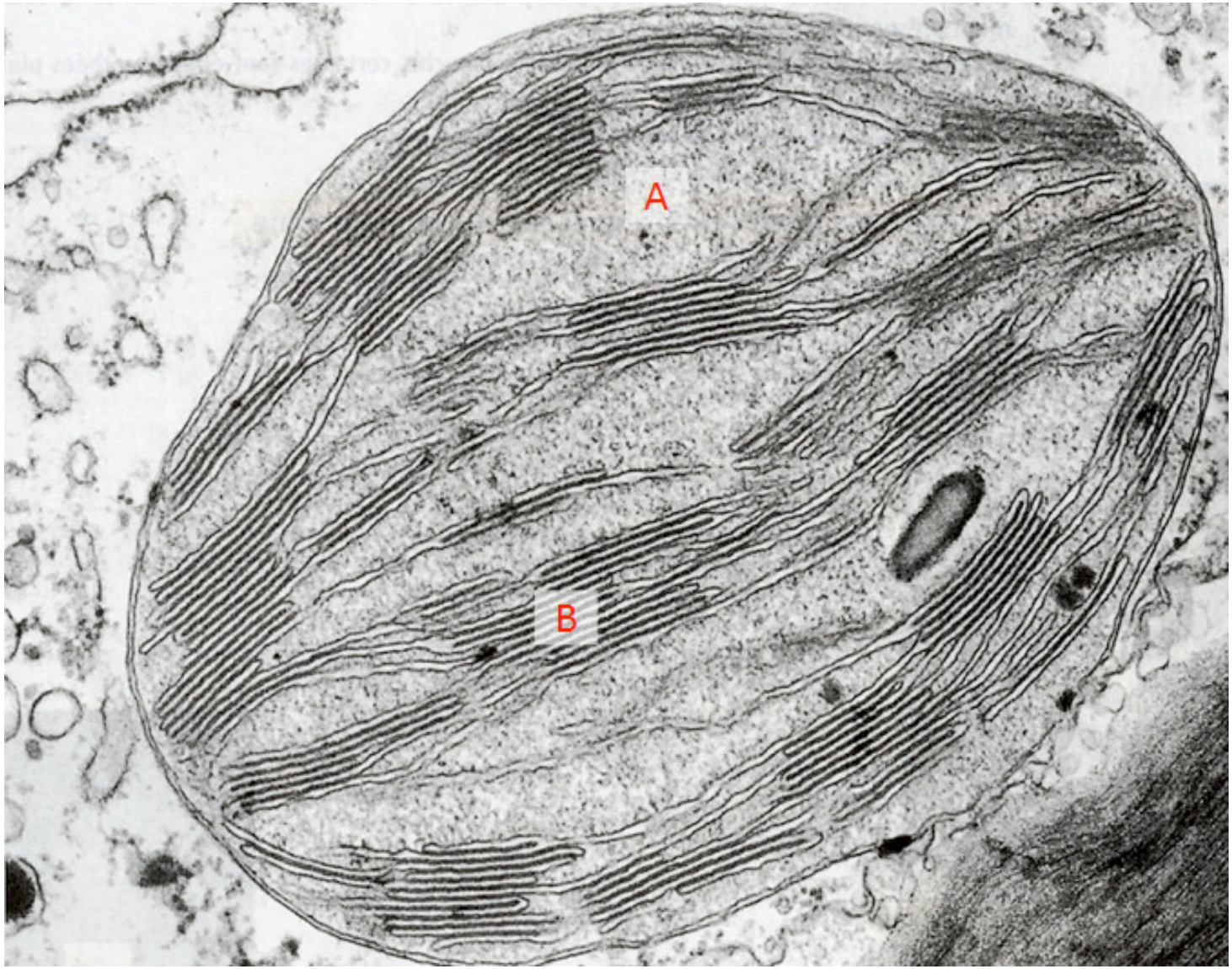
(a) Glaïeul (b) Soucis

1. Les mitochondries



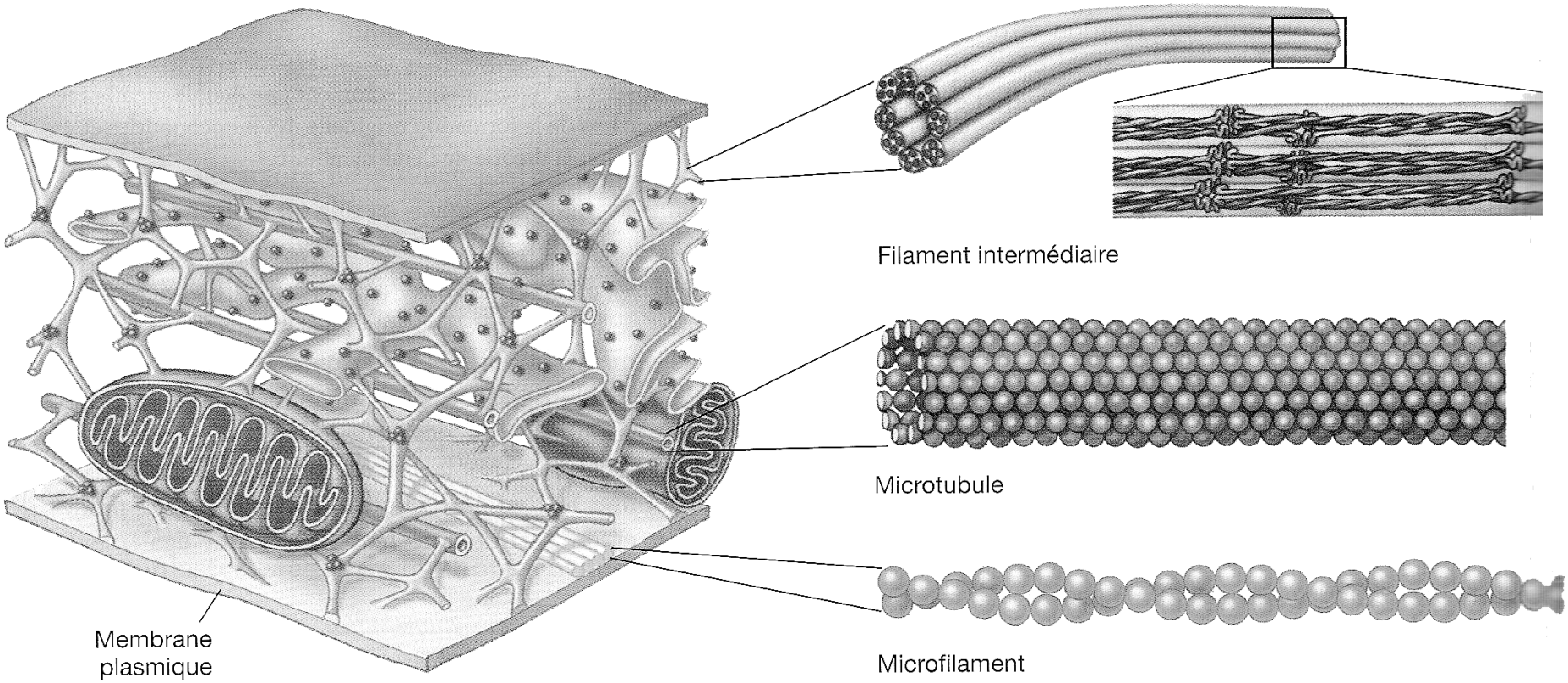


2. Les chloroplastes

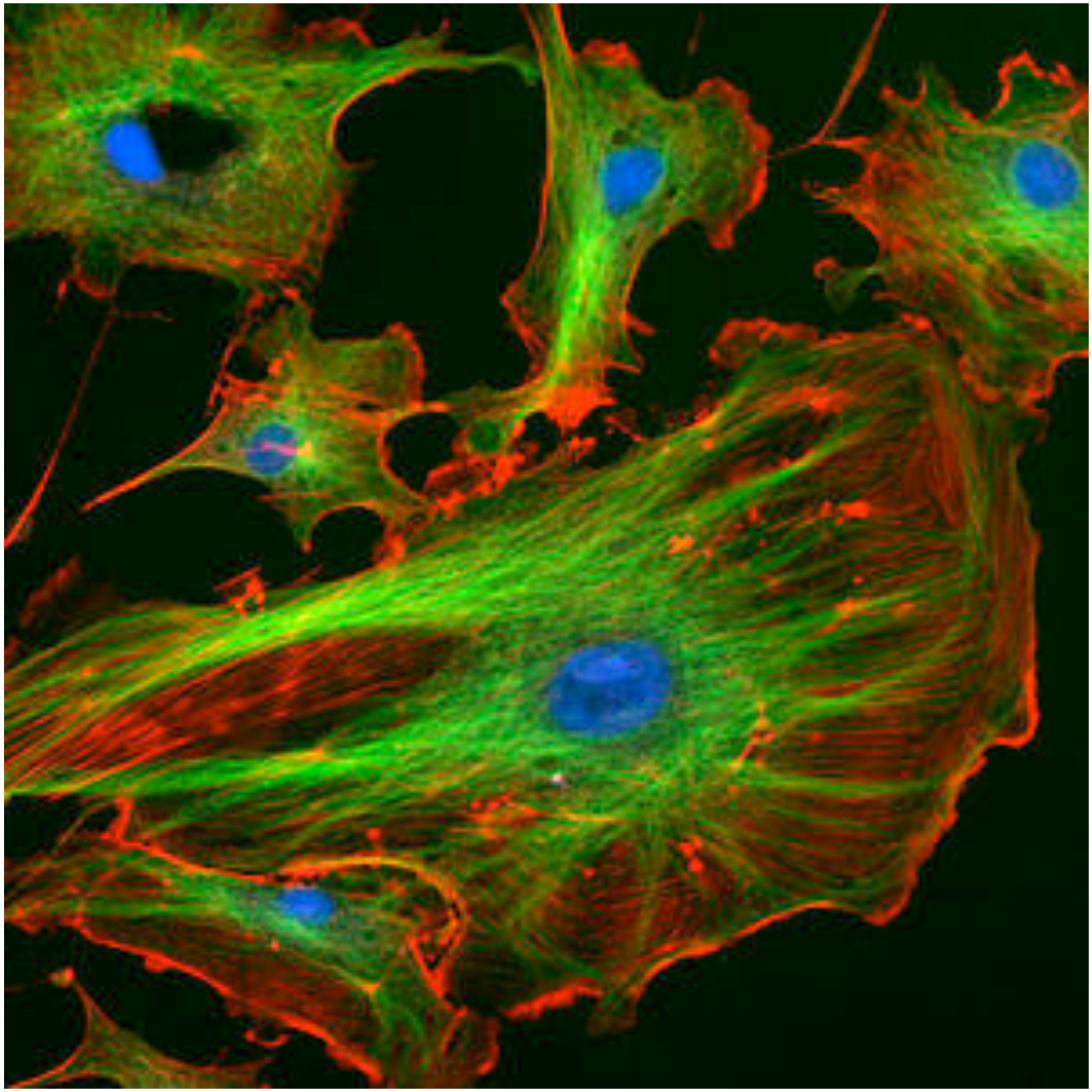


IV. Le compartiment cytosolique

1. Le cytosquelette

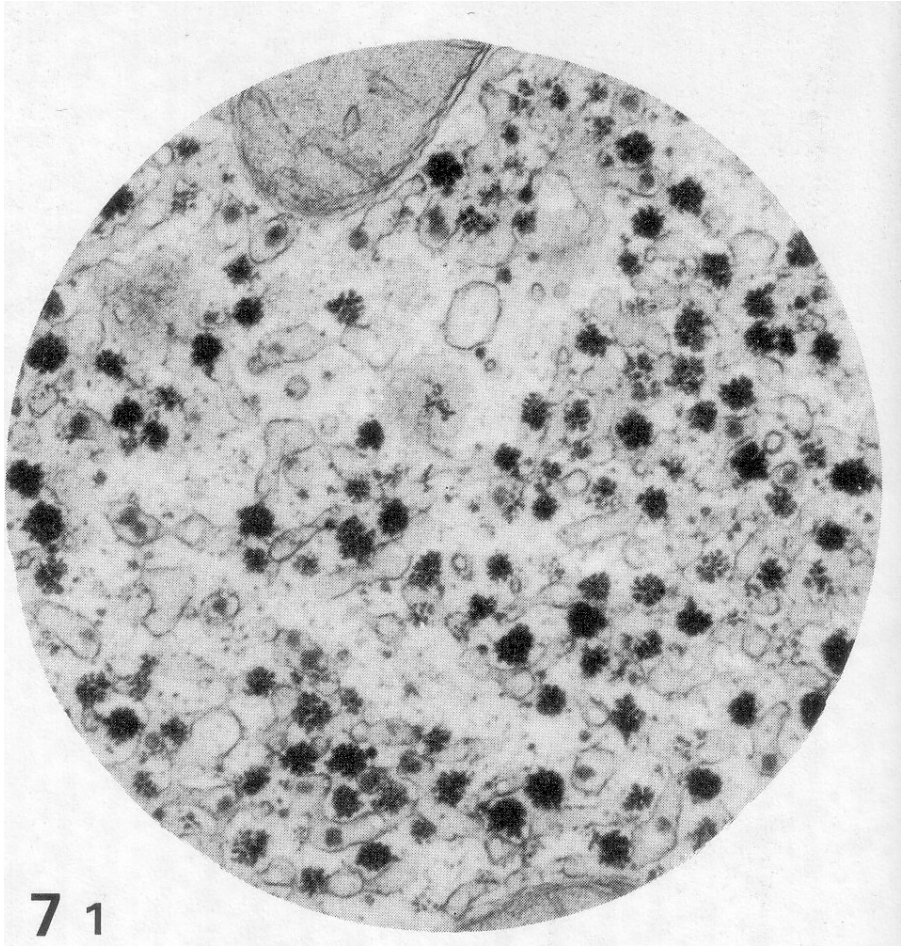


