

"Picocyano"

Morphology of strains

Taxonomy history

- *Synechococcus* Nägeli 1849
- *Synechocystis* Sauvageau 1892
- *Cyanothece* Komárek 1976
- *Cyanobium* Rippka & Cohen-Bazire 1983
- *Cyanobacterium* Rippka & Cohen-Bazire
1983

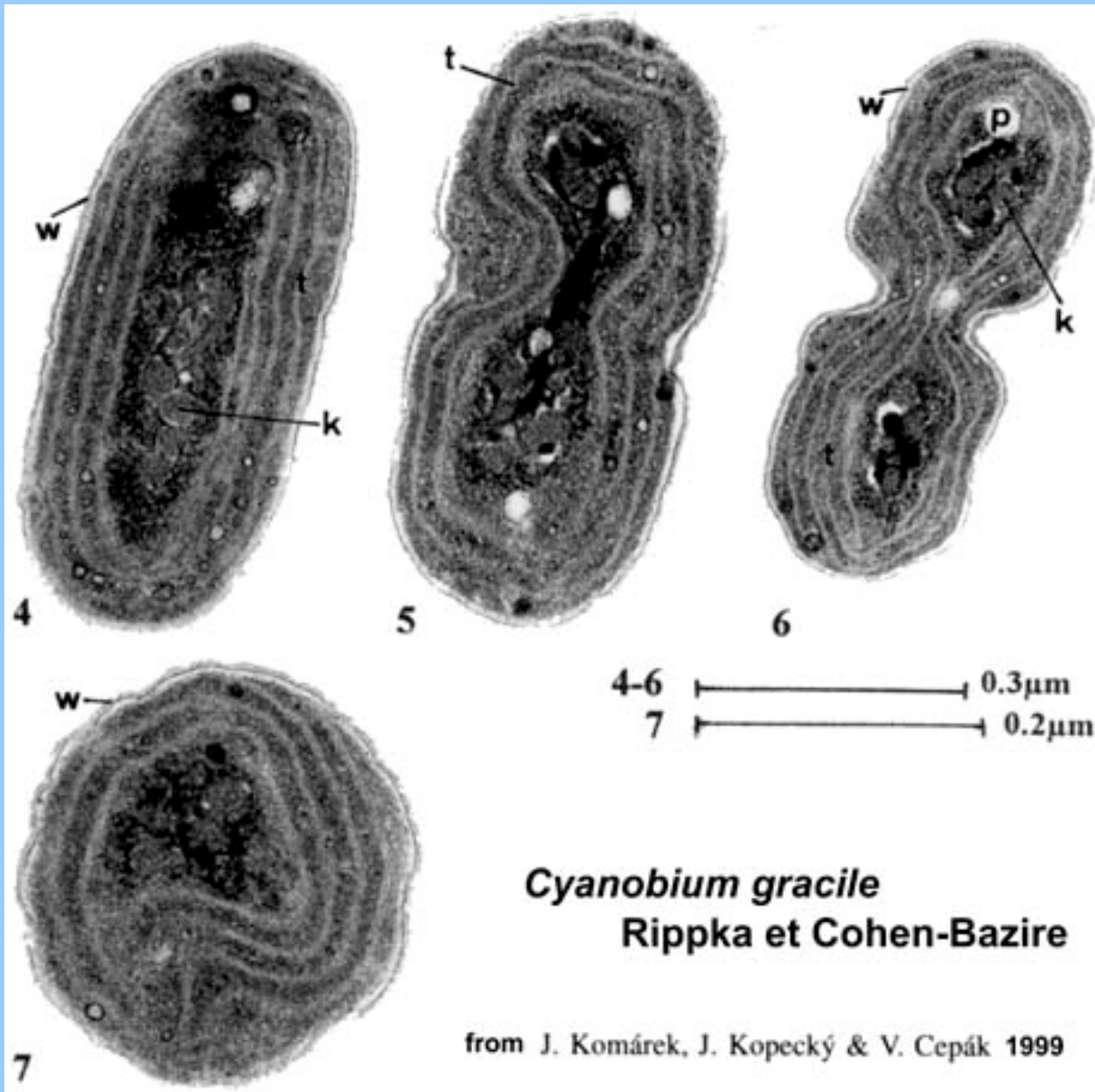
Three genera

- *Synechococcus* and *Cyanobium* with identical arrangement of thylakoids; differ by cell shape, mode of division
- *Cyanobacterium* differ from the two by thylakoid arrangement and cell shape

Cell size

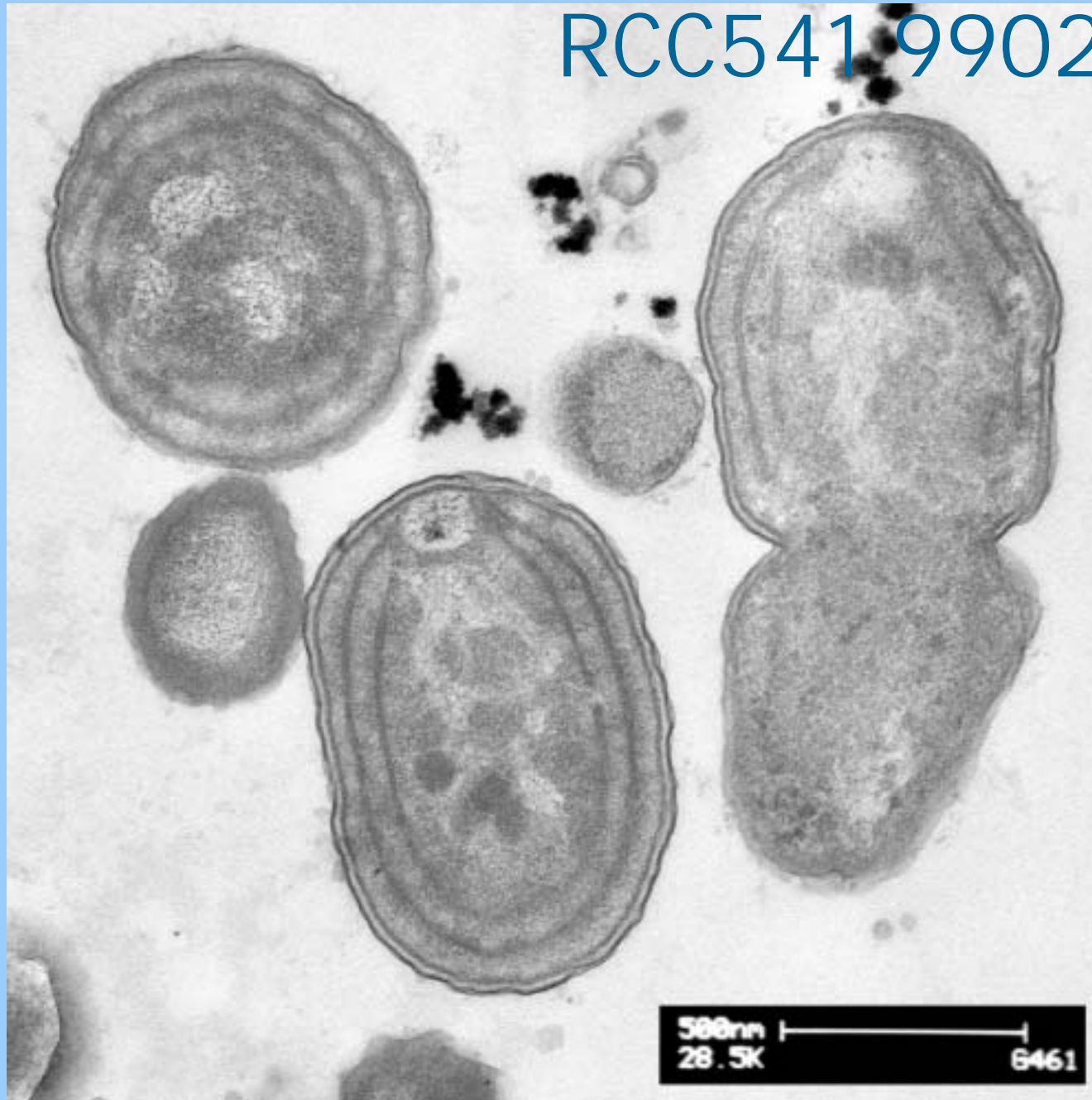
- *Cyanobium* 1-4 x 0.2-3 μm
- *Synechococcus* 1.2-28 x 1-6 μm
- *Cyanobacterium* 3.4-12 x 2-7 μm

