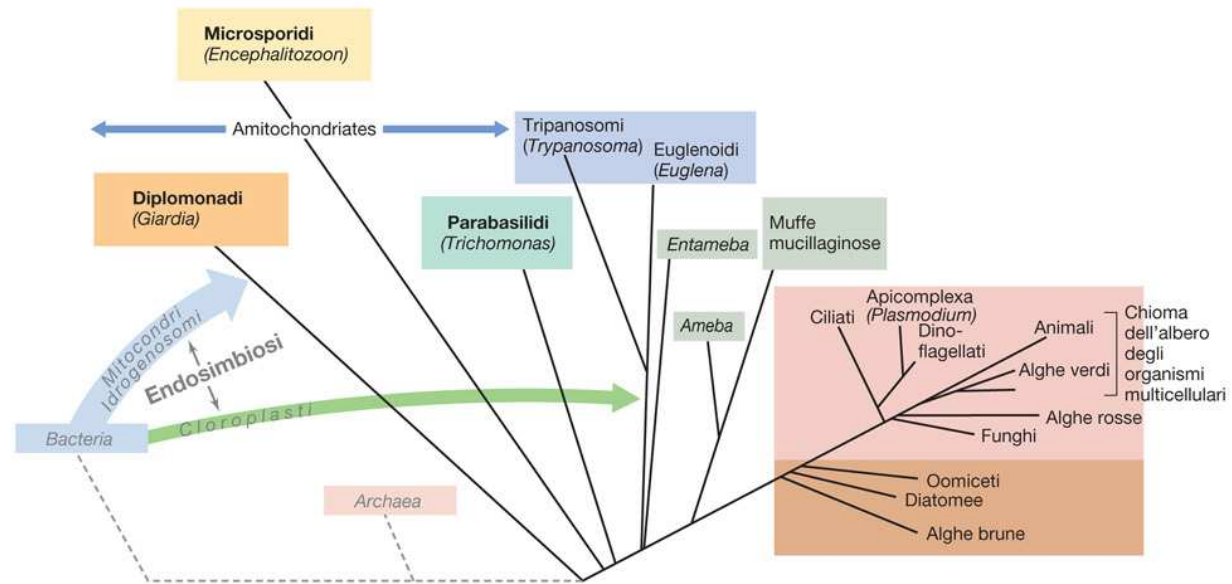
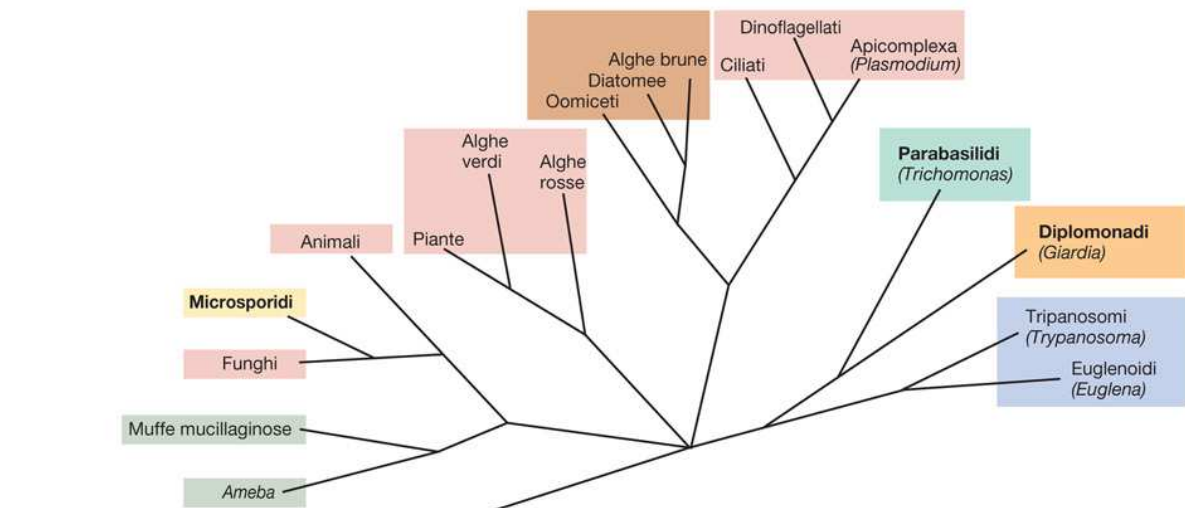


MICROBIOLOGIA GENERALE

**Eukaryotic
microorganisms**



(a)



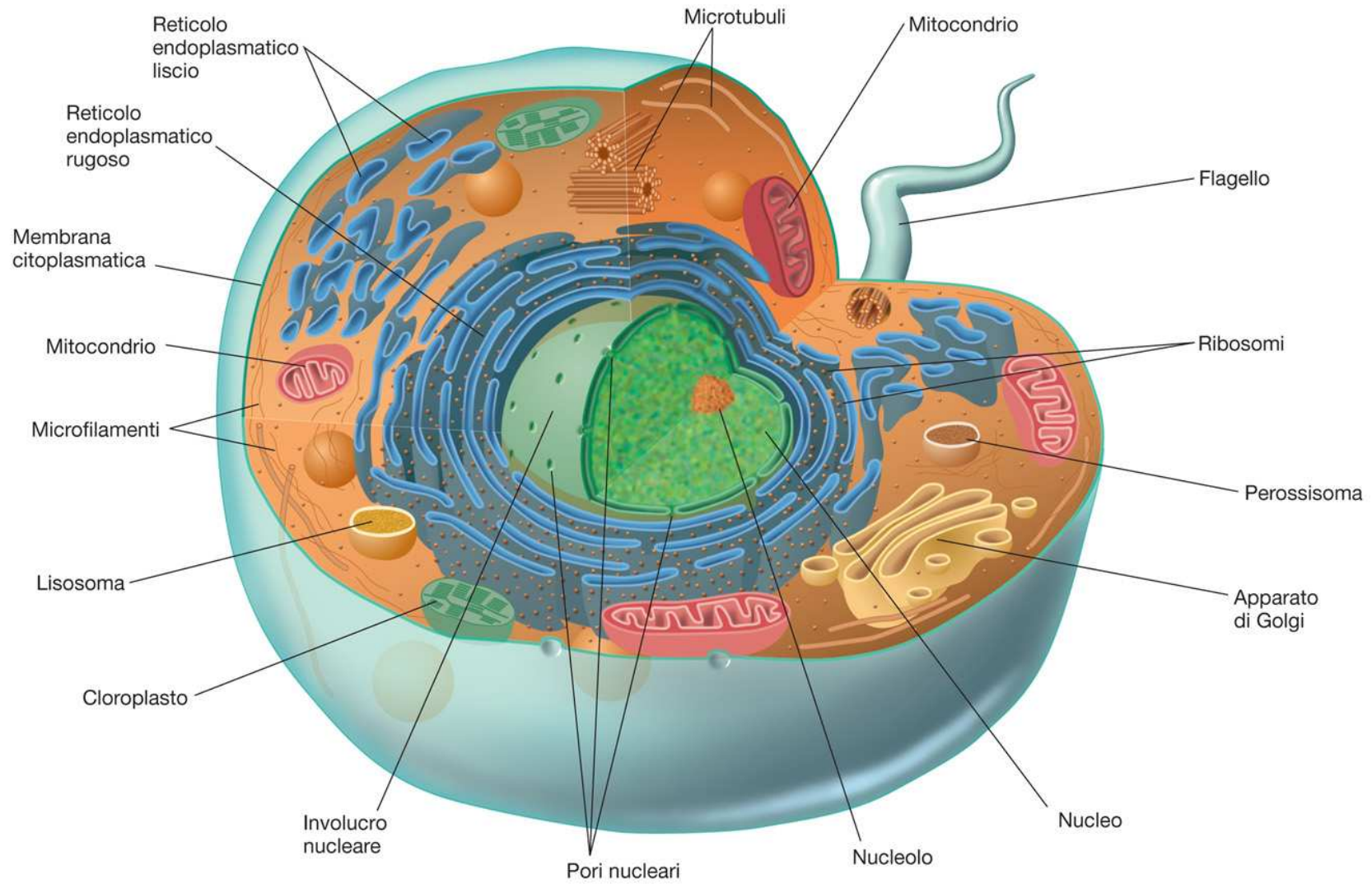
(b)

Phylogenetic trees of *Eukarya*

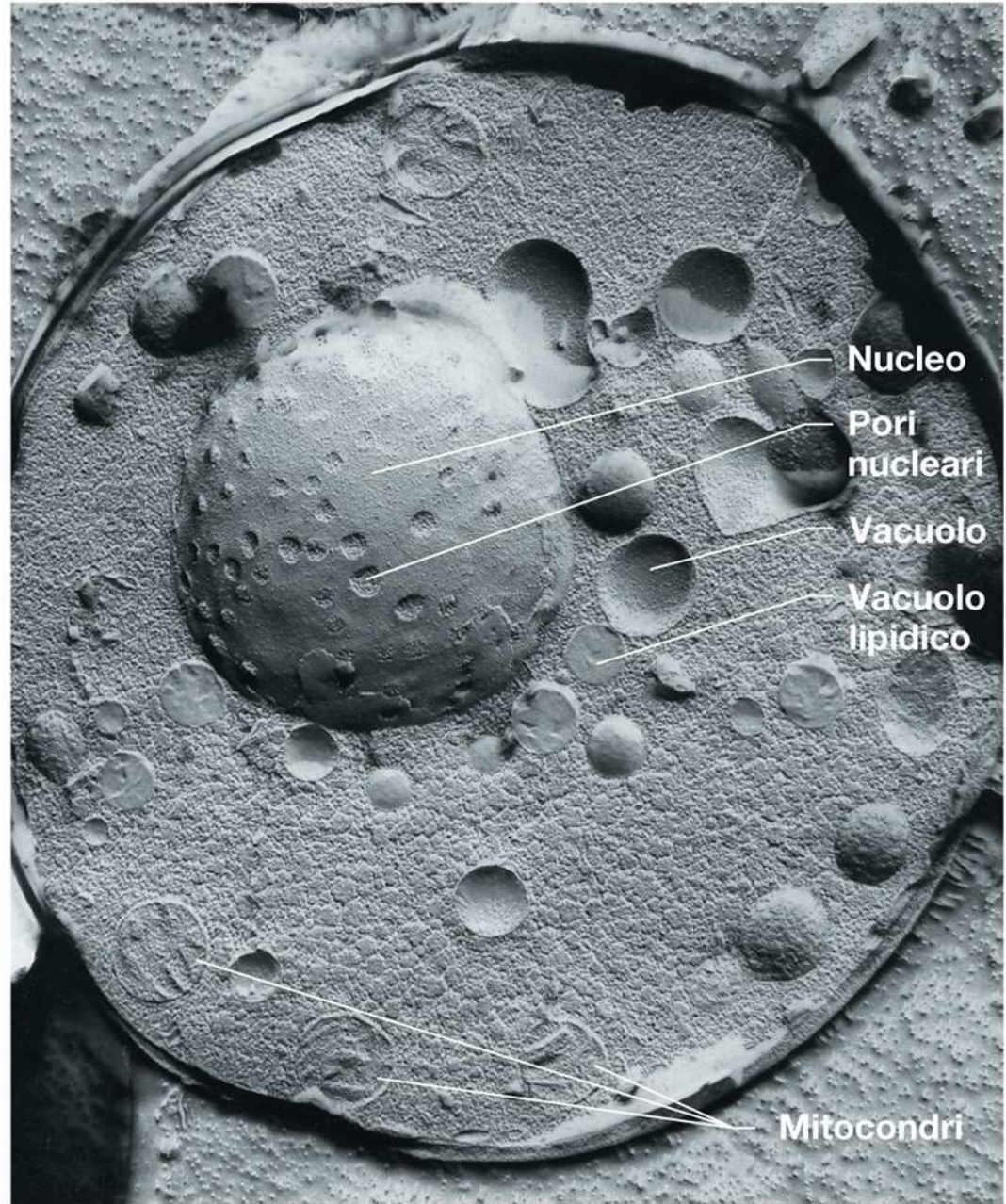
Eukaryotic microorganisms:

Eukaryotic cell structure/ function

Cut away view of a eukaryotic cell

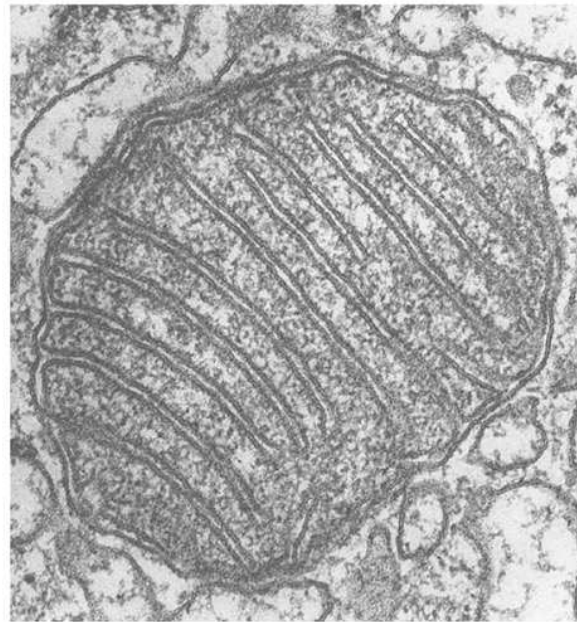
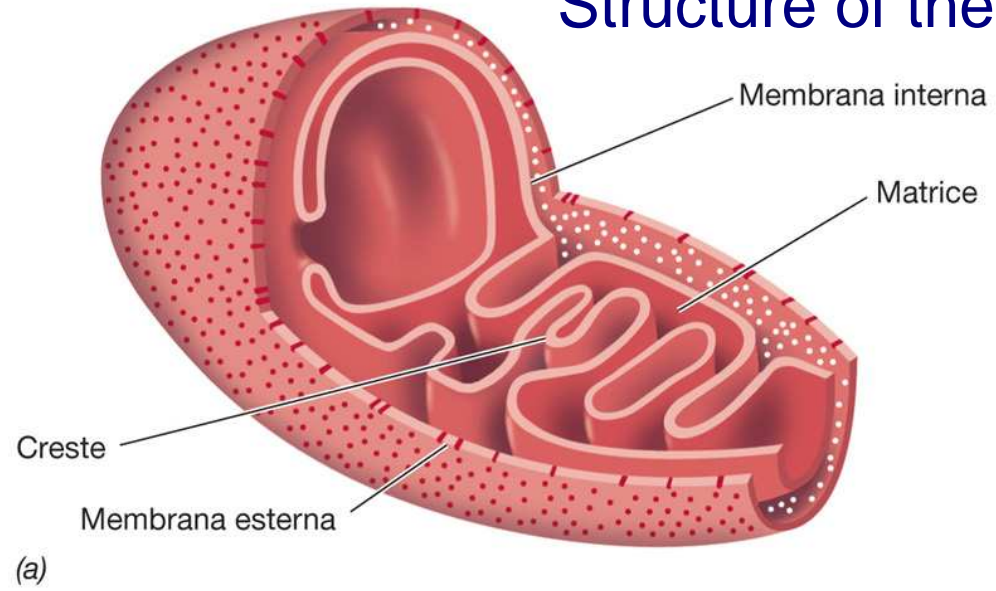