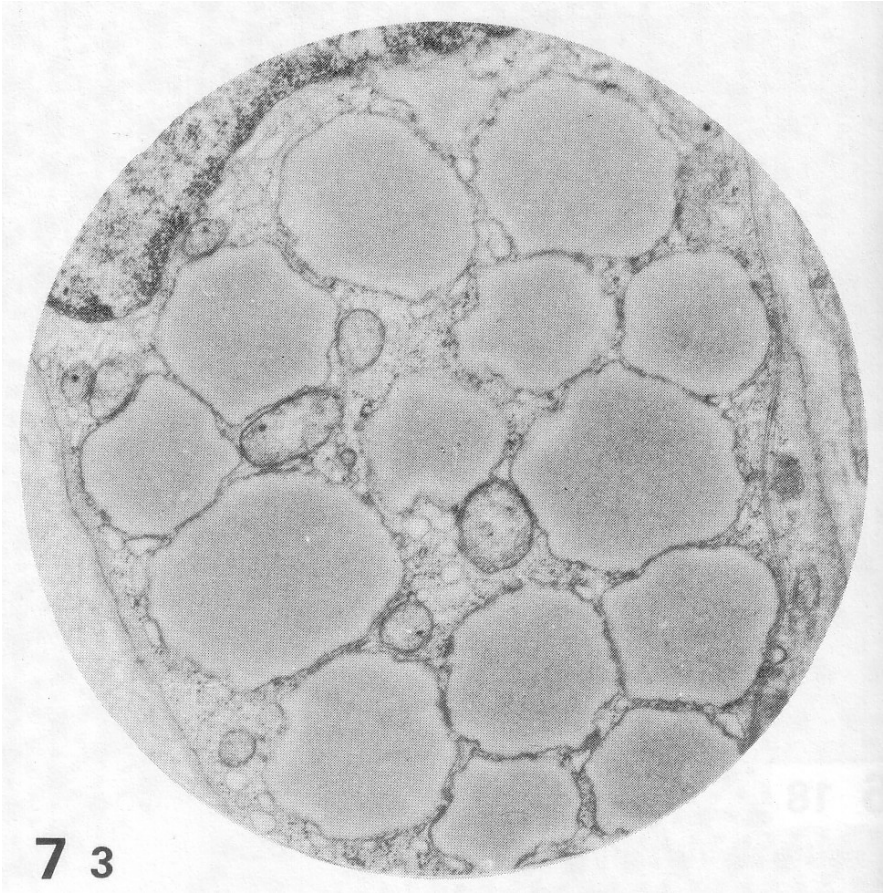
Les molécules constitutives du cytosquelette. *Microfilaments* : constitués de deux brins torsadés constitués chacun d'un chapelet d'une protéine globulaire, l'actine. On trouve des microfilaments un peu partout dans la cellule mais en particulier sous la membrane plasmique où ils sont regroupés en faisceaux dénommés fibres de tension, qui peuvent avoir une fonction contractile. *Microtubules* : les microtubules sont composés de sous-unités de tubuline, protéines disposées côte à côte pour former un tube. Il s'agit d'éléments relativement rigides du cytosquelette, impliqués dans l'organisation métabolisme, le transport intracellulaire et la stabilisation de la structure cellulaire. *Filaments intermédiaires* : les filaments intermédiaires sont comp tétramères imbriqués et décalés de protéines. Cette disposition confère une force mécanique énorme à la cellule.