Cyanobium



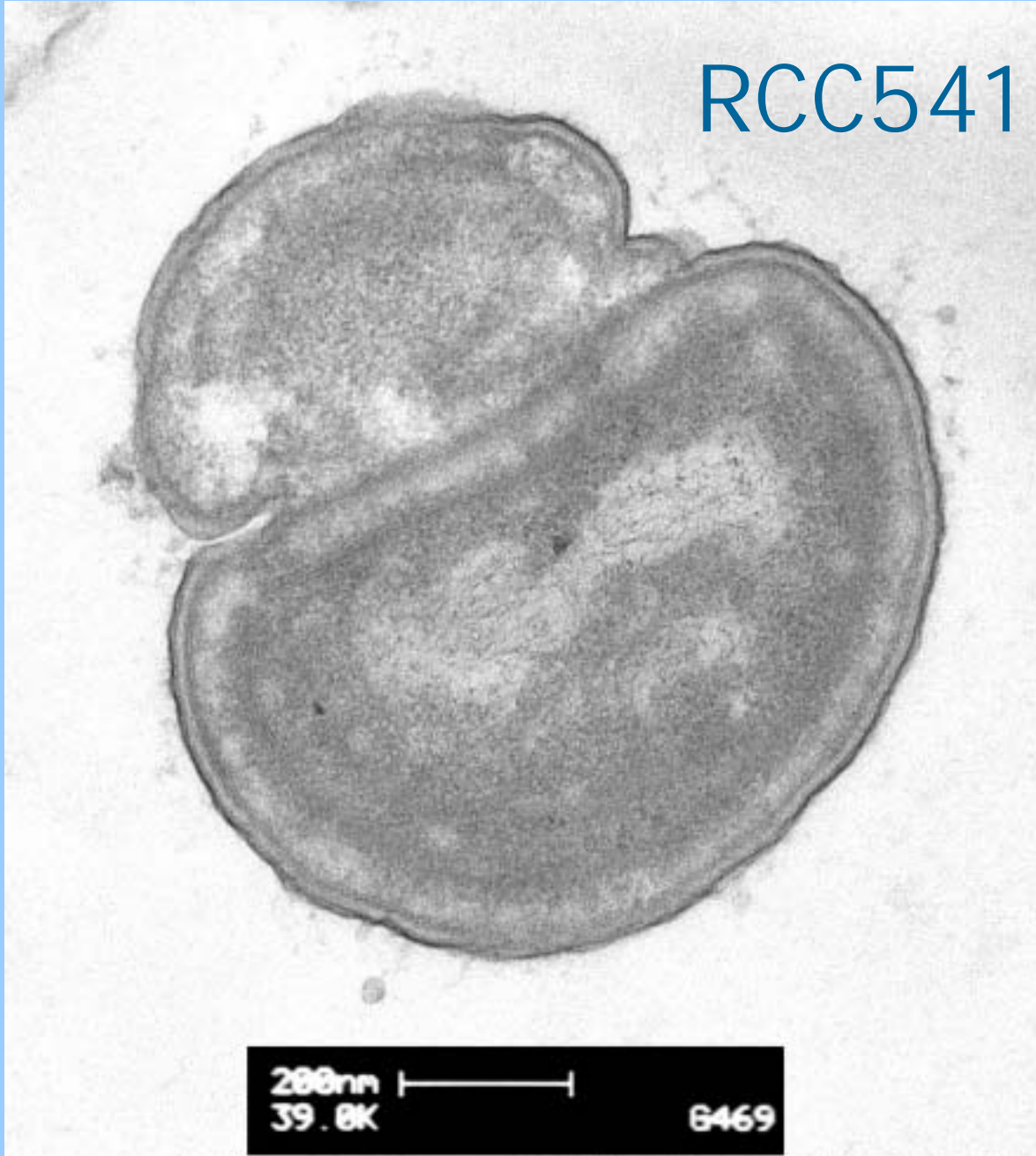
- Oval to elongated cells
- Peripheral thylakoids