The nucleus



E. Guth, T. Hashimoto, and S.F. Conti

Structure of the mitochondrion

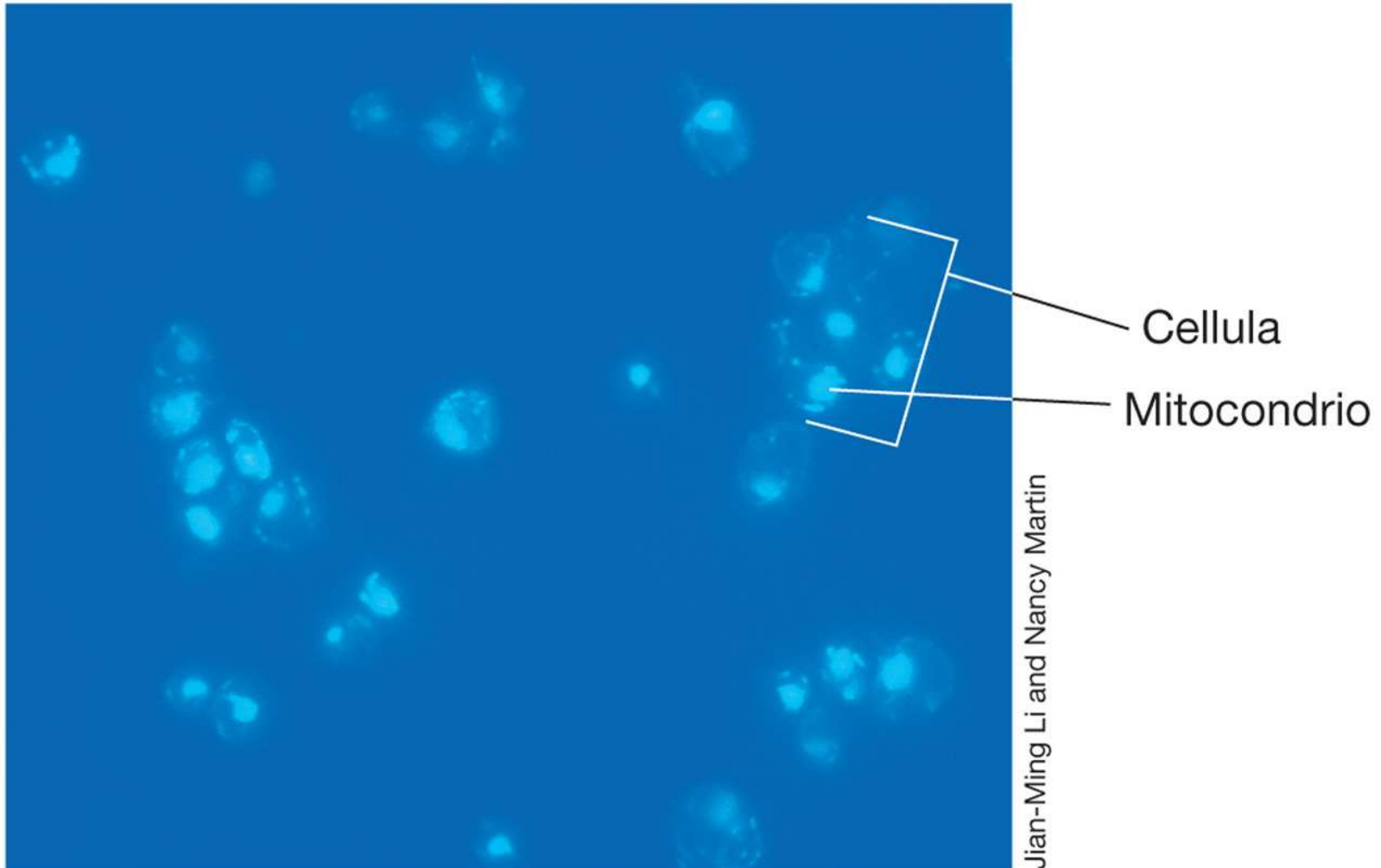


(b)

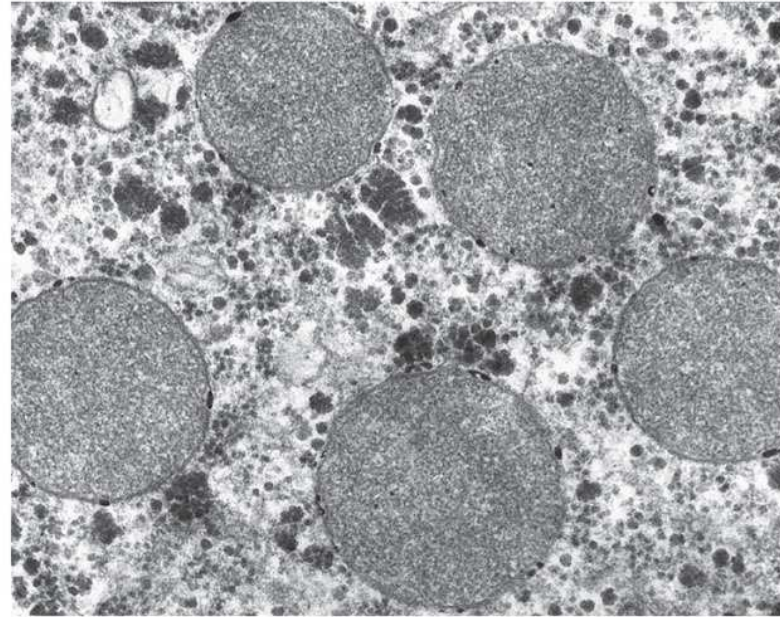


(c)

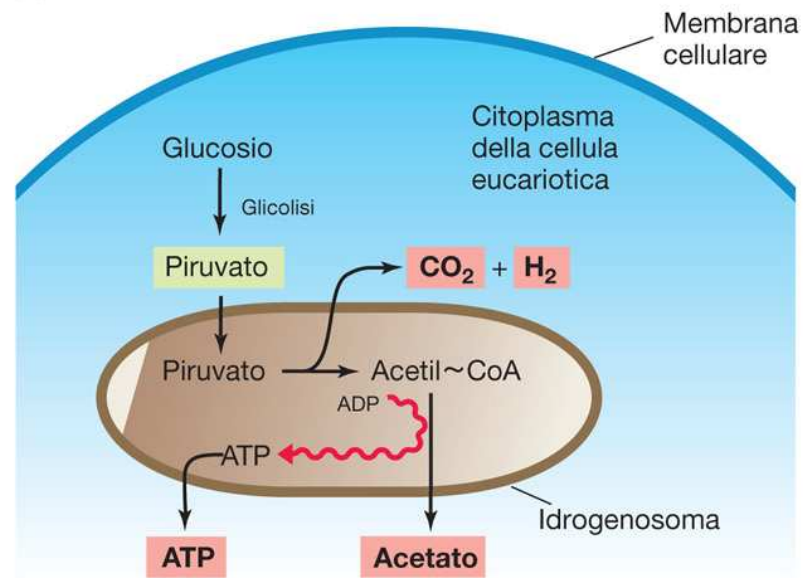
The mitochondrial DNA of *Saccharomyces cerevisiae*



The hydrogenosome

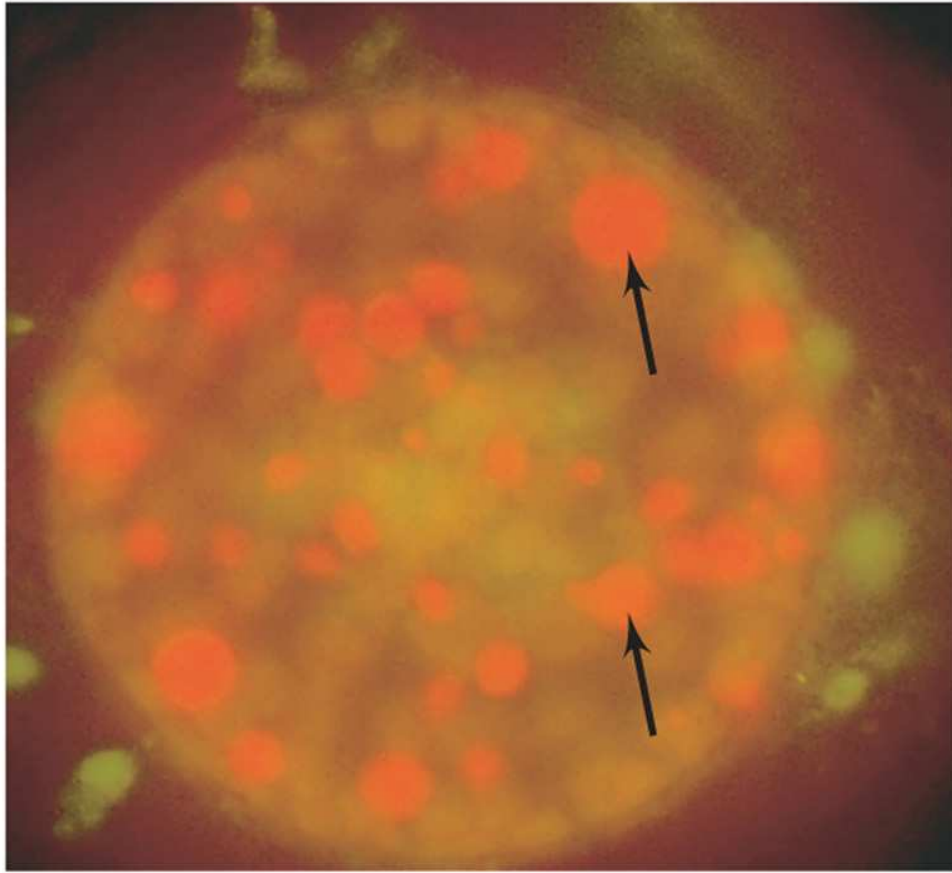


(a)



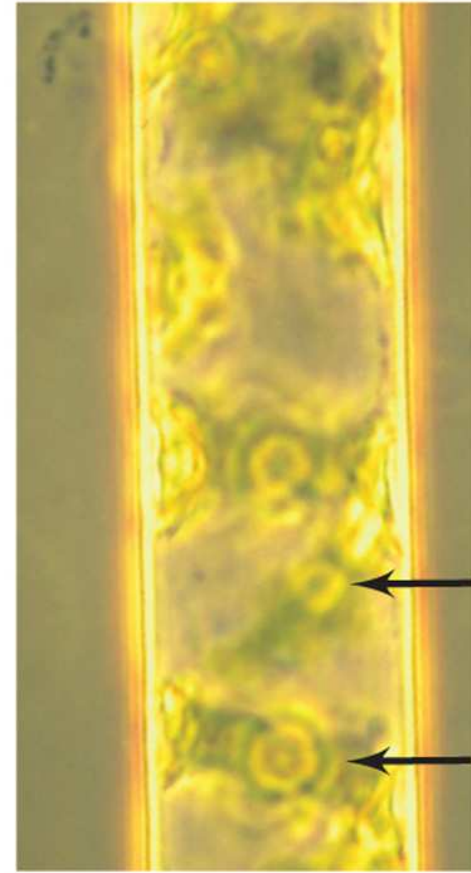
(b)

The chloroplasts



T. D. Brock

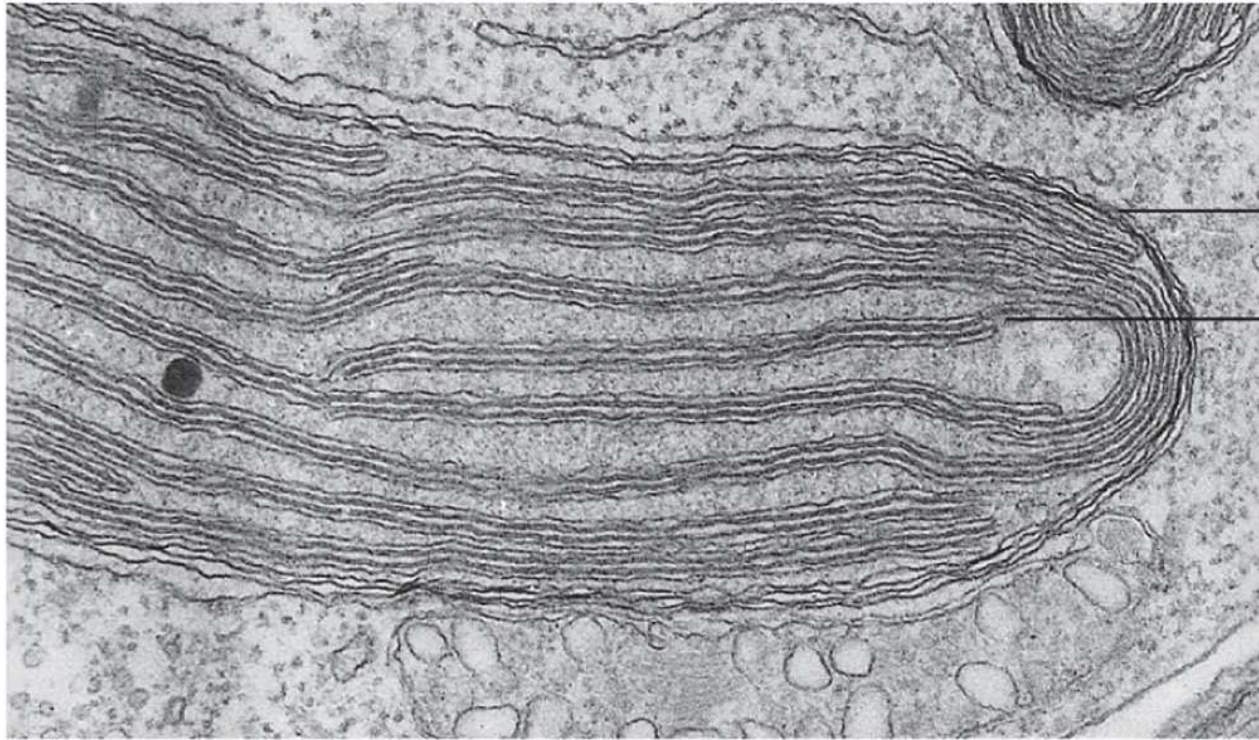
(a)



T. D. Brock

(b)