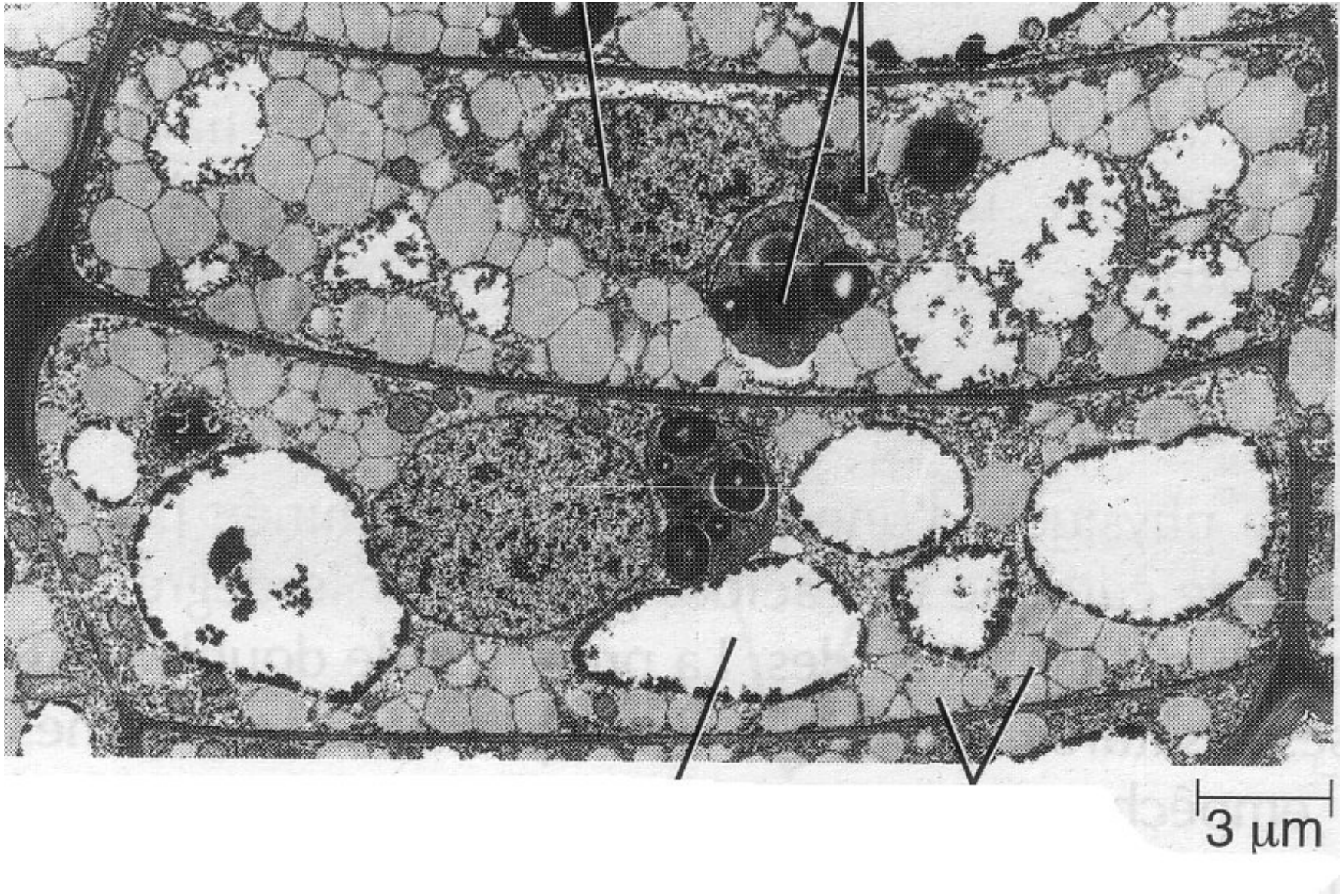


Immunomarquages superposés du cytosquelette : en bleu les filaments intermédiaires (lamines), en vert les microtubules, en rouge les microfilaments d'actine.