RCC541 9902 G461

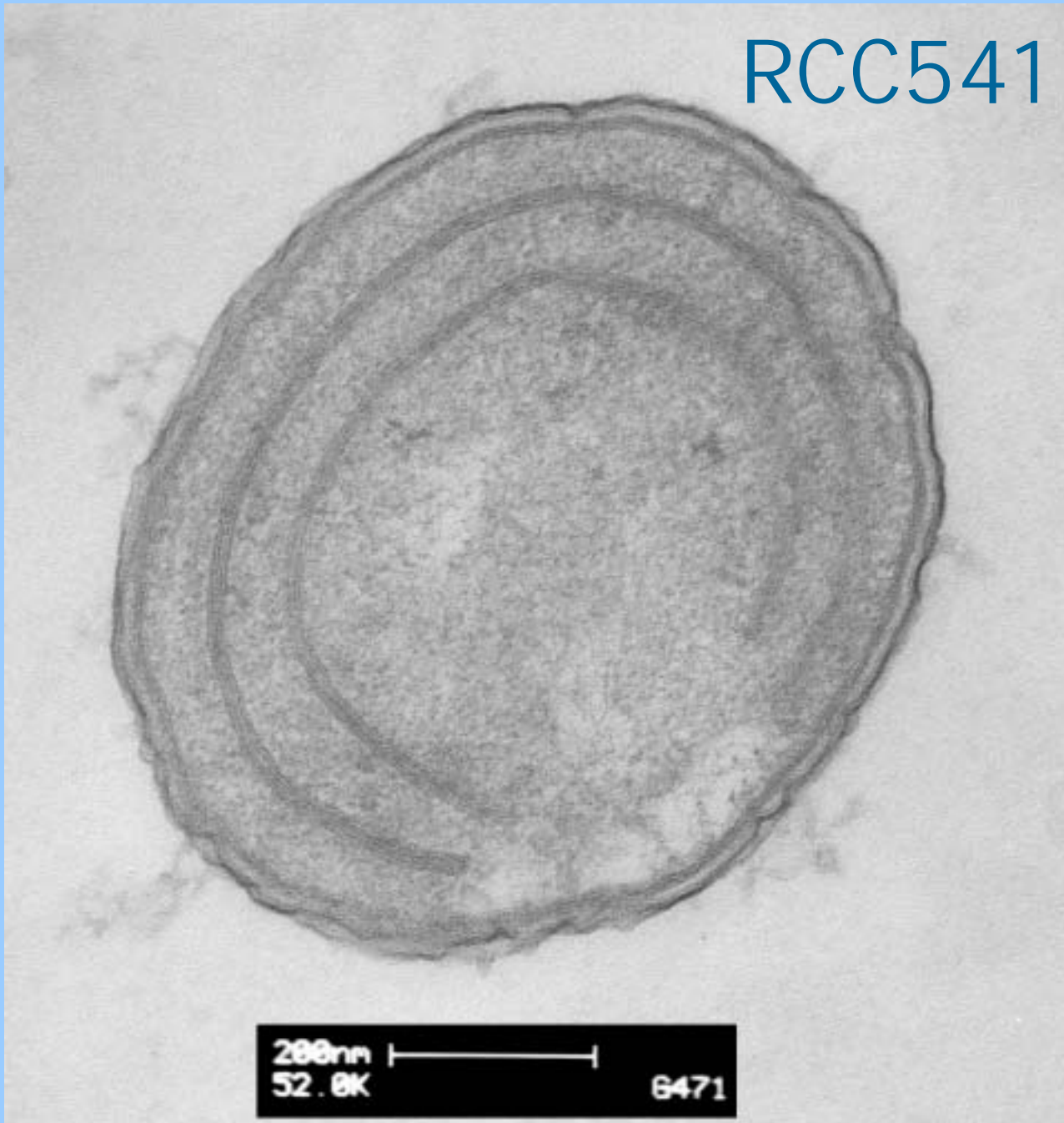


500nm |-----|
28.5K 6461

RCC541 9902 G469



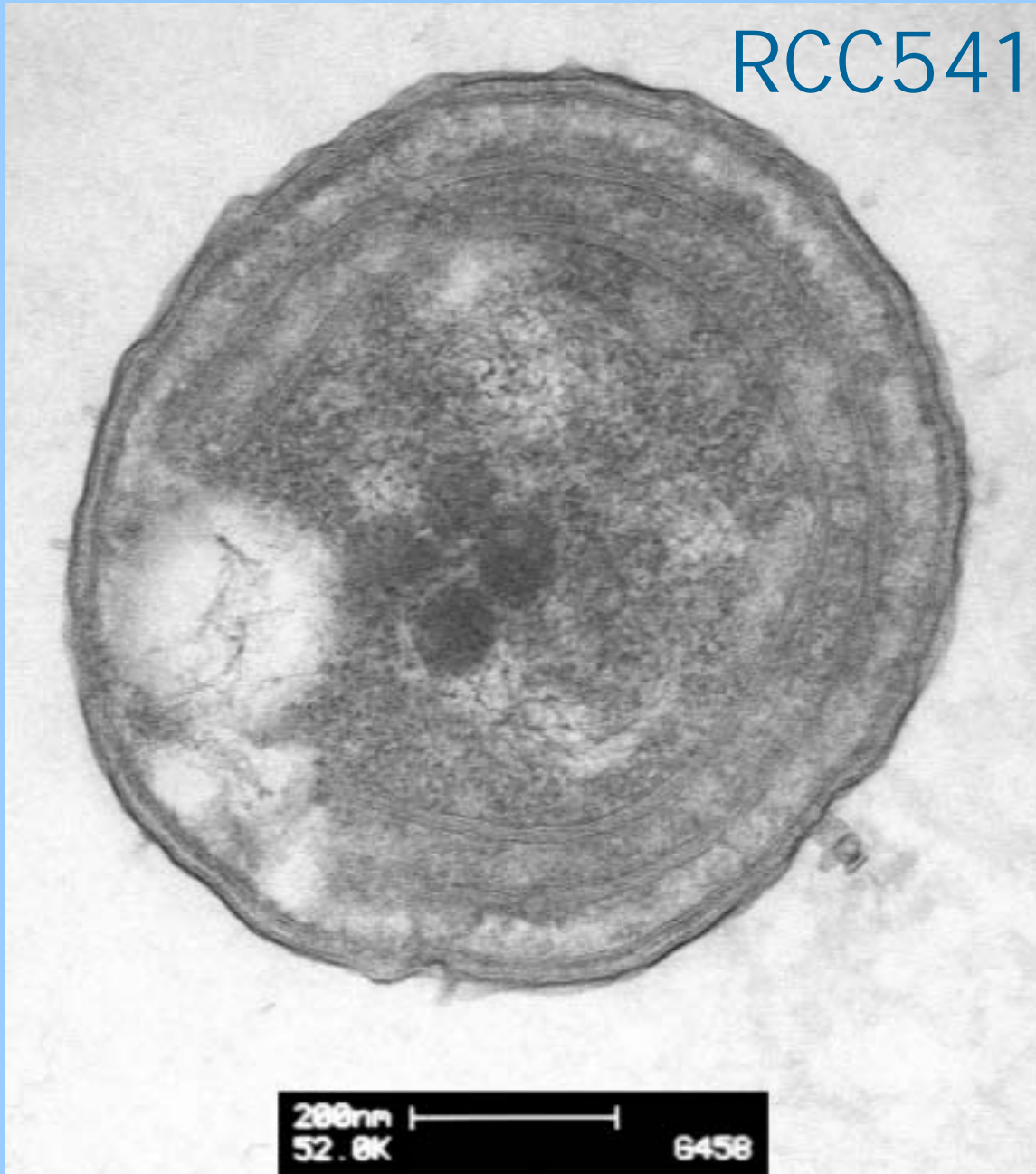
RCC541 9902 G471



200nm
52.8K

6471

RCC541 9902 G458

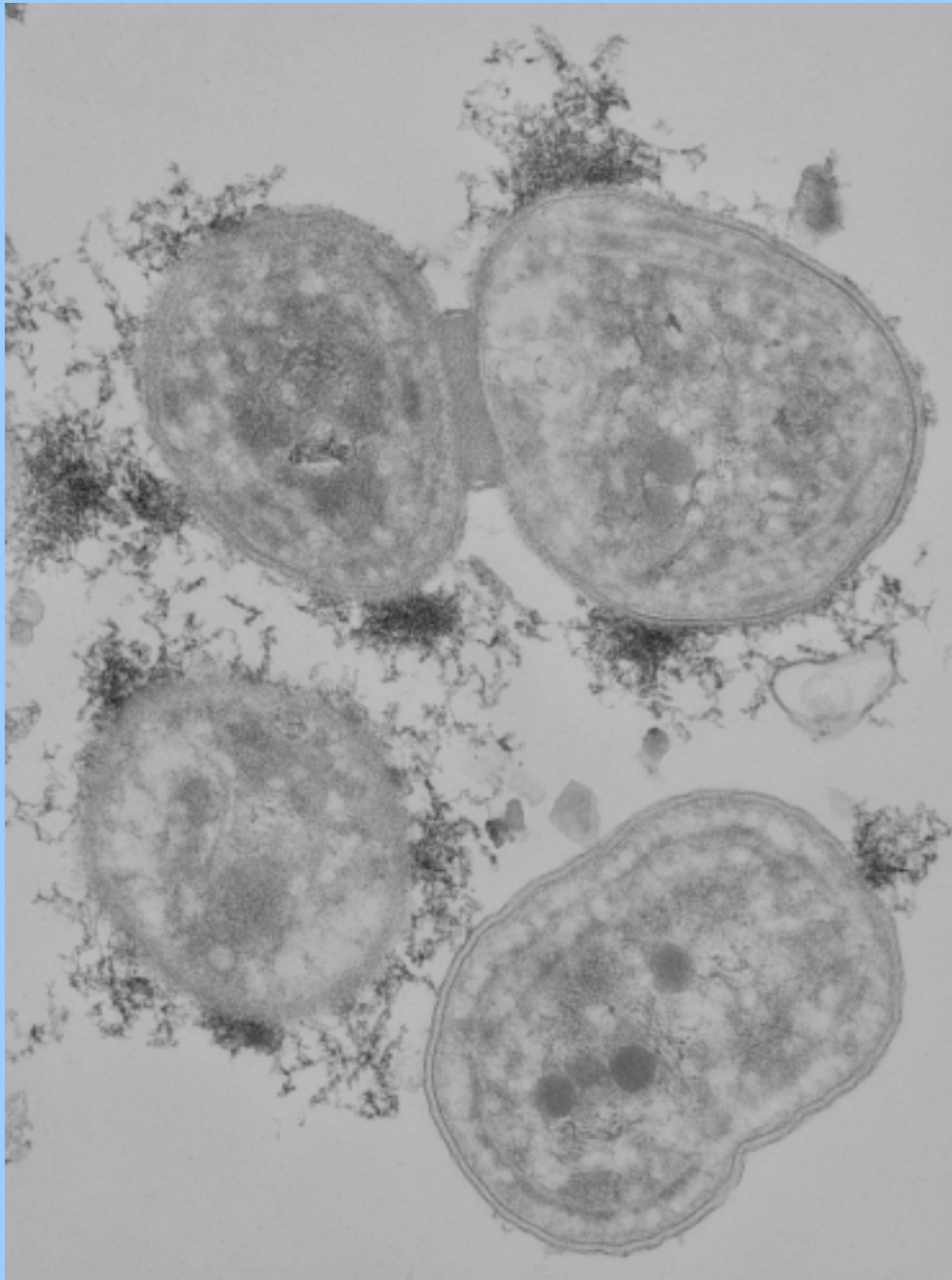


Picoaeoslofjorden



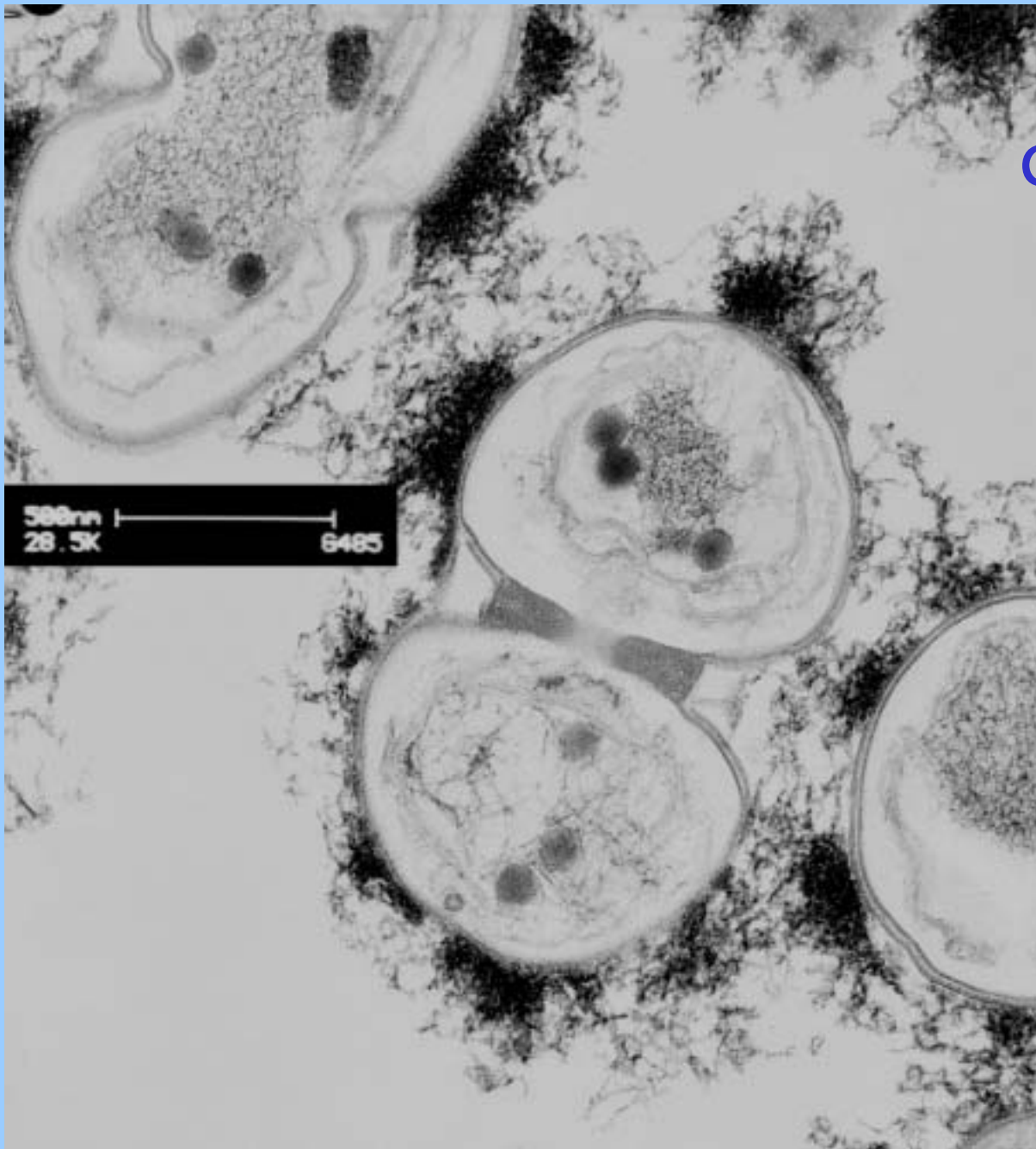
Komárek *et al.* (1999) recombined three known marine species of *Synechococcus* to
Cyanobium

- *Cyanobium bacillare* (Butcher) Komárek, Kopecký & Cepák 1999 = *Synechococcus bacillaris* Butcher 1952
- *Cyanobium gaarderi* (Ålvik) Komárek, Kopecký & Cepák 1999 = *Synechococcus gaarderi* Ålvik 1934 = *Cyanothece gaarderi* (Ålvik) Komárek 1976
- *Cyanobium oceanicum* (Hall & Claus) Komárek, Kopecký & Cepák 1999 = *Synechococcus oceanicus* Hall & Claus 1965