The chloroplasts

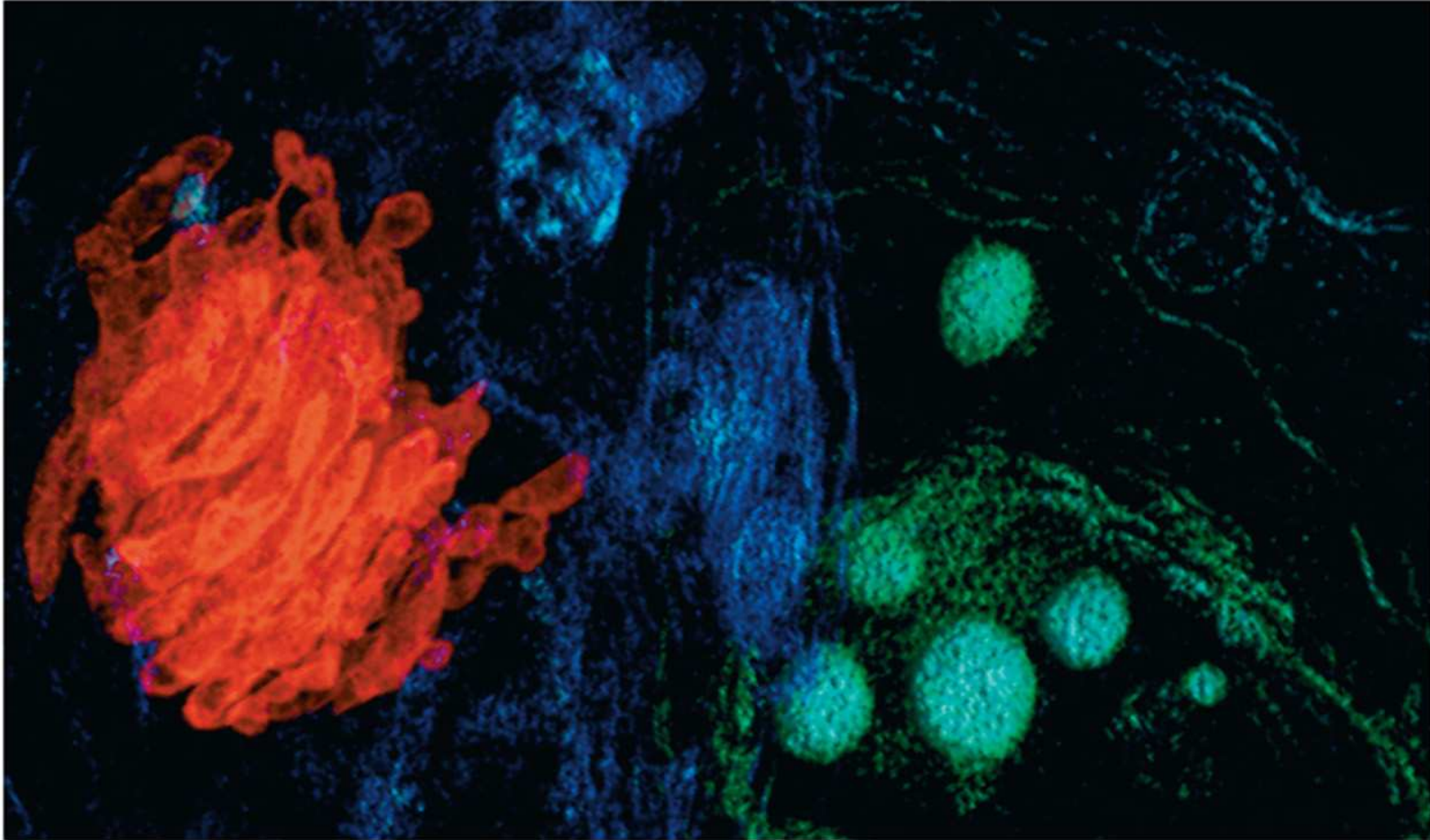


Cloroplasto

Tilacoide

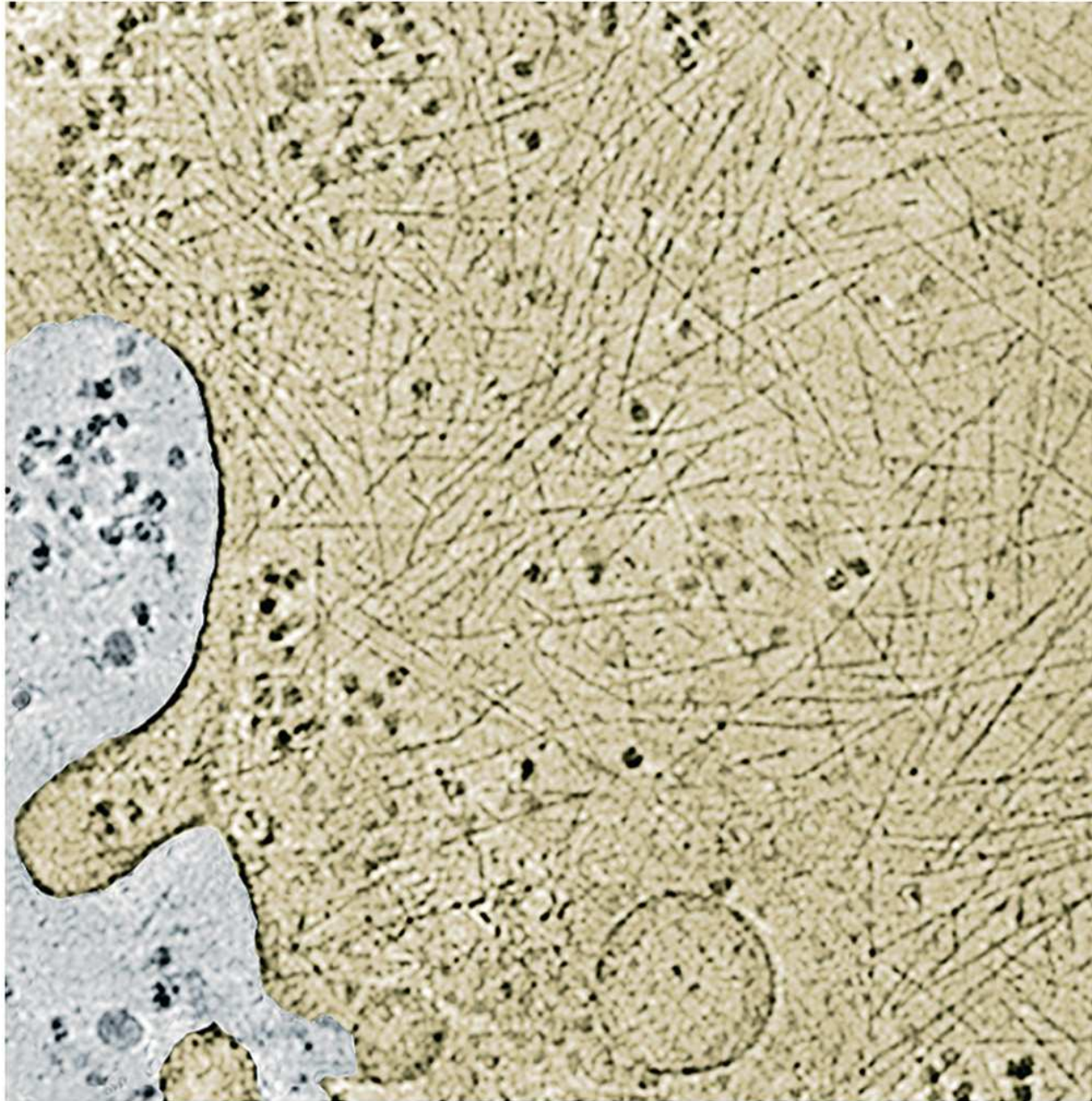
T. Slankis and S. Gibbs

The Golgi complex of *Toxoplasma gondii*



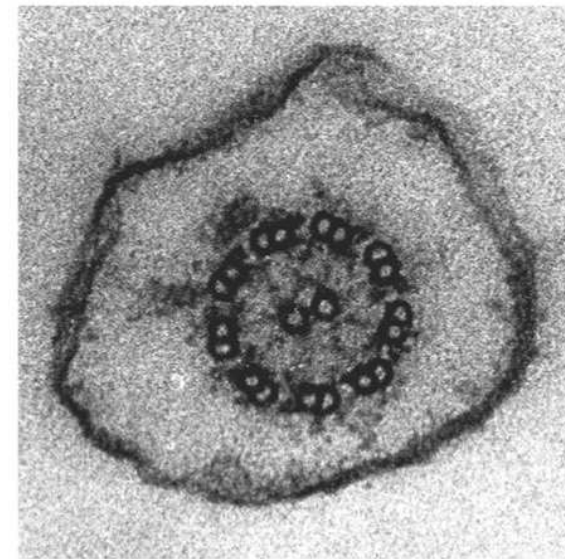
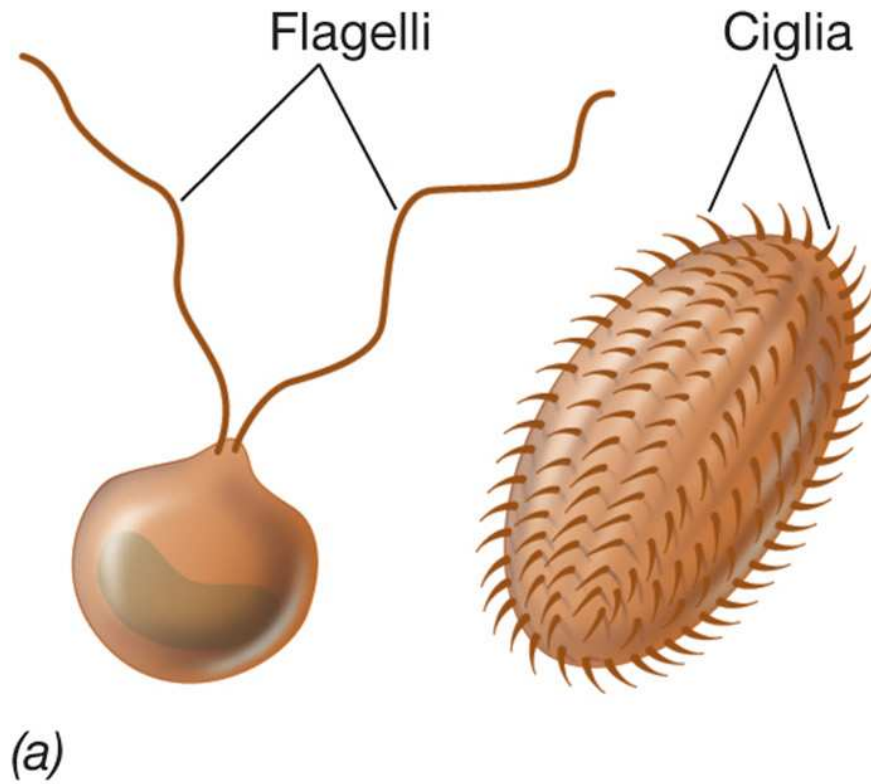
Laurence Pelletier, David Sheff, and Graham Warren

Microfilaments and eukaryotic cell architecture



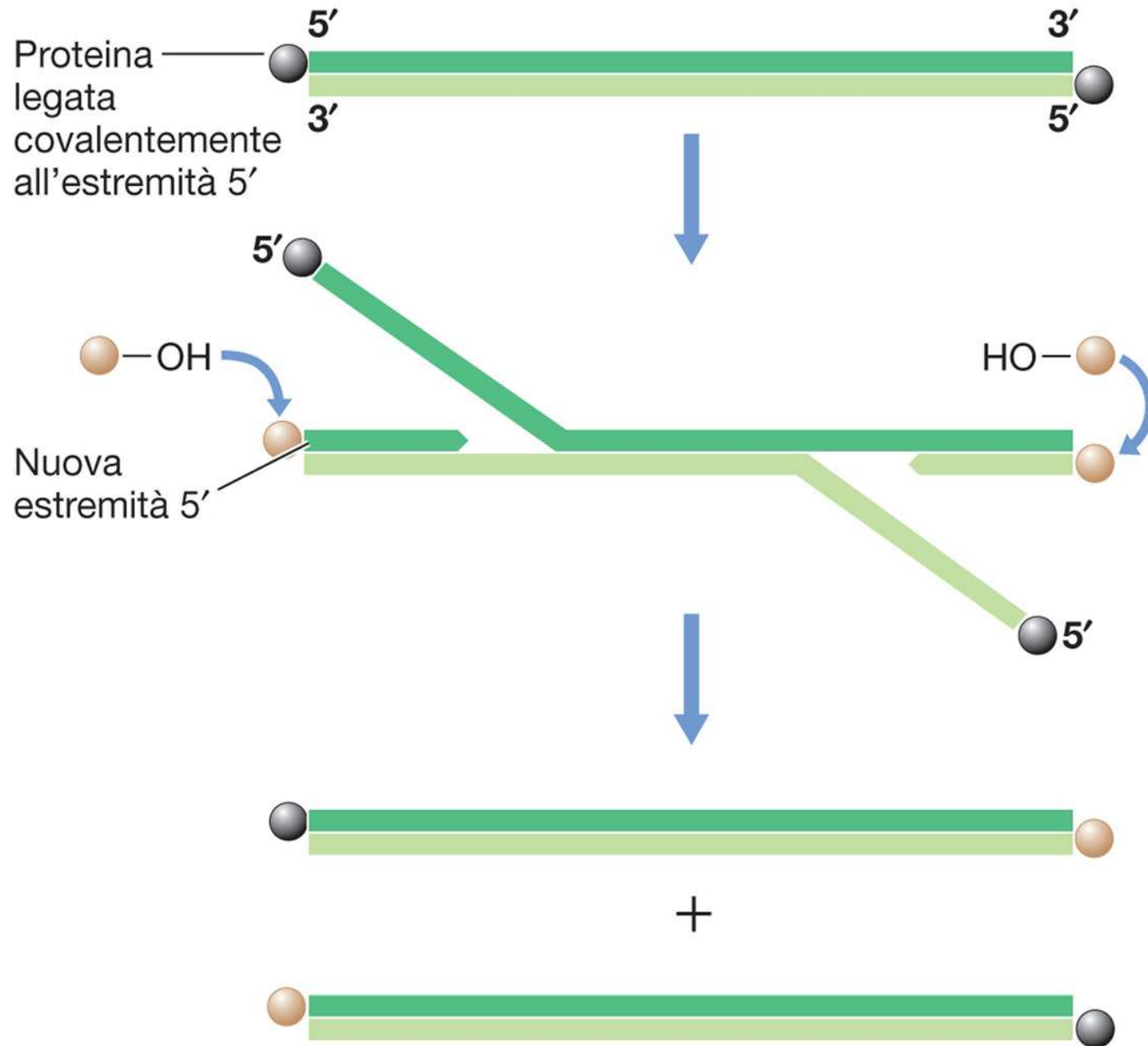
Ohad Medalia and Wolfgang Baumeister

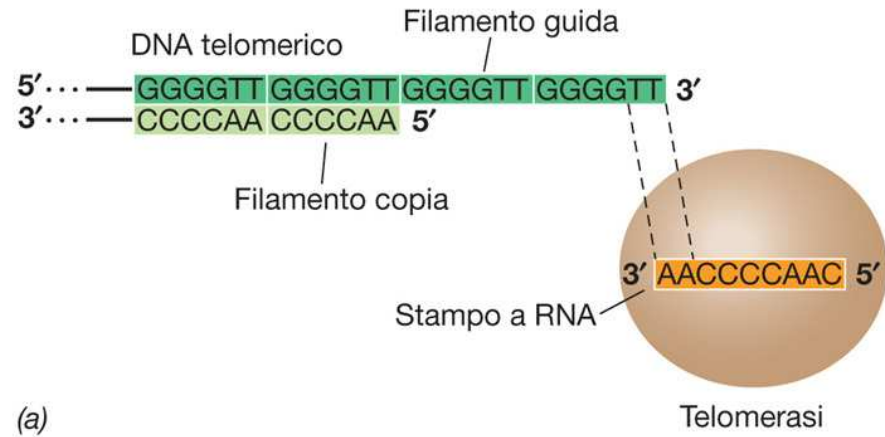
Flagella and cilia: motility organelles in eukaryotic cells