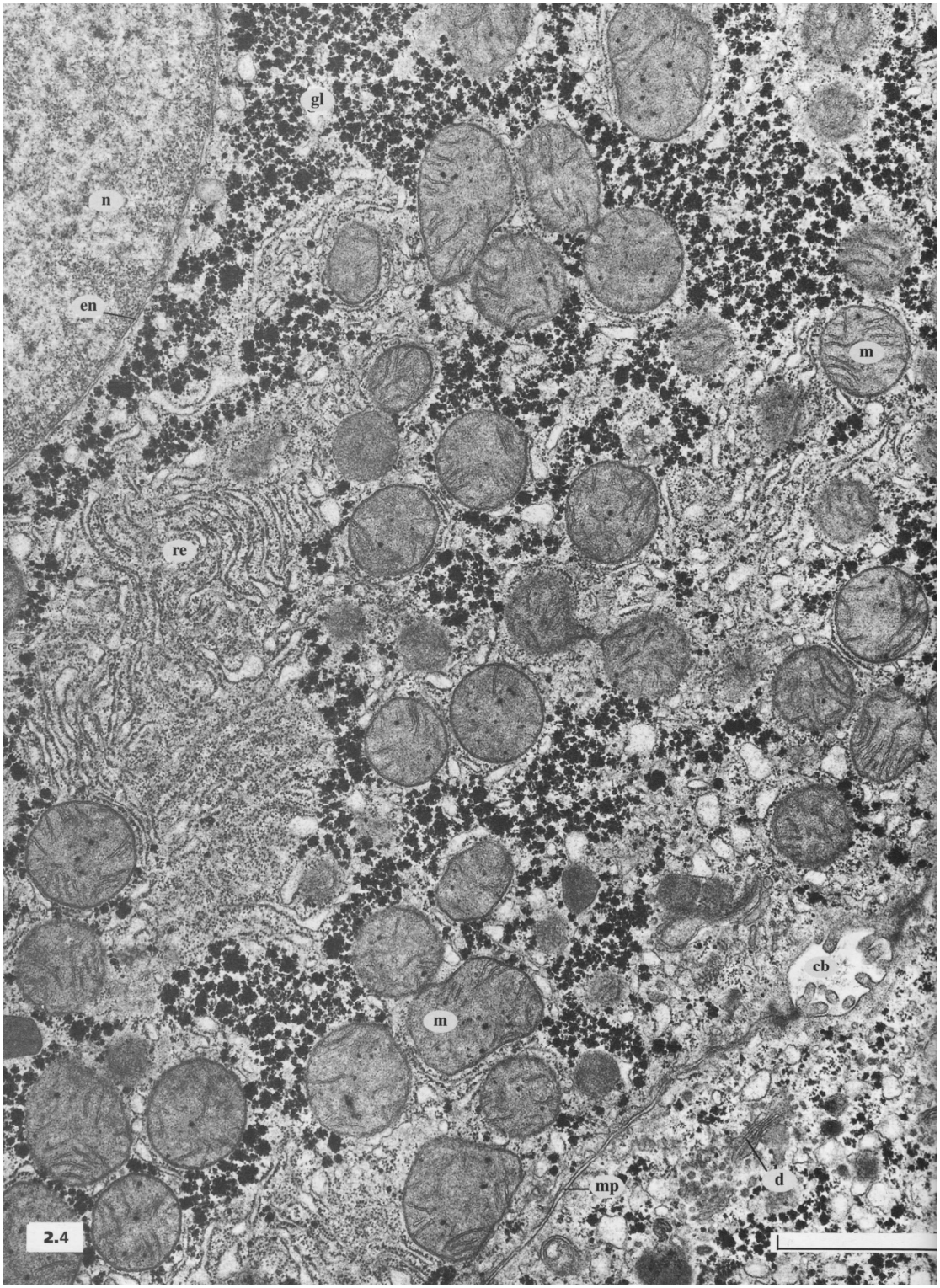
2. Les inclusions cytosoliques






3 µm

	Cellule animale	**Cellule végétale**	**Champignon**	**Bactérie**
Organites : noms et fonctions	noyau, mitochondrie, lysosome, peroxysome, vésicules de sécrétion	noyau, mitochondrie, vacuole, peroxysome, vésicules de sécrétion, plastes	noyau, mitochondrie, vacuole, peroxysome, vésicules de sécrétion	aucun sauf exception (cyanobactéries)



2.4

n
pn
en
m
re
m
re
m
cb
mp