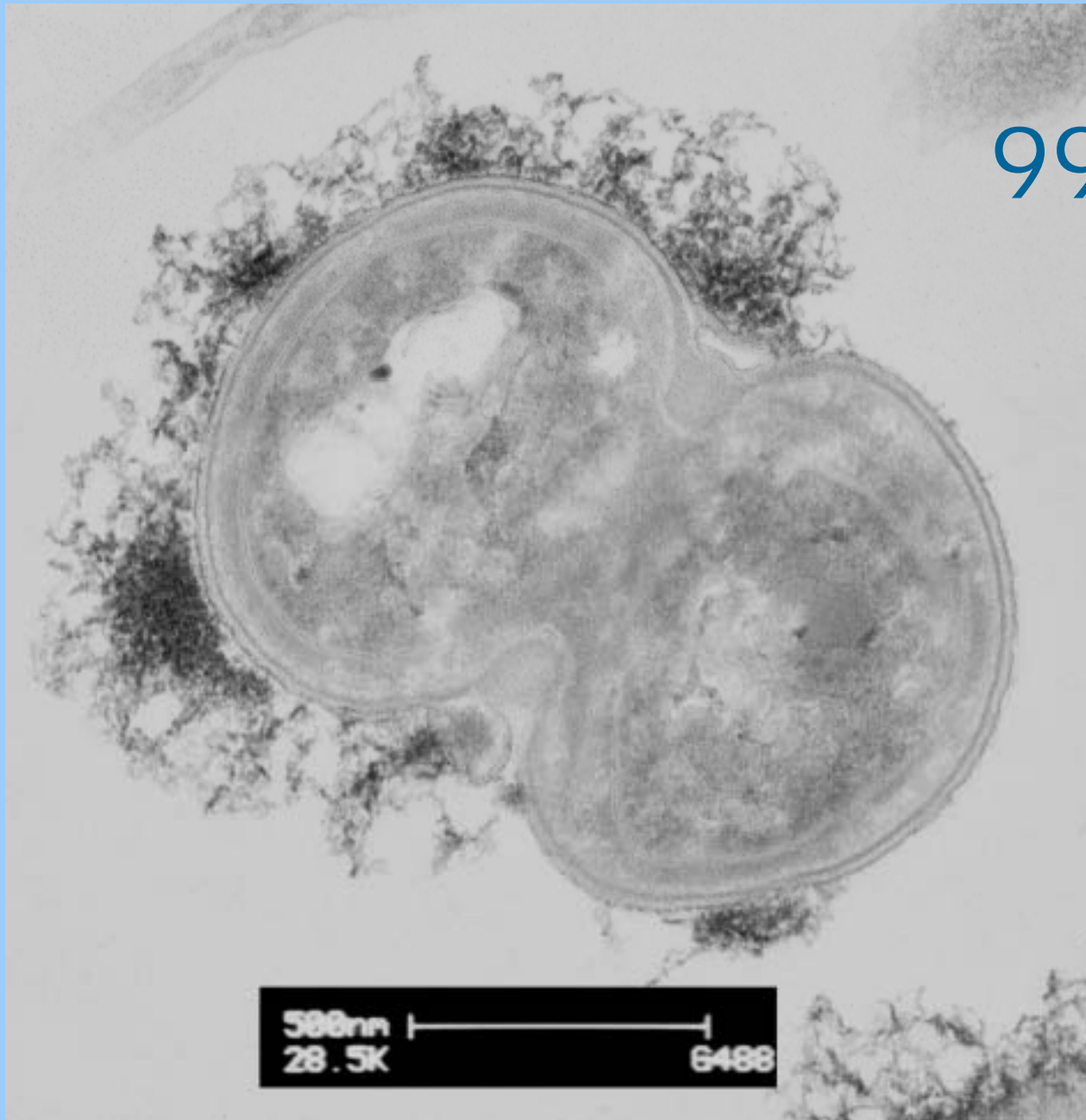


Warwick 9918-
cyano-N221x28

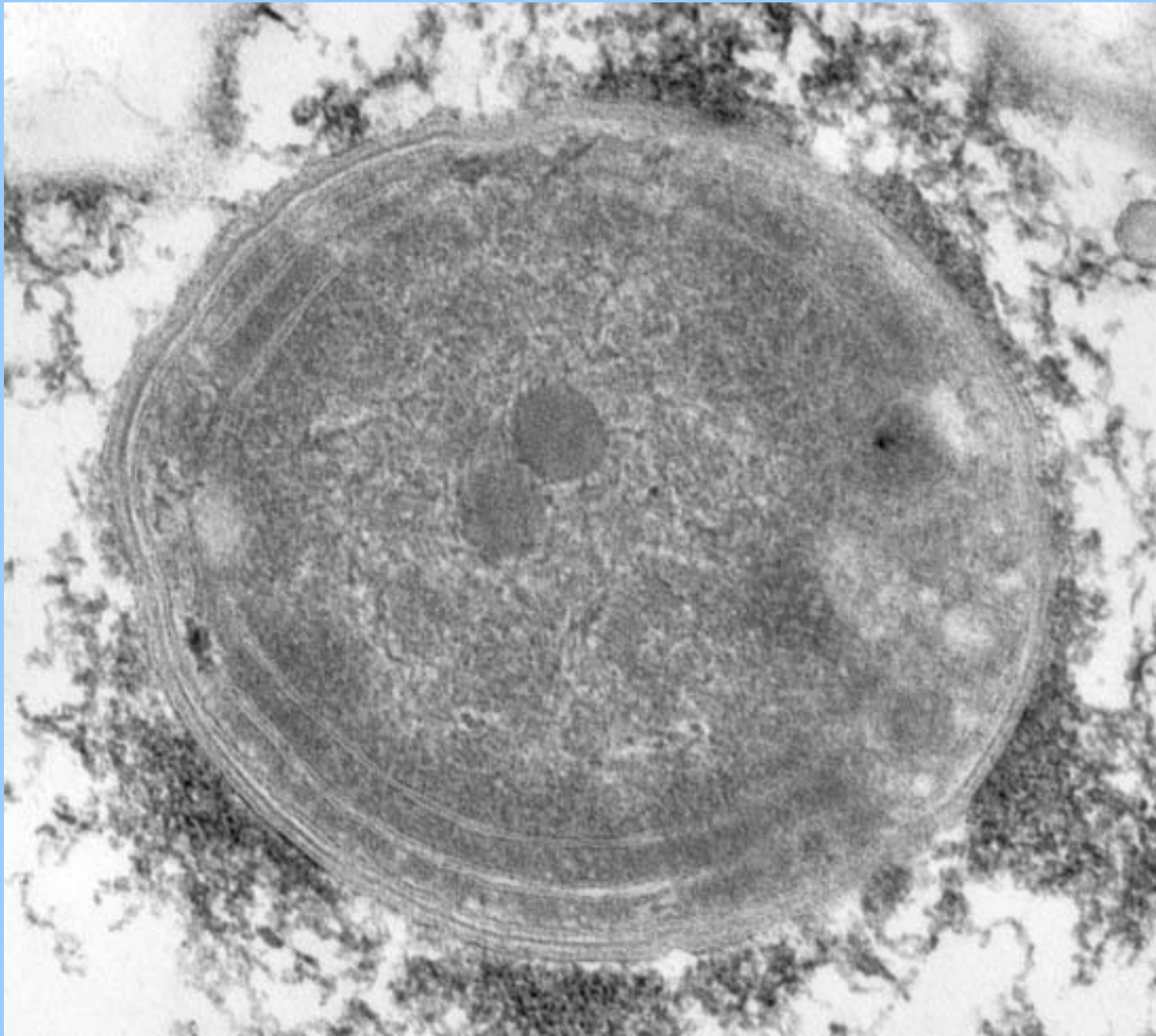
9918 G485

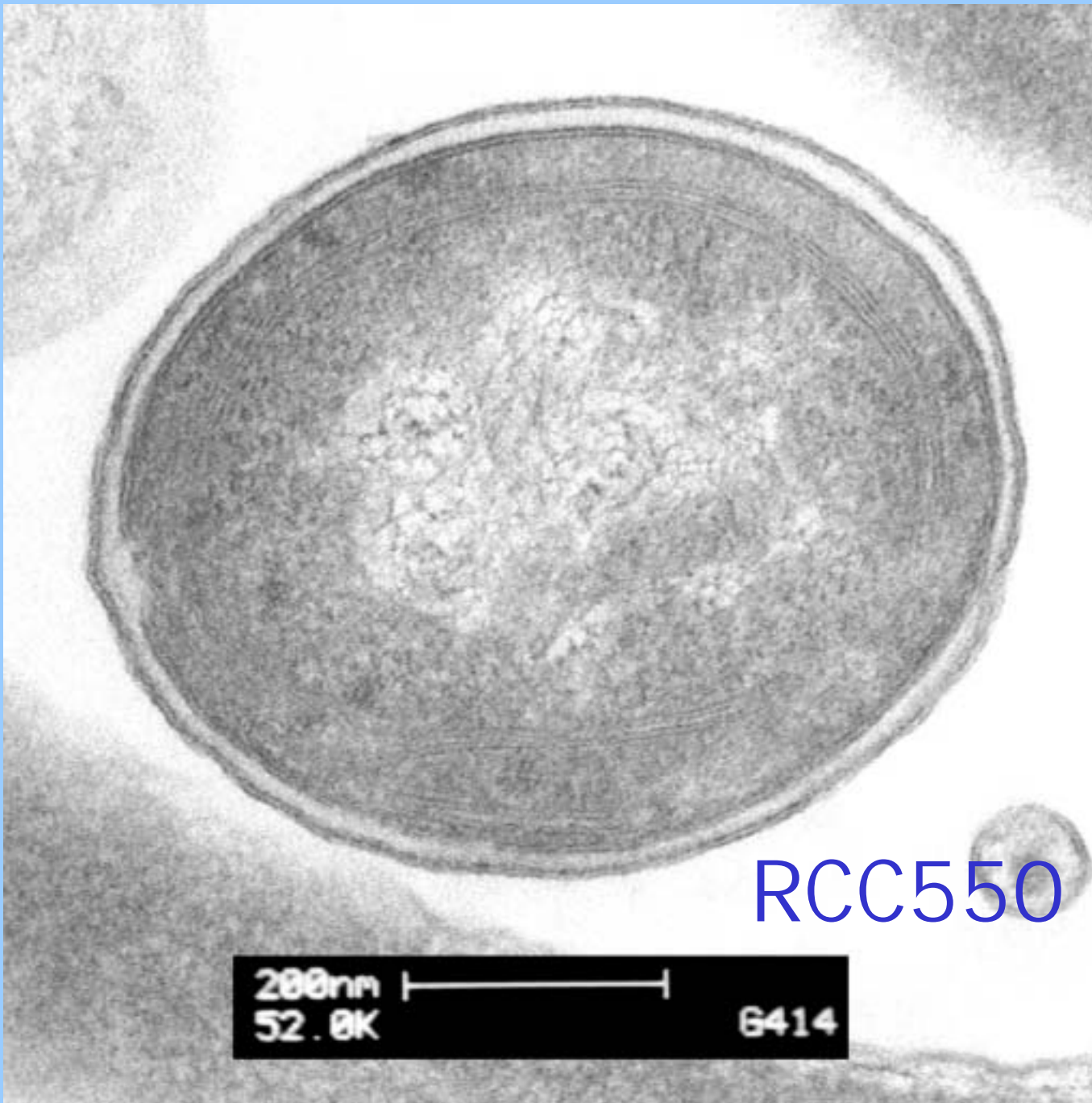


9918 G488