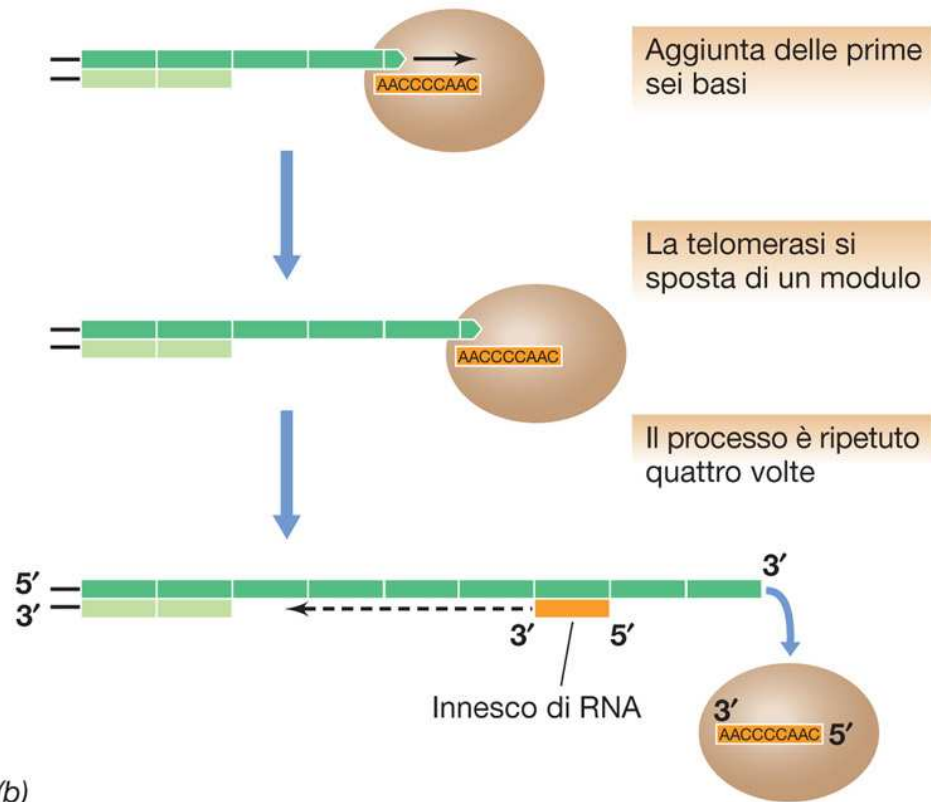
Melvin S. Fuller

Eukaryotic microorganisms:
Essential of eukaryotic genetics

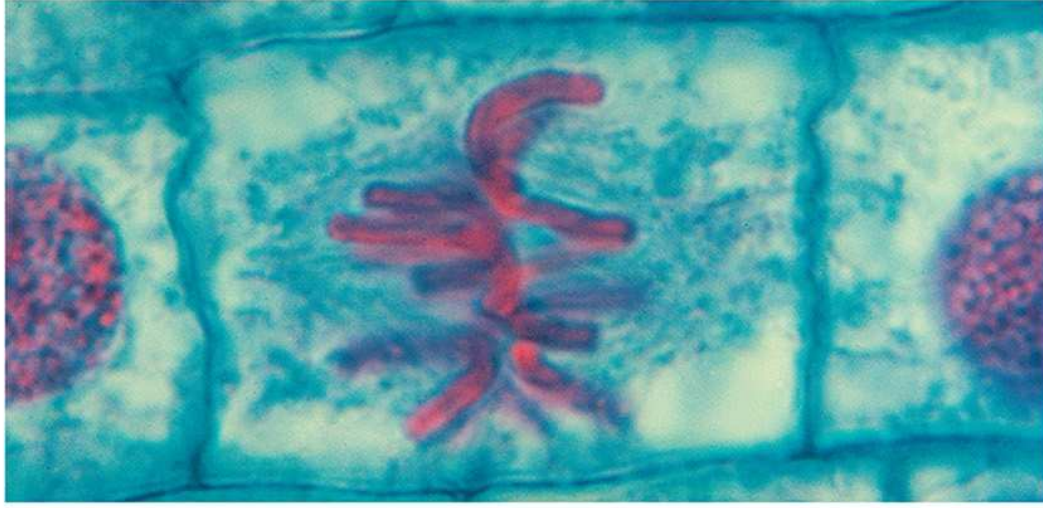




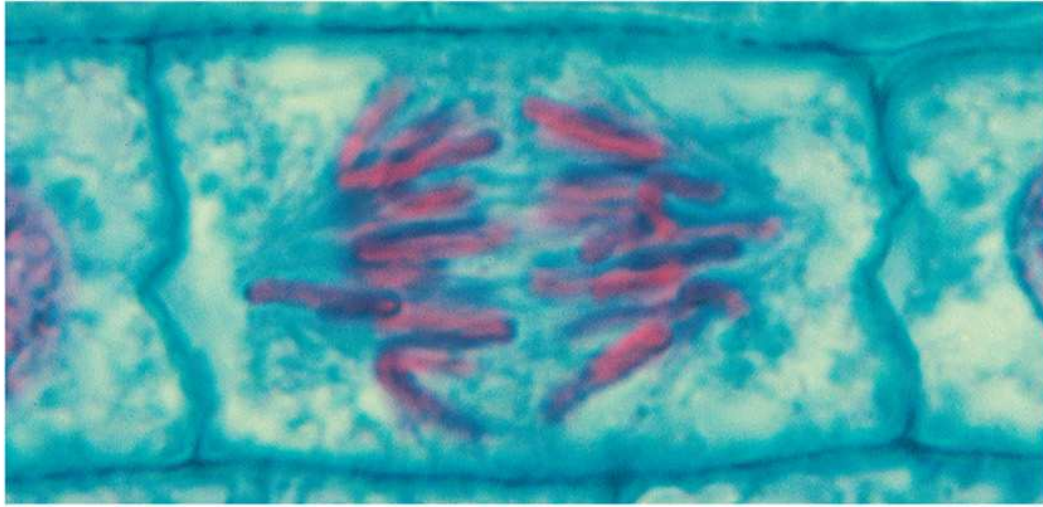
(a)



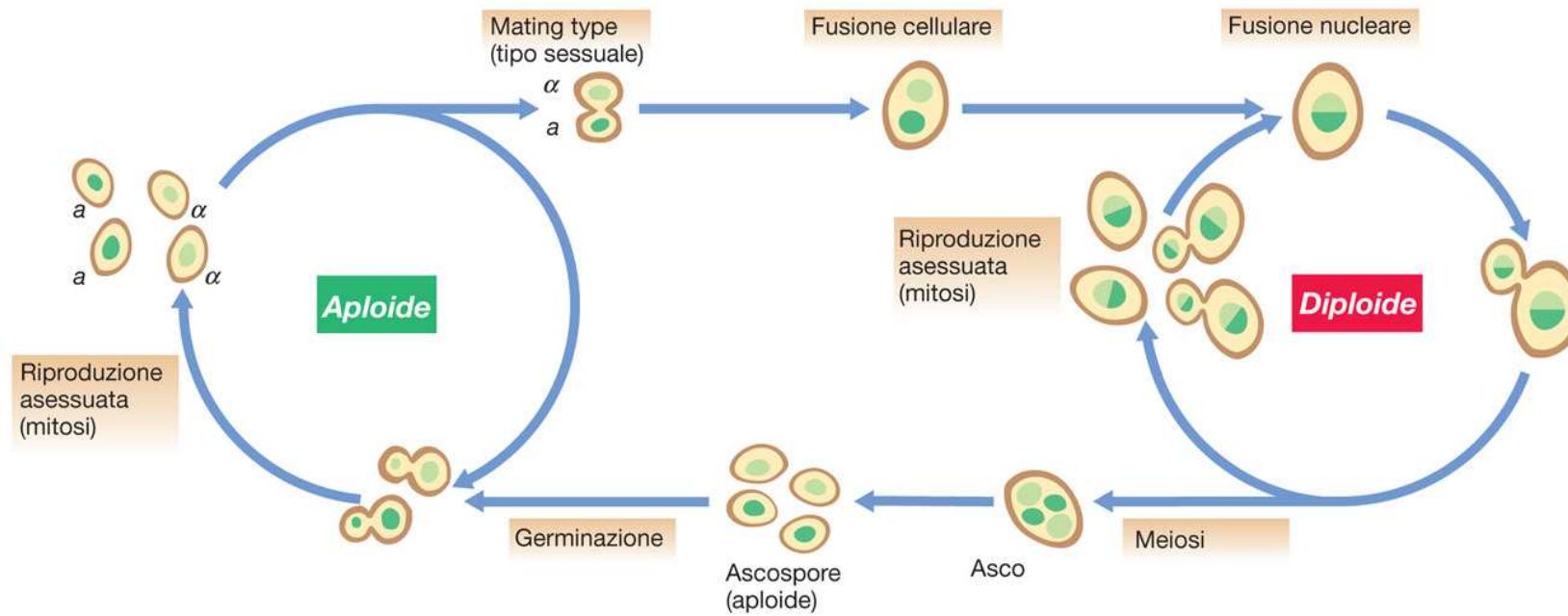
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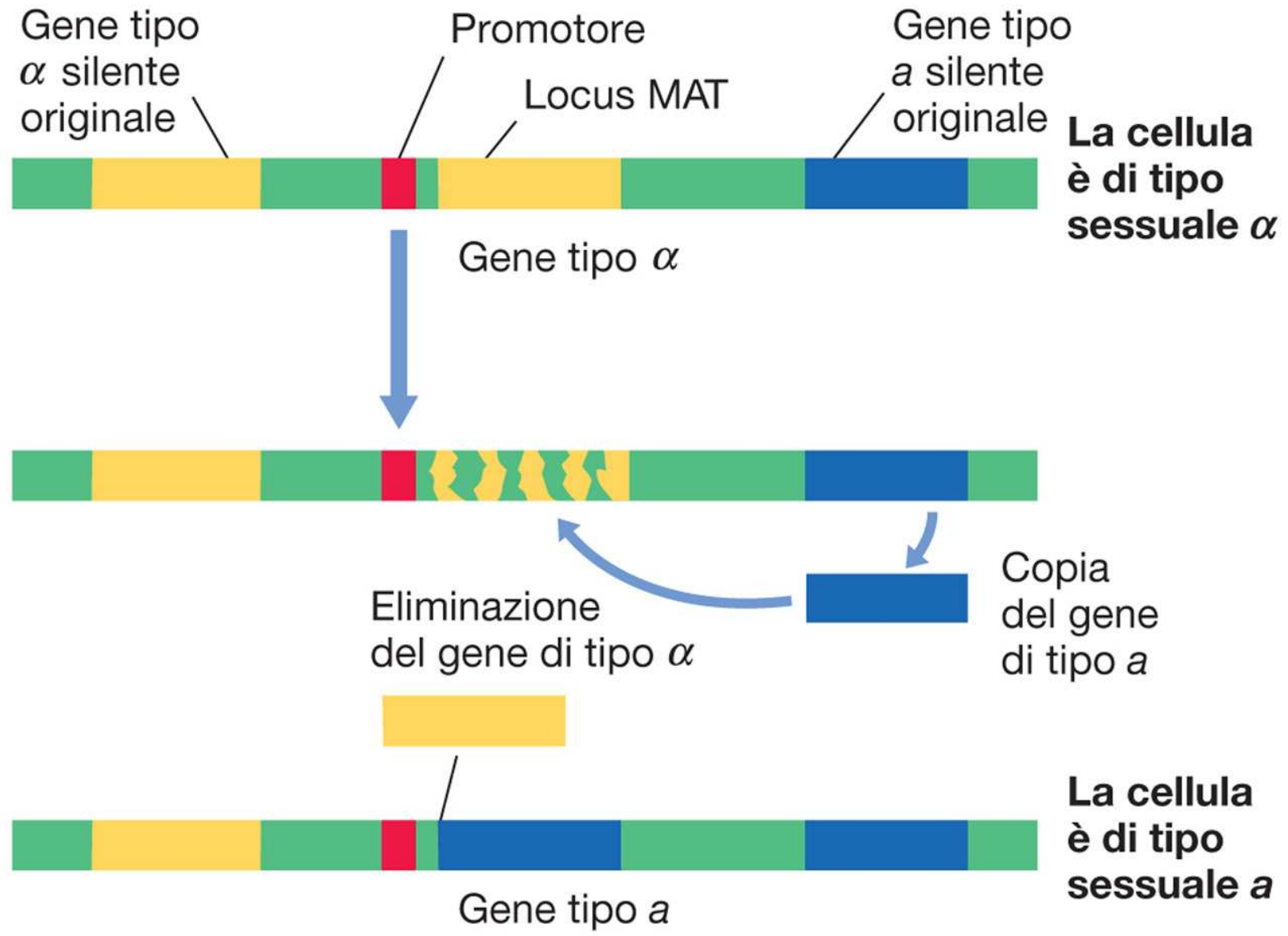


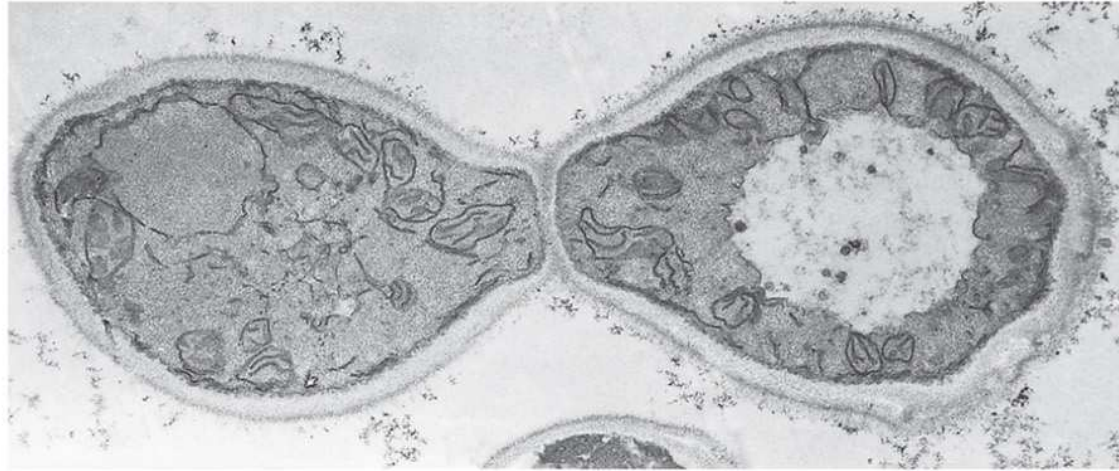
(a)



(b)