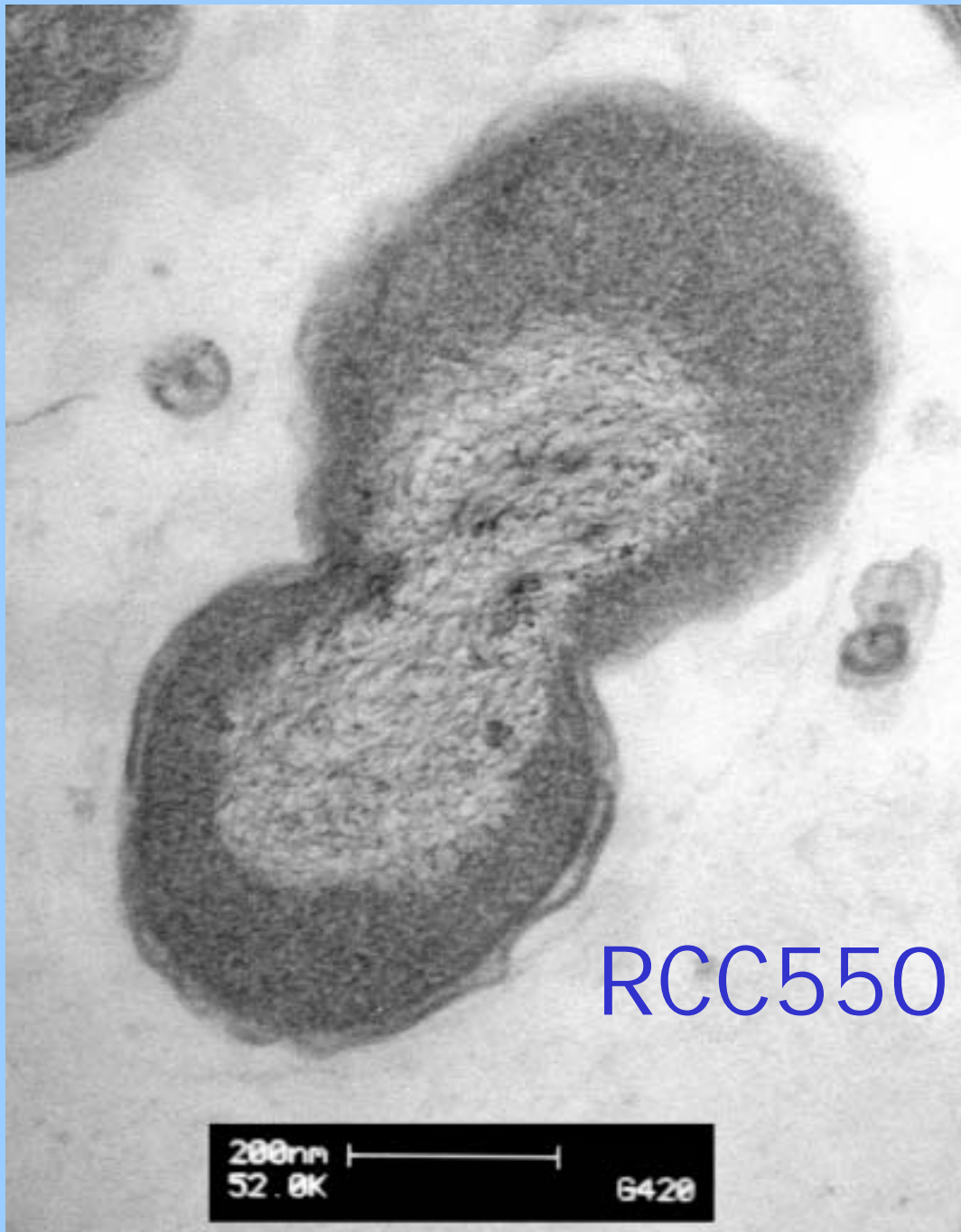


Warwick 9918-cyano-N216x28





RCC550 9911 G414



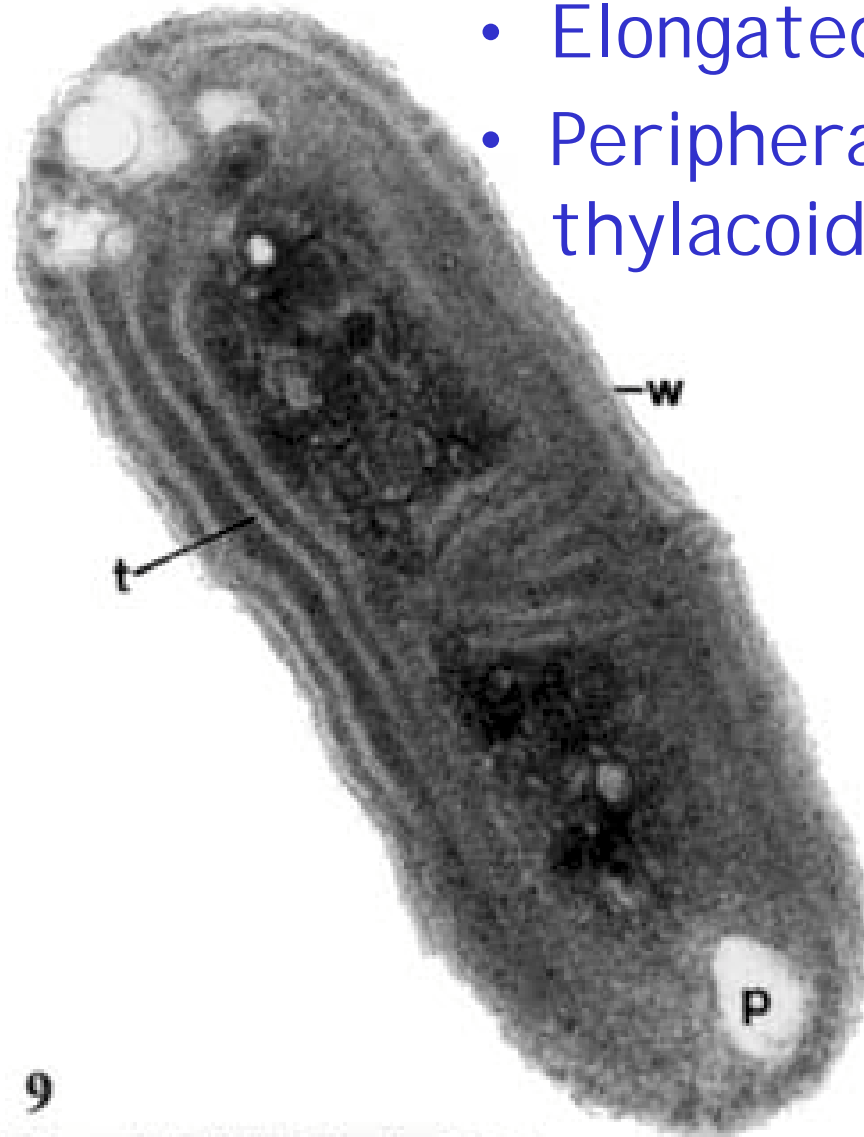
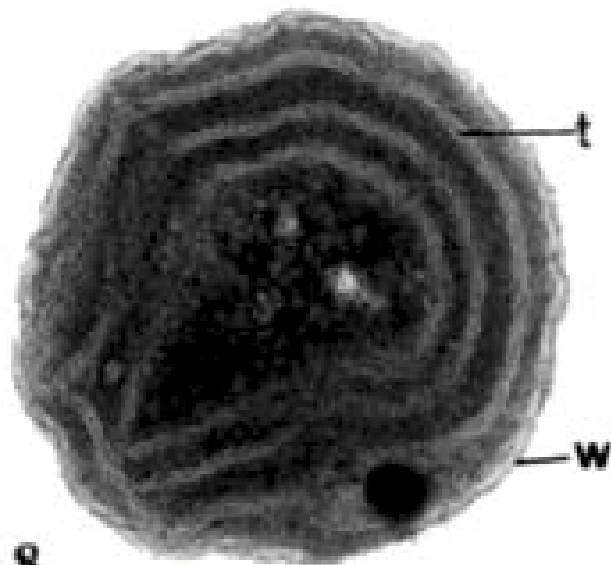
RCC550 9911 G420