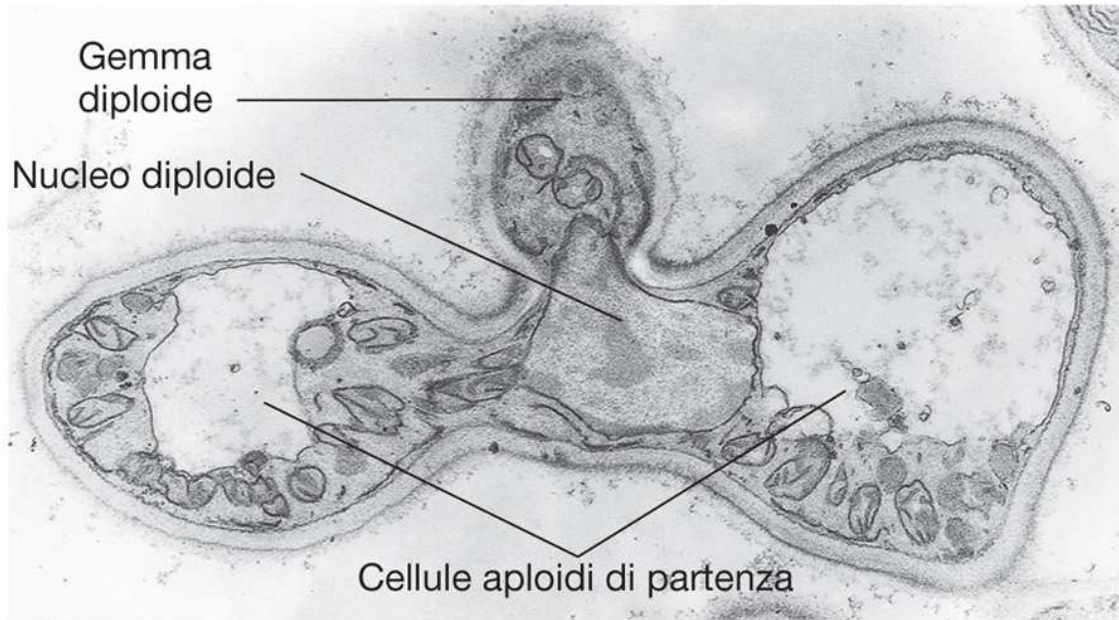






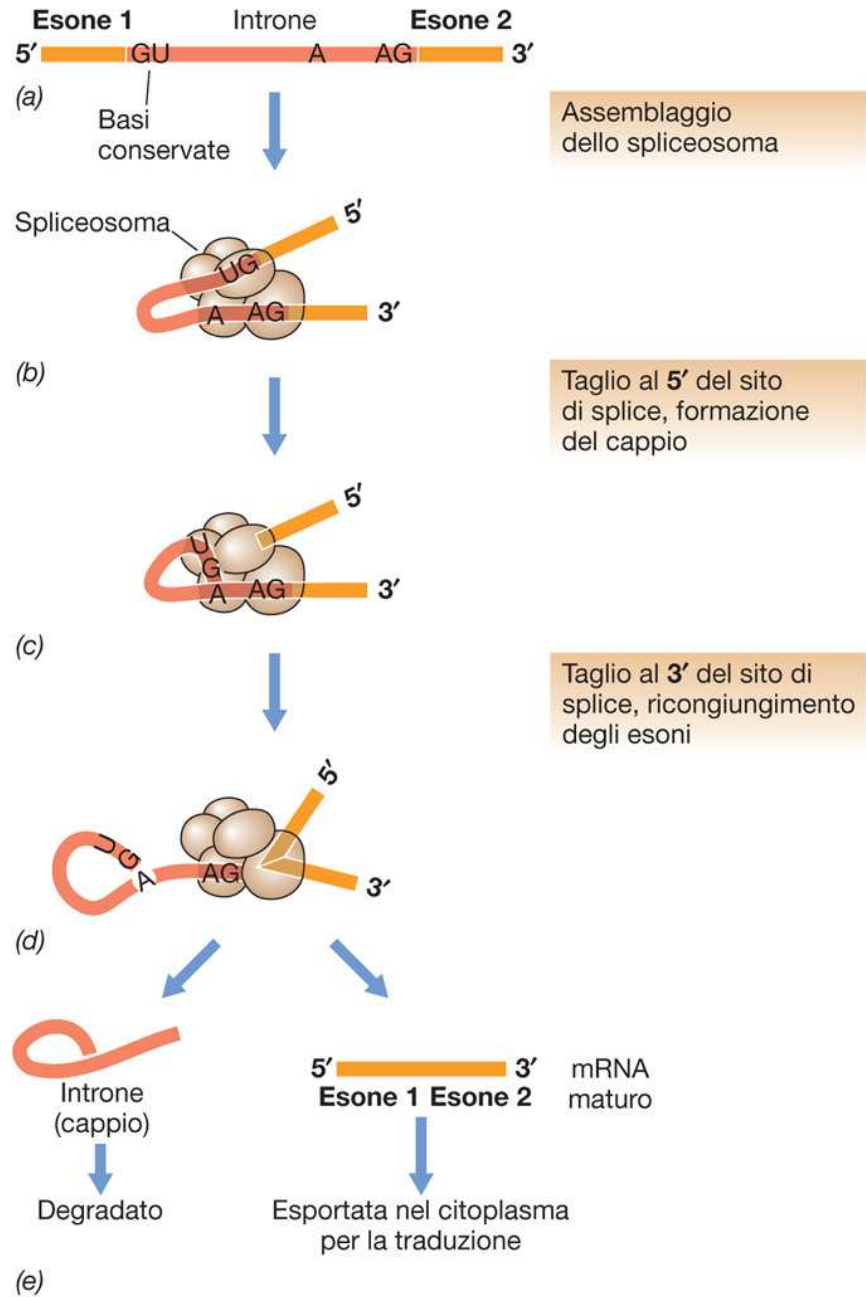
S. F. Conti and T. D. Brock

(a)

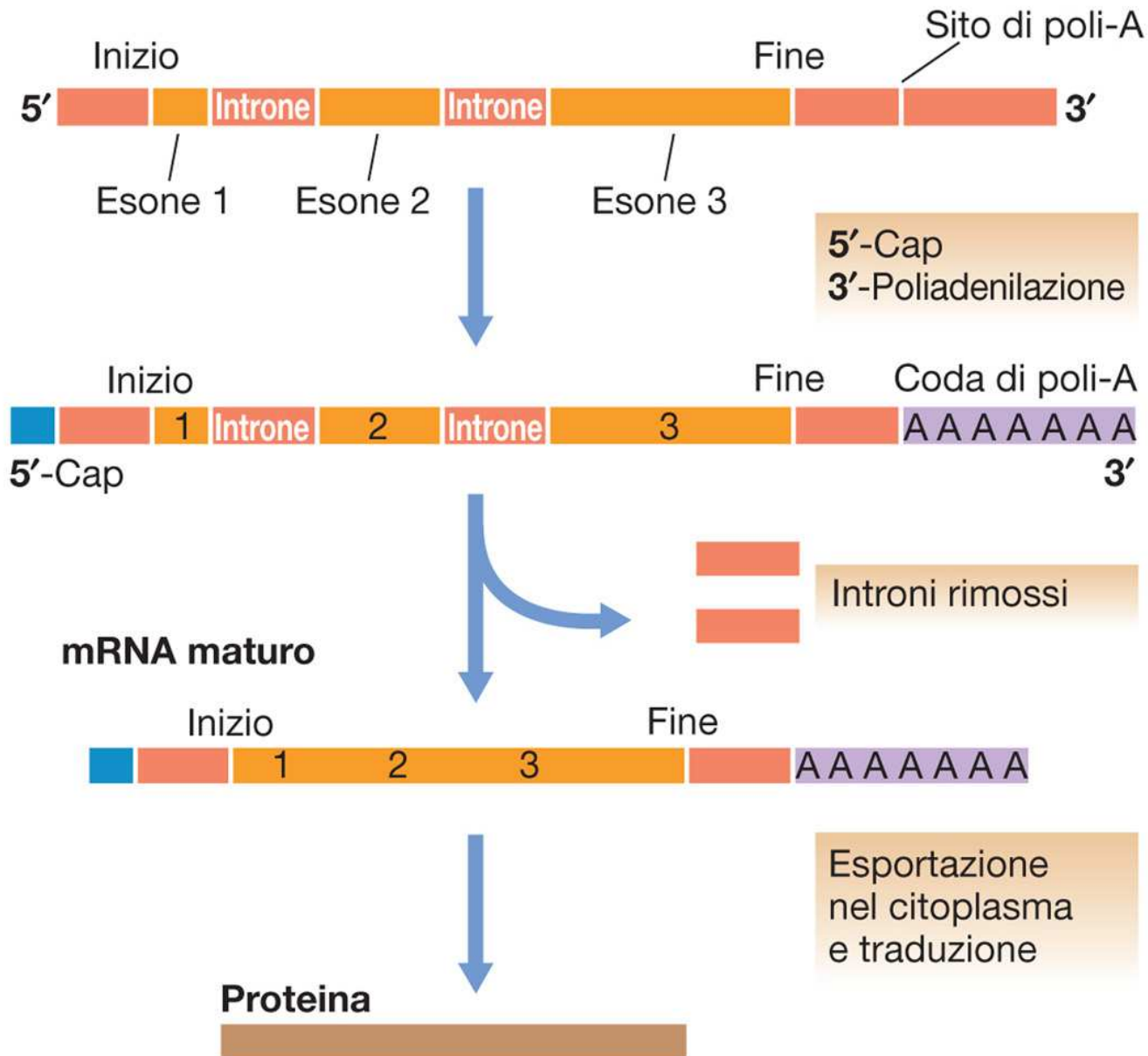


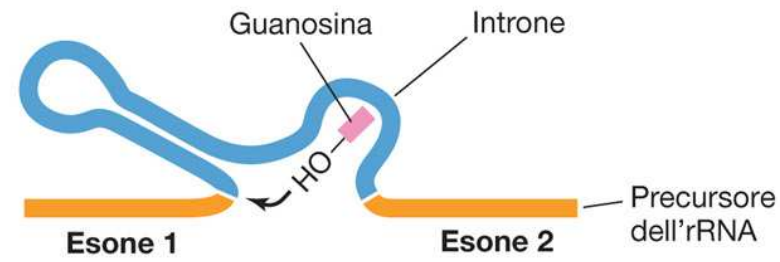
S. F. Conti and T. D. Brock

(b)

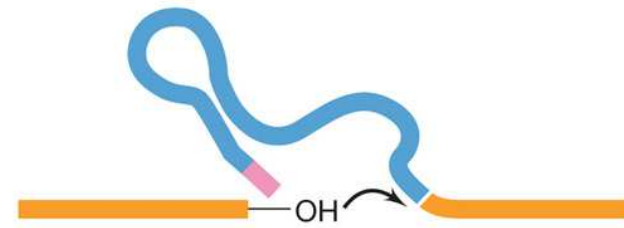


Pre-mRNA (trascrizione primaria)

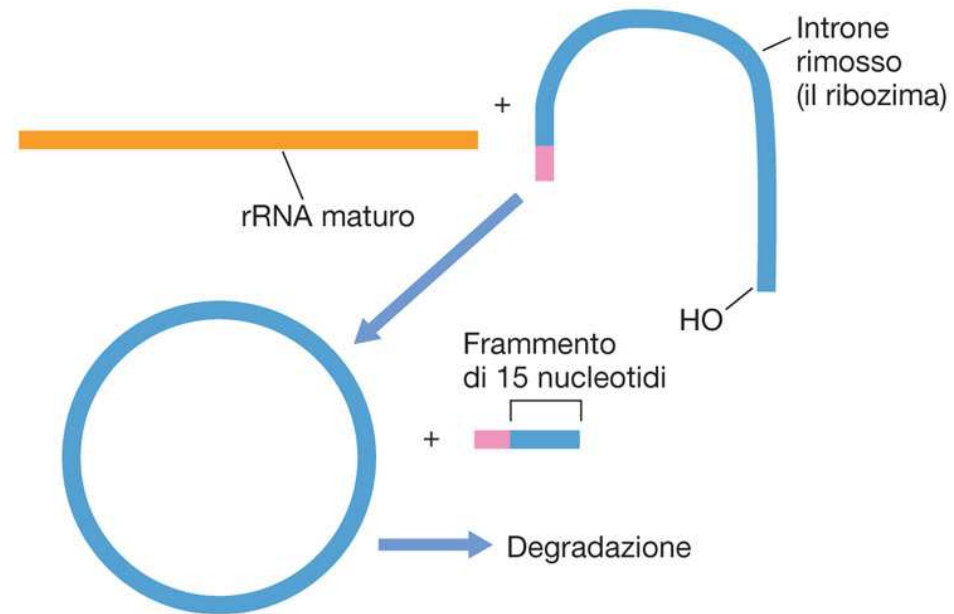




(a)



(b)



(c)

Eukaryotic microorganisms:
Protozoa

Tab. 12.1 Caratteristiche dei principali gruppi di protozoi

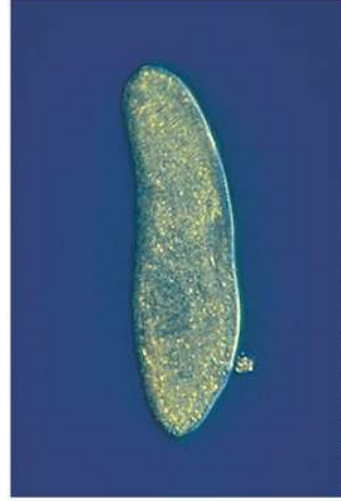
| Gruppo | Nome comune | Esempi tipici | Habitat | Patologie |
|-------------------------|----------------------|--|--|--|
| Mastigofori | Flagellati | <i>Trypanosoma, Giardia, Leishmania, Trichomonas</i> | Acqua corrente; parassiti di animali | Malattia del sonno africana, giardiosi, leishmaniosi |
| Euglenoidi ^a | Flagellati fototrofi | <i>Euglena</i> | Acqua corrente; alcune, acqua marina | Non sono note |
| Sarcodini | Ameba | <i>Amoeba, Entamoeba</i> | Acqua corrente e marina; parassiti di animali | Dissenteria amebica (amebiasi) |
| Ciliofori | Ciliati | <i>Balantidium, Paramecium</i> | Acqua corrente e marina; parassiti di animali; ruminanti | Dissenteria |
| Apicomplexa | Sporozoi | <i>Plasmodium, Toxoplasma</i> | Principalmente parassiti degli animali; insetti (vettori di malattie parassitarie) | Malaria, toxoplasmosi |

^a Questo gruppo viene considerato anche insieme alle alghe (vedi par. 12.13 e tab. 12.3).



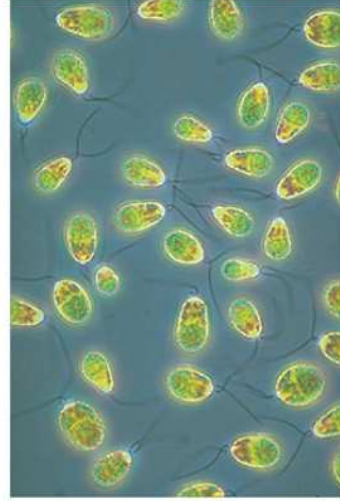
Carolina Biological Supply Co.

(a)



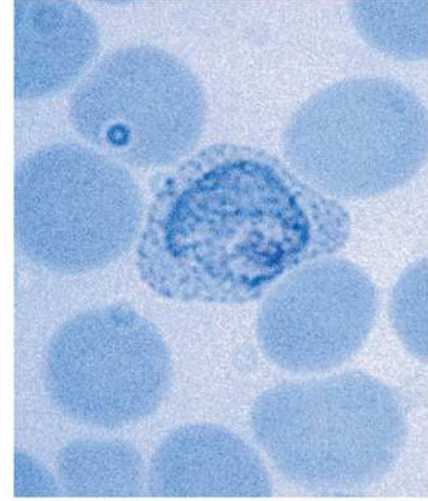
Carolina Biological Supply Co.

(b)



Arthur M. Nonomura

(c)

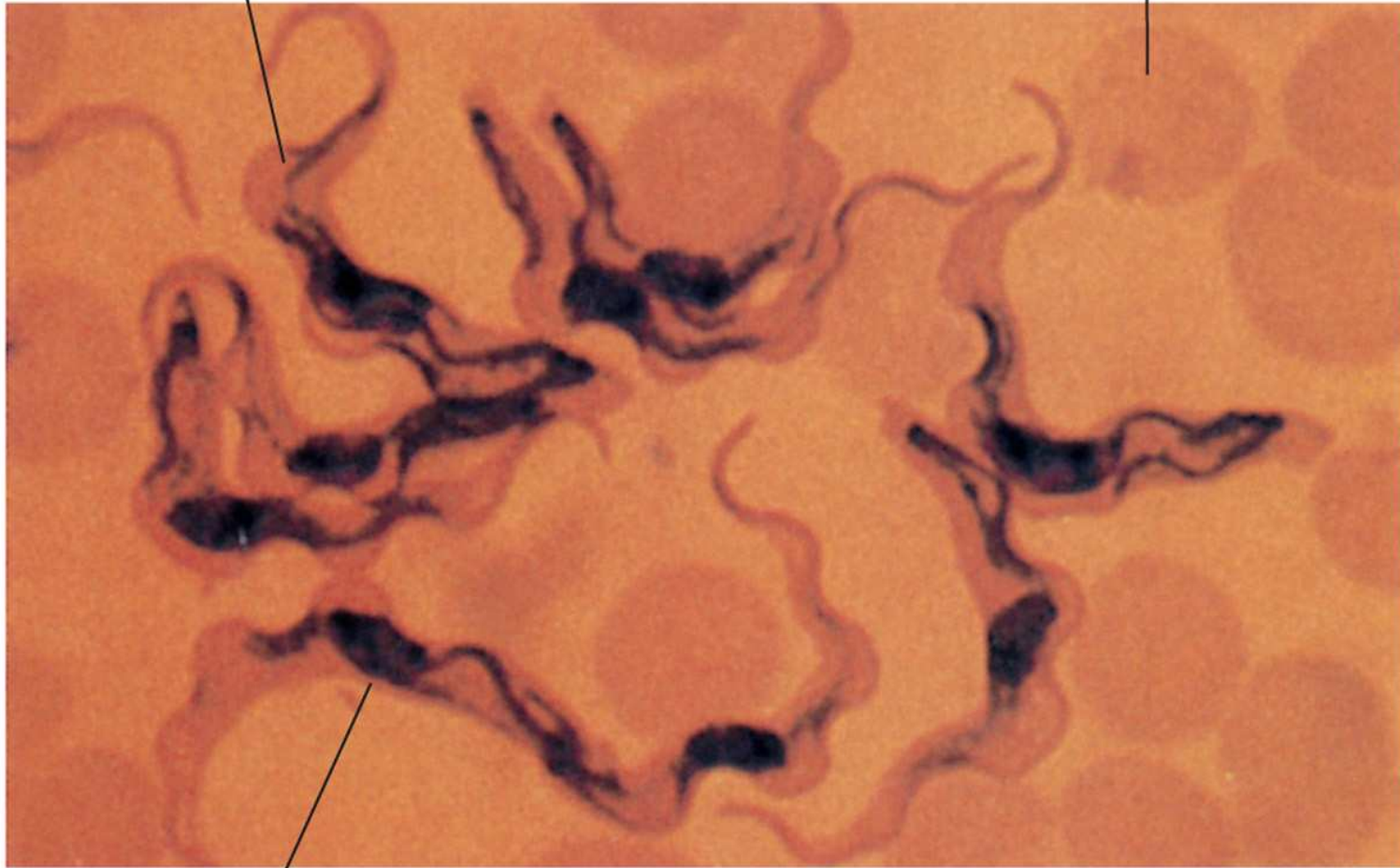


Dr. Mae Melvin, CDC Public Health Image Library, PHIL

(d)

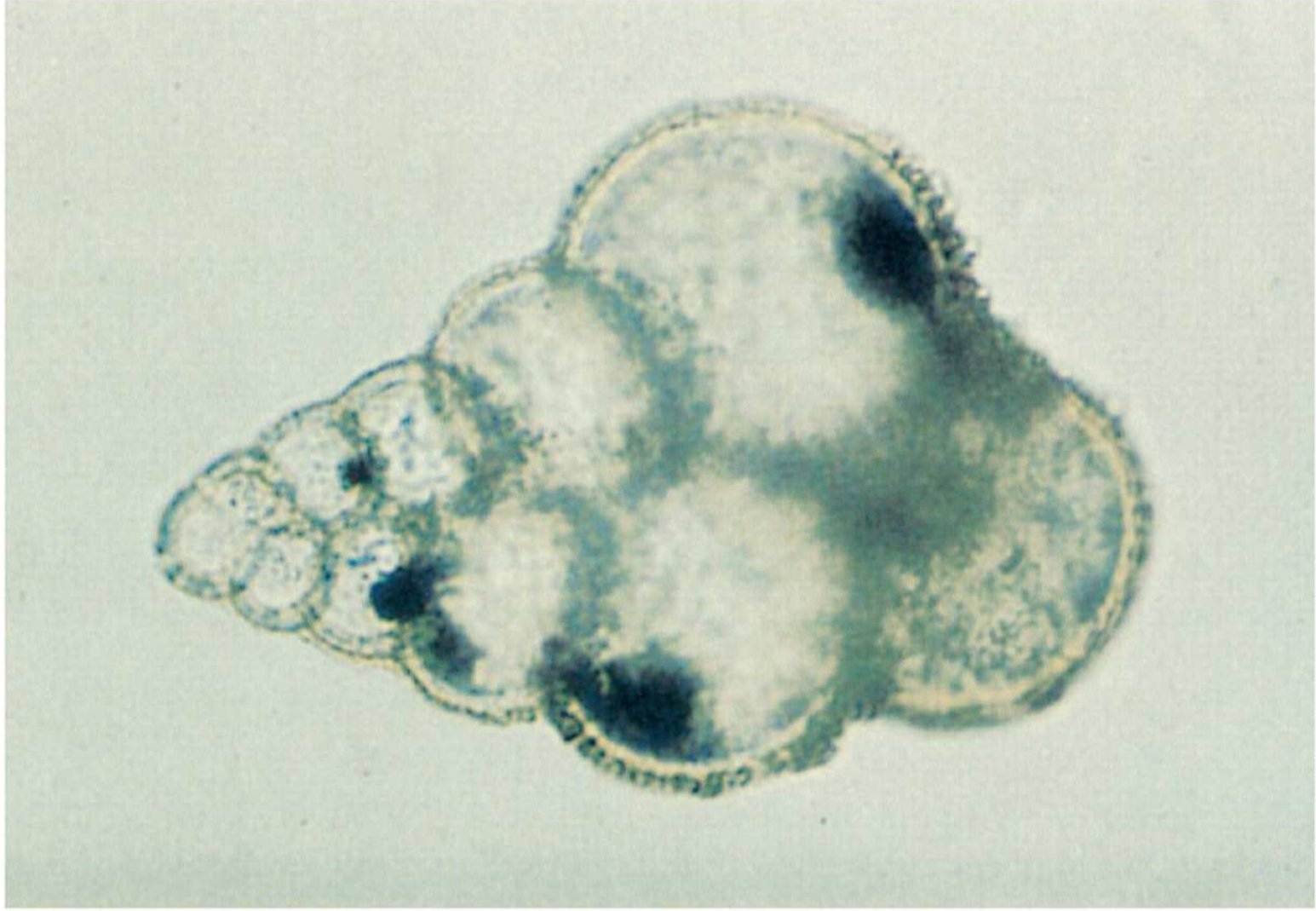
Lembo della membrana

Globulo rosso

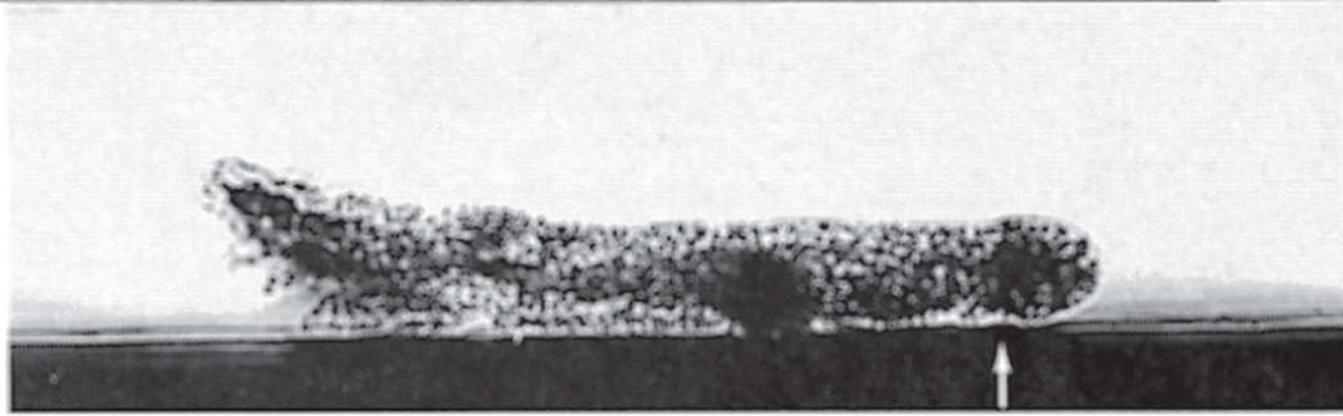
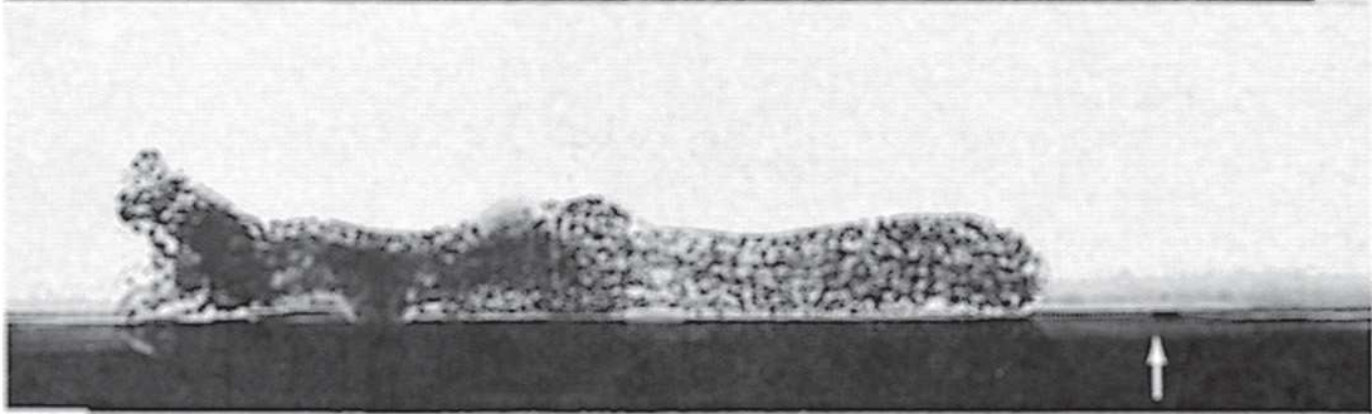
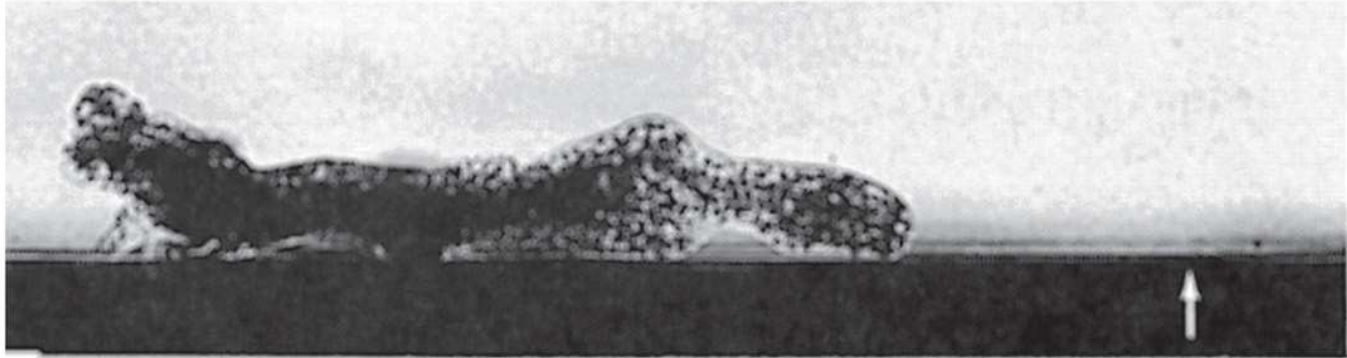


Cellula di tripanosoma

Arthur M. Siegelman



Carolina Biological Supply Co.



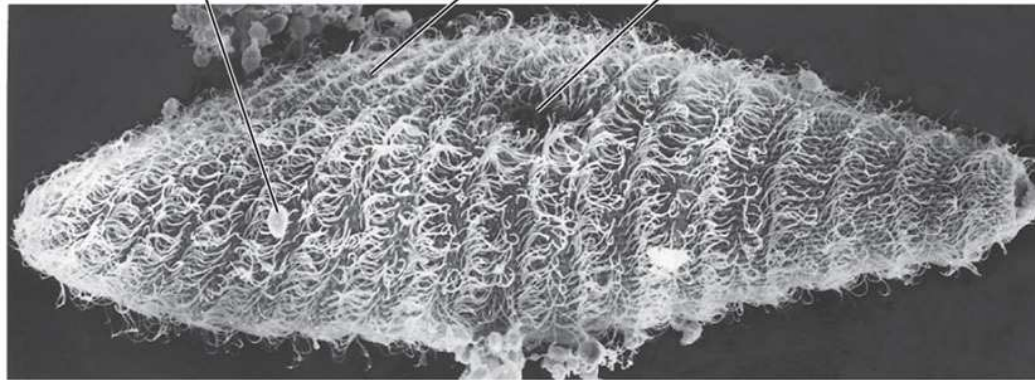
M. Haberey



(a) Cellula di lievito
(utilizzata come scala
per le dimensioni)

Ciglia

Bocca (gola)



(b)

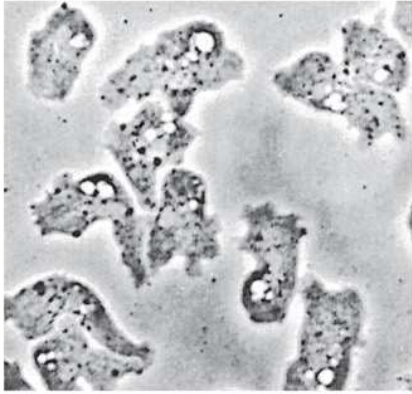
Sydney Tamm



American Society of Clinical Pathologists

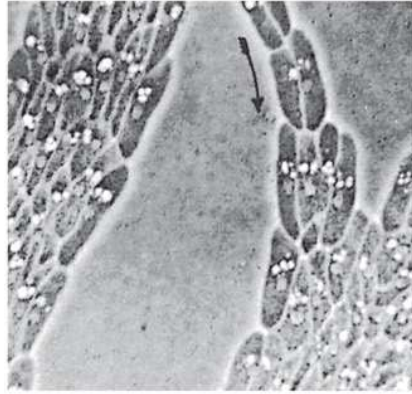


Carolina Biological Supply Co.