Synechococcus

***Synechococcus*
strain PCC 6301**

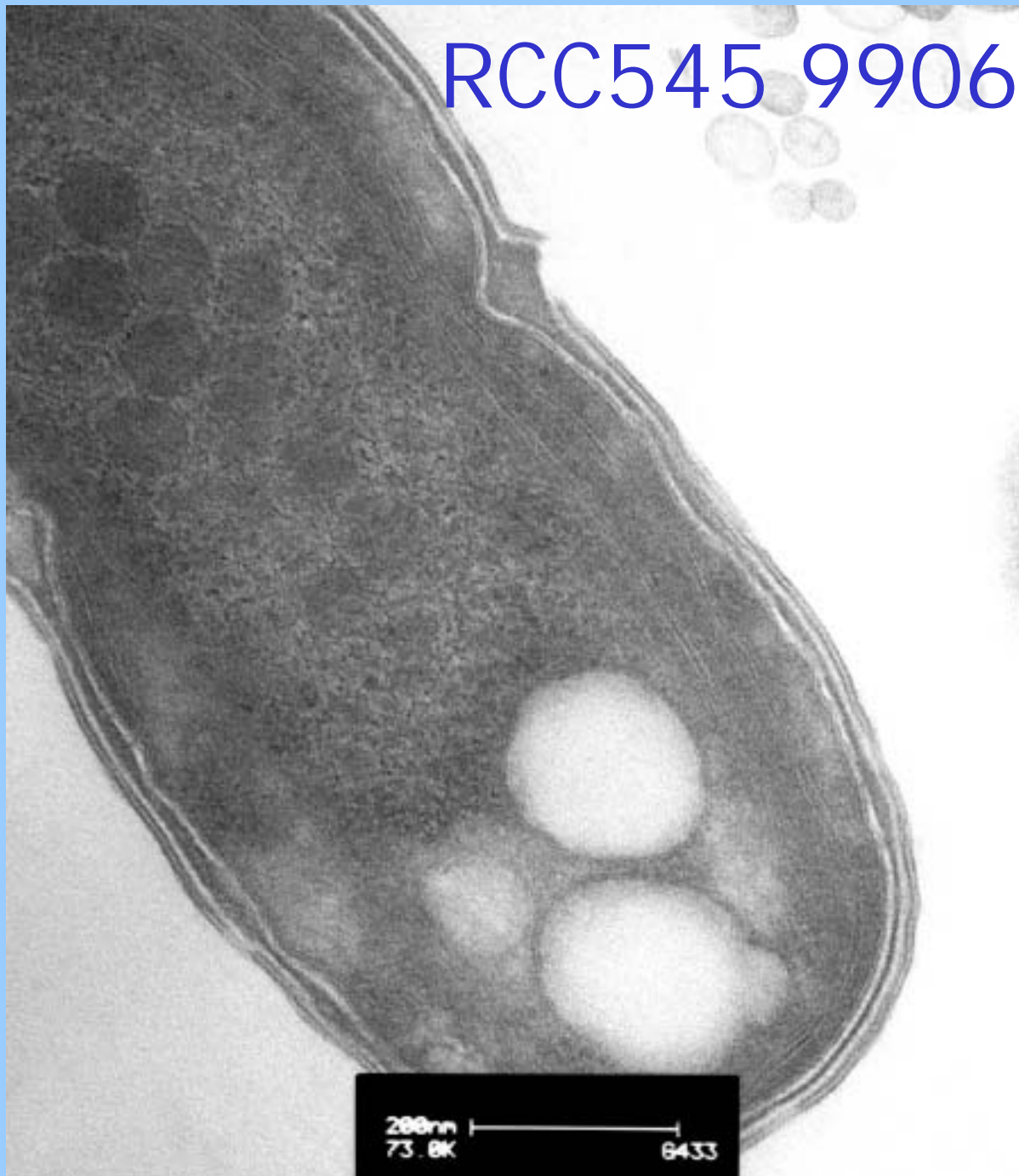
- Elongated cells
- Peripheral thylacoids

8-9 \longleftarrow \longrightarrow 0.5 μ m

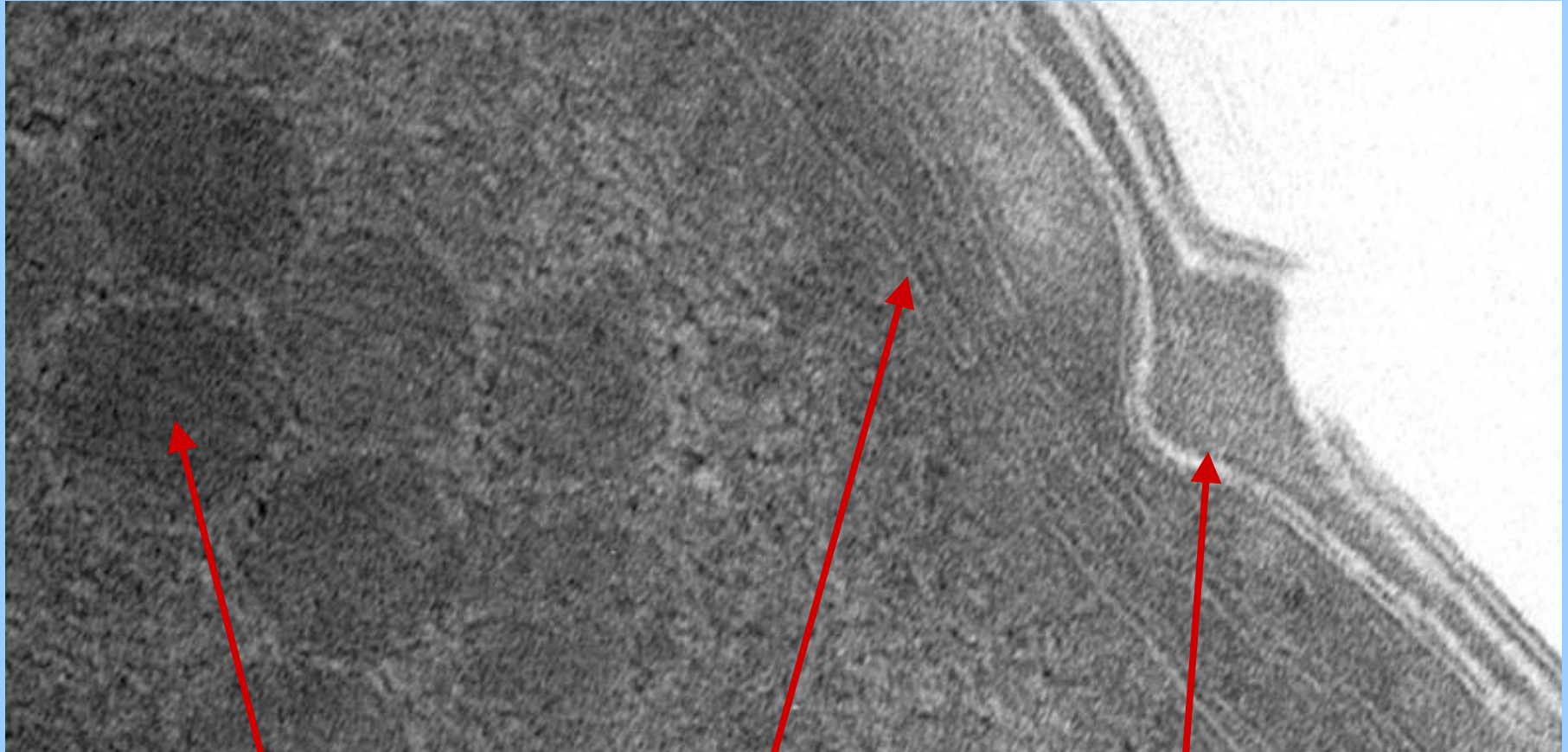


from J. Komárek, J. Kopecký & V. Cepák 1999

RCC545 9906 G433



RCC545 9906 G433

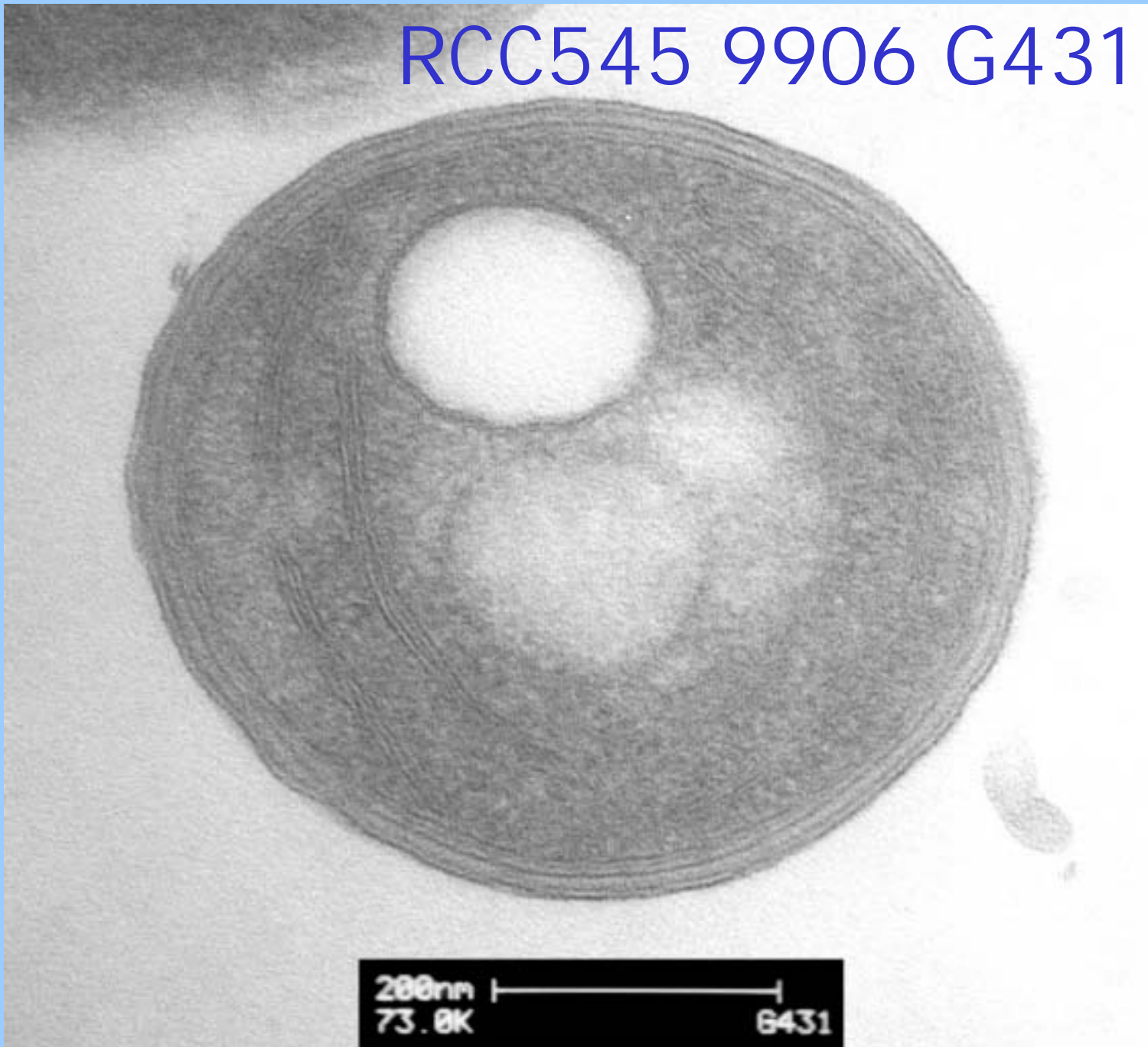


carboxysome

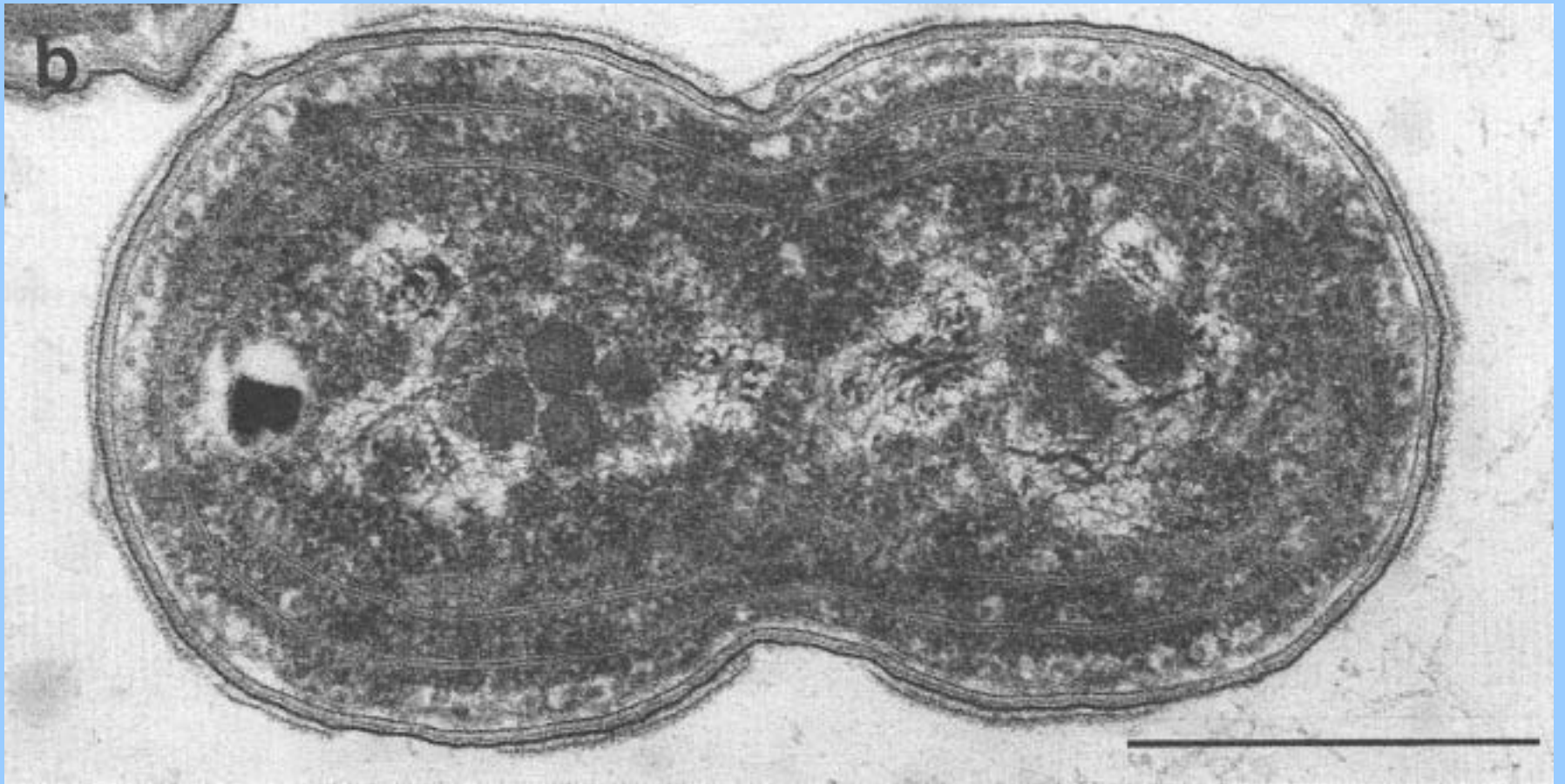
thylakoids

wall