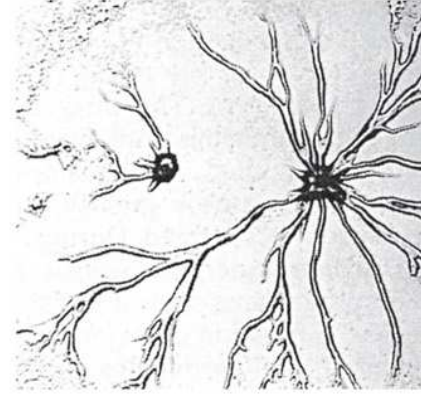
Kenneth B. Raper

(a)



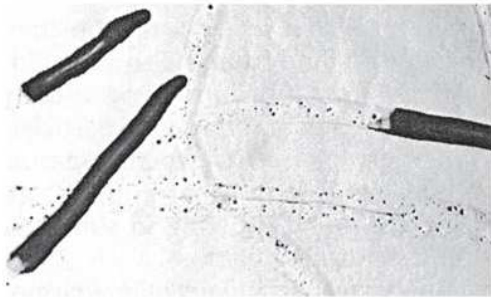
Kenneth B. Raper

(b)



Kenneth B. Raper

(c)



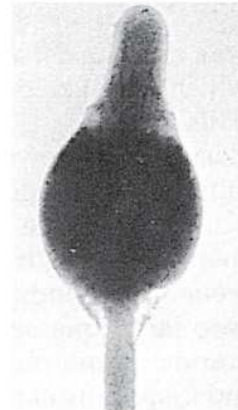
Kenneth B. Raper

(d)



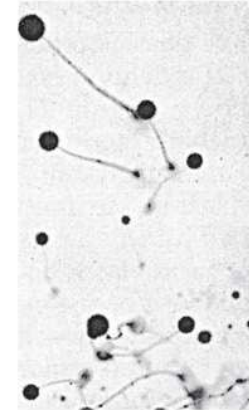
Kenneth B. Raper

(e)



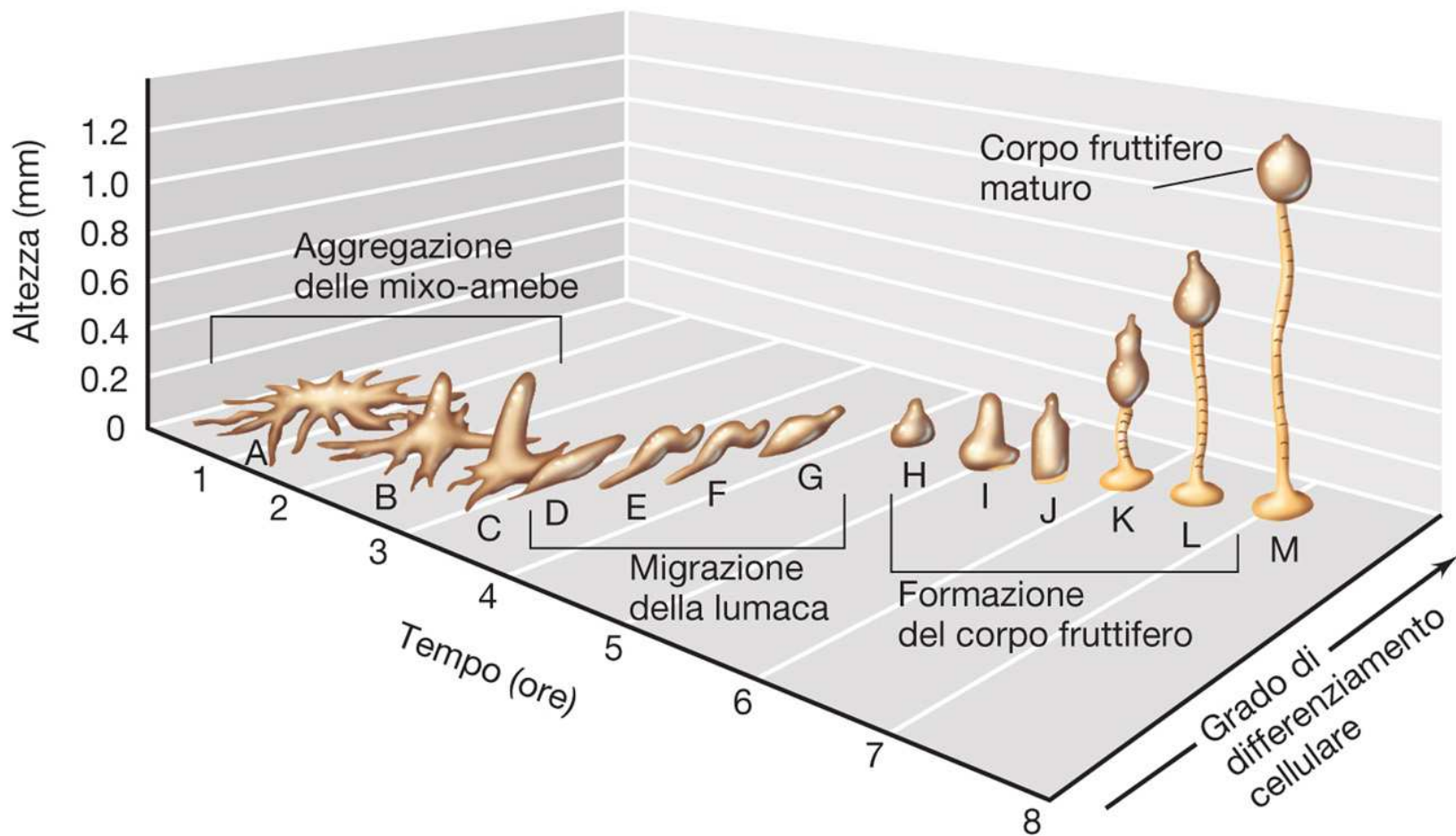
Kenneth B. Raper

(f)



Kenneth B. Raper

(g)



Eukaryotic microorganisms:
fungi

Tab. 12.2 Classificazione e principali caratteristiche dei funghi^a

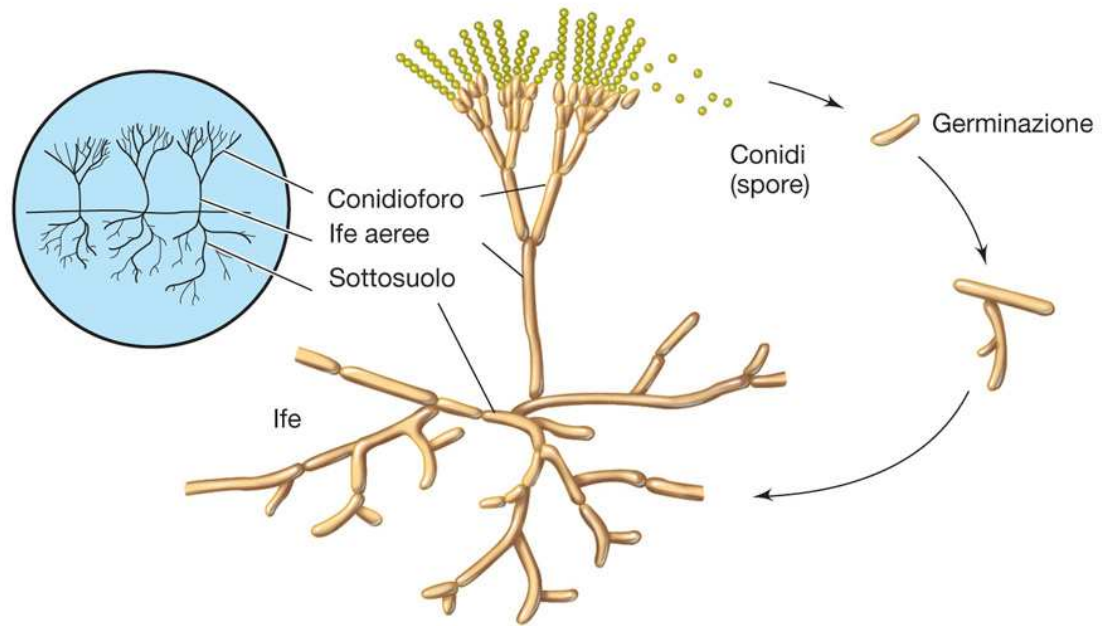
| Gruppo | Nome comune | Ife | Esempi tipici | Tipi di spore sessuali | Habitat | Patologie |
|---------------|--|-------------|--|-------------------------------|--|--|
| Ascomiceti | Funghi a sacco | Settate | <i>Neurospora</i> , <i>Saccharomyces</i> , <i>Morchella</i> (spugnole) | Ascospore | Suolo, materiale vegetale in decomposizione | Grafiosi dell'olmo, cancro del castagno, fungo della segale cornuta, marciumi |
| Basidiomiceti | Funghi a bastoncino, funghi fruttiferi | Settate | <i>Amanita</i> (fungo velenoso), <i>Agaricus</i> (fungo commestibile) | Basidiospore | Suolo, materiale vegetale in decomposizione | Marciume del colletto, ruggine del frumento, carbone dei cereali |
| Zigomiceti | Muffe del pane | Cenocitiche | <i>Mucor</i> , <i>Rhizopus</i> (comune muffa del pane) | Zigospore | Suolo, materiale vegetale in decomposizione | Alterazioni alimentari, raramente coinvolti in patologie parassitarie |
| Oomiceti | Muffe d'acqua | Cenocitiche | <i>Allomyces</i> | Oospore | Acquatici | Ruggine della patata, alcune malattie dei pesci |
| Deuteromiceti | Funghi imperfetti | Settate | <i>Penicillium</i> , <i>Aspergillus</i> , <i>Candida</i> | Nessuna | Suolo, materiale vegetale in decomposizione, cute di animali | Avvizzimento dei vegetali, infezioni negli animali come tricofizia, piede dell'atleta e altre dermatomicosi (<i>Candida</i>) |

^a Con l'eccezione degli Oomiceti, che sono filogeneticamente distinti, gli altri gruppi sono strettamente correlati (vedi fig. 14.20)



Barry Katz, Mycosearch

(a)



(b)



Cheryl L. Broadie

(a)



CDC Public Health Image Library, PHIL

(b)



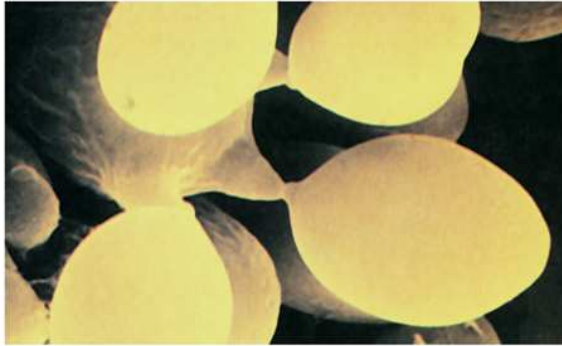
W. Ormshead

(a)



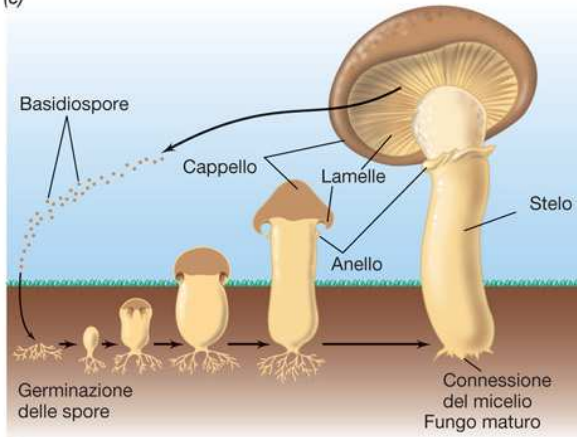
USDA

(b)

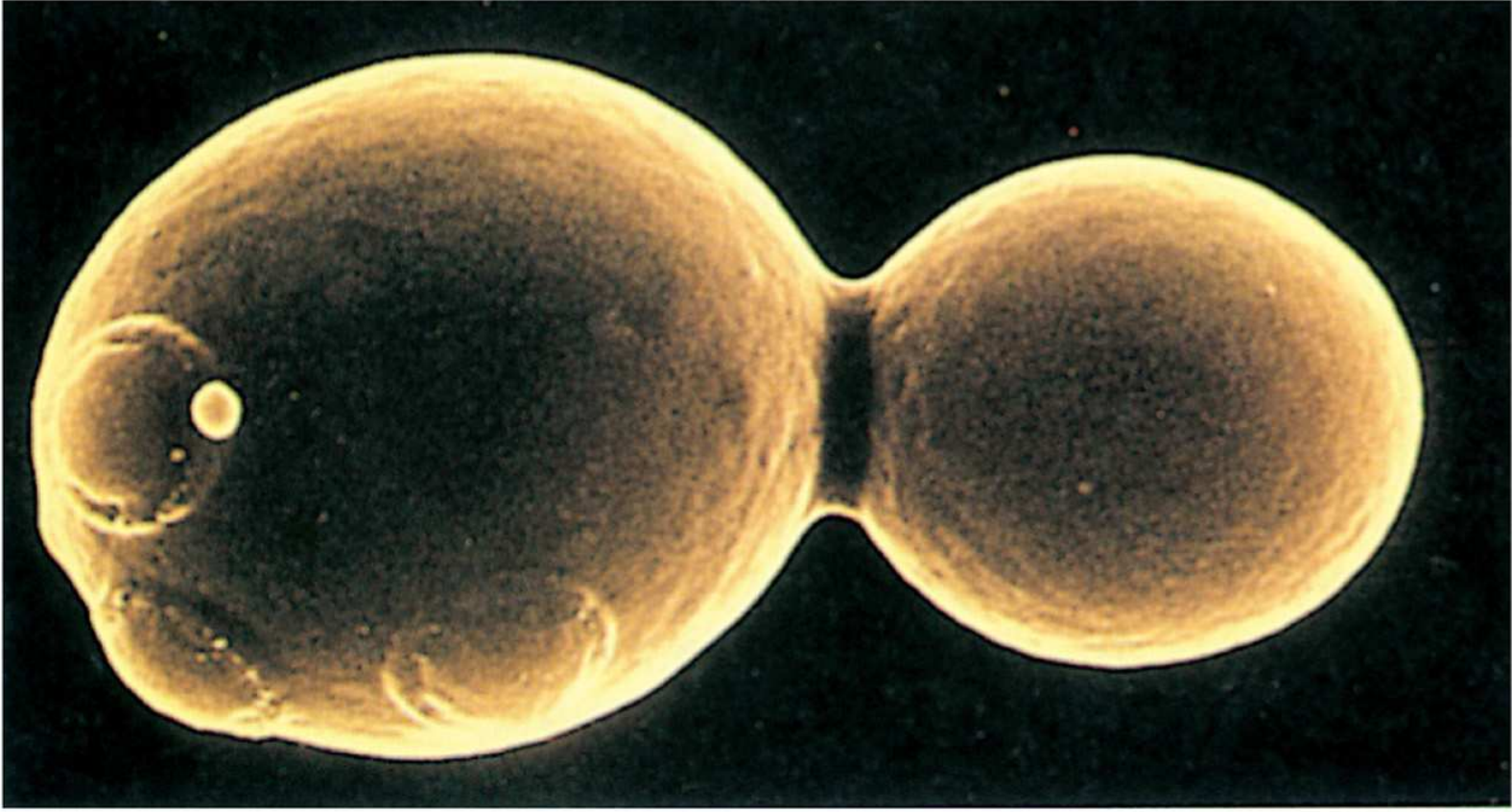


S. L. Pflieger

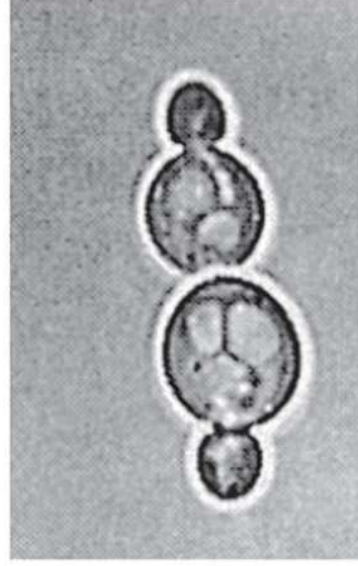
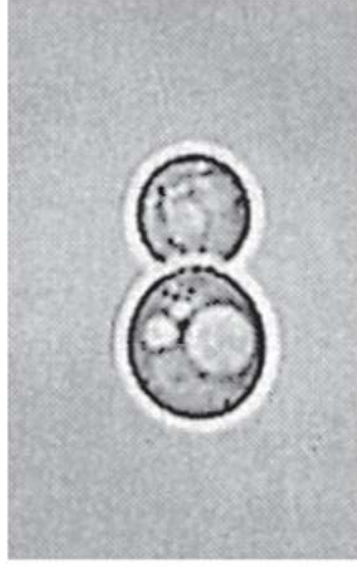
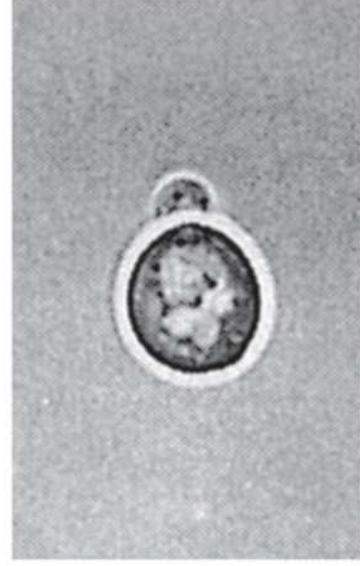
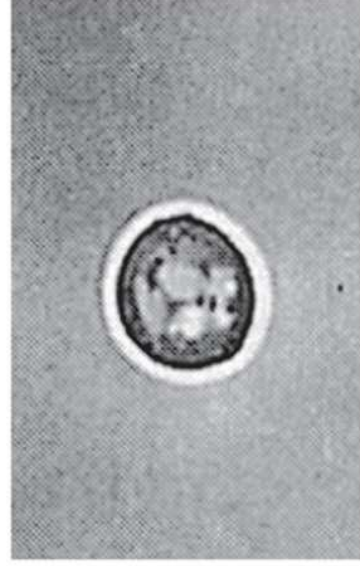
(c)



(d)



J. Forsdyke



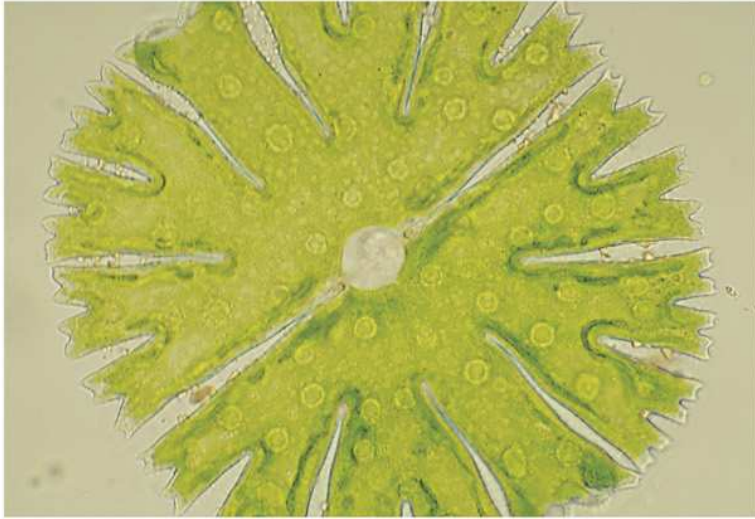
T. D. Brock

Eukaryotic microorganisms:
Algae

Tab. 12.3 Proprietà dei principali gruppi di alghe

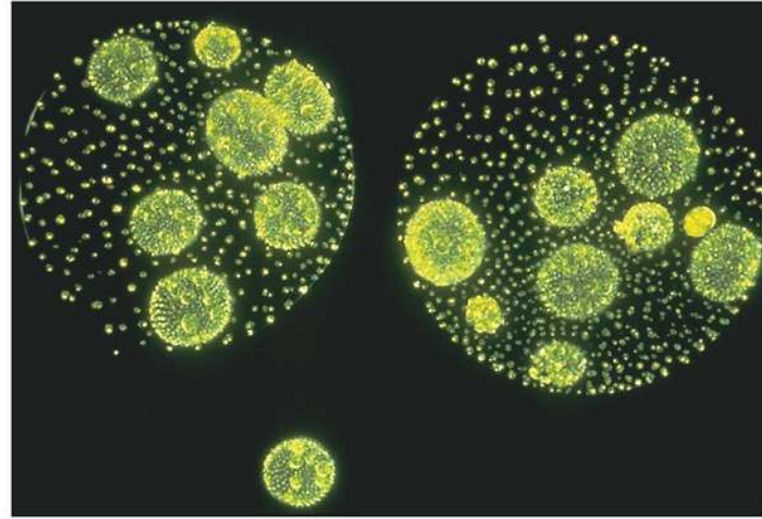
| Gruppo | Nome comune | Morfologia | Pigmenti | Esempi tipici | Materiali di riserva carboniosi | Parete cellulare | Habitat principali |
|---------------------------|------------------------------|--|--|--------------------------------------|---|--------------------------------------|--|
| Chlorophyta | Alghe verdi | Unicellulare a tallo | Clorofille <i>a</i> e <i>b</i> | <i>Chlamydomonas</i> | Amido (α -1,4-glucano) saccarosio | Cellulosa | Acqua dolce, suoli, in alcuni casi il mare |
| Euglenophyta ^a | Euglenoidi | Flagellati unicellulari | Clorofille <i>a</i> e <i>b</i> | <i>Euglena</i> | β -1,2-glucano | Assente | Acqua dolce, in alcuni casi il mare |
| Dinoflagellata | Dinoflagellati | Flagellati unicellulari | Clorofille <i>a</i> e <i>c</i> , xantofille | <i>Gonyaulax</i> , <i>Pfiesteria</i> | Amido (α -1,4-glucano) | Cellulosa | Principalmente marino |
| Chrysophyta | Alghe dorate brune, diatomee | Unicellulare | Clorofille <i>a</i> e <i>c</i> | <i>Nitzschia</i> | Lipidi | Due componenti sovrapposte di silice | Acqua dolce e acqua marina, suolo |
| Phaeophyta | Alghe brune | Filamentose a tallo, a volte particolarmente grandi e simili alle piante | Clorofille <i>a</i> e <i>c</i> , xantofille | <i>Laminaria</i> | Laminarina (β -1,3-glucano), mannitolo | Cellulosa | Acqua marina |
| Rhodophyta | Alghe rosse | Unicellulari, filamentose a tallo | Clorofille <i>a</i> e <i>d</i> , ficocianina, ficoeritrina | <i>Polysiphonia</i> | Floridina, amido (α 1,6- e α -1,4-glucano) | Cellulosa | Acqua marina |

^a Questo gruppo è considerato anche nei protozoi (vedi par. 12.10).



T.D. Brock

(a)



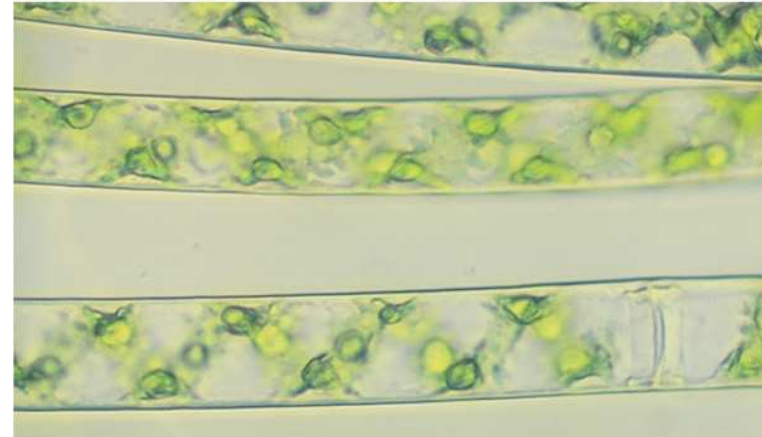
Dennis Kunkel

(b)



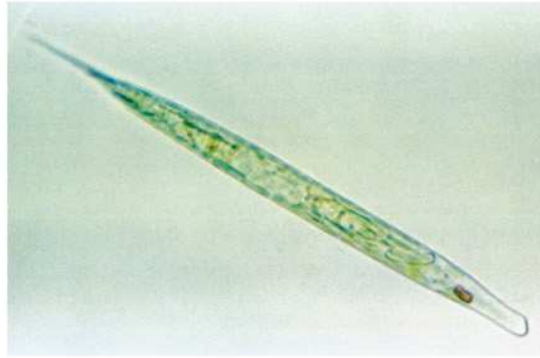
Carolina Biological Supply Co.

(c)



Carolina Biological Supply Co.

(d)



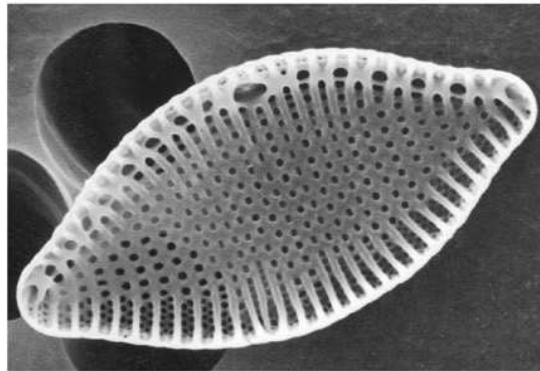
Carolina Biological Supply Co.

(a)



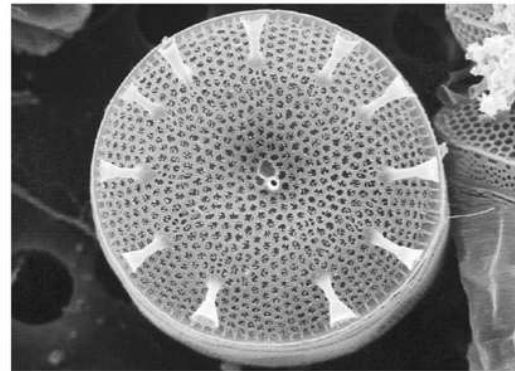
Carolina Biological Supply Co.

(b)



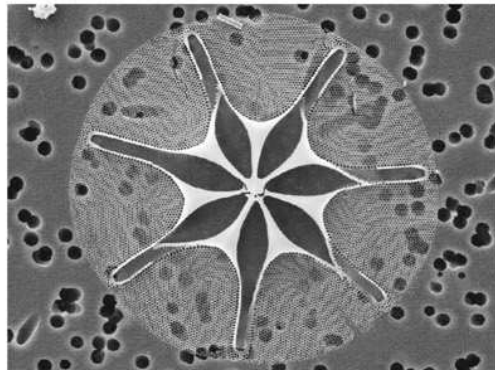
Irena Kaczmarek

(c)



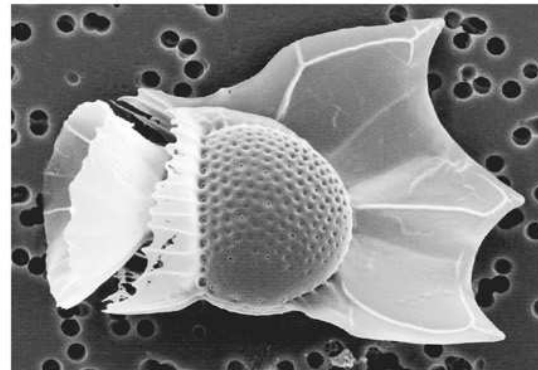
Irena Kaczmarek

(d)



Irena Kaczmarek

(e)



Irena Kaczmarek

(f)



Rita R. Colwell

(a)



North Carolina State University Center for Applied Ecology

(b)



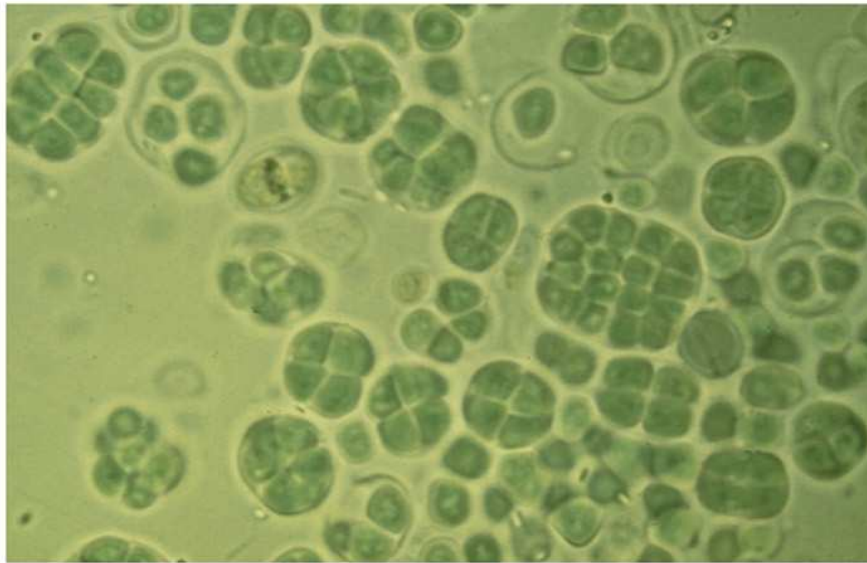
North Carolina State University Center for Applied Ecology

(c)



E. Imre Friedmann

(a)



E. Imre Friedmann

(b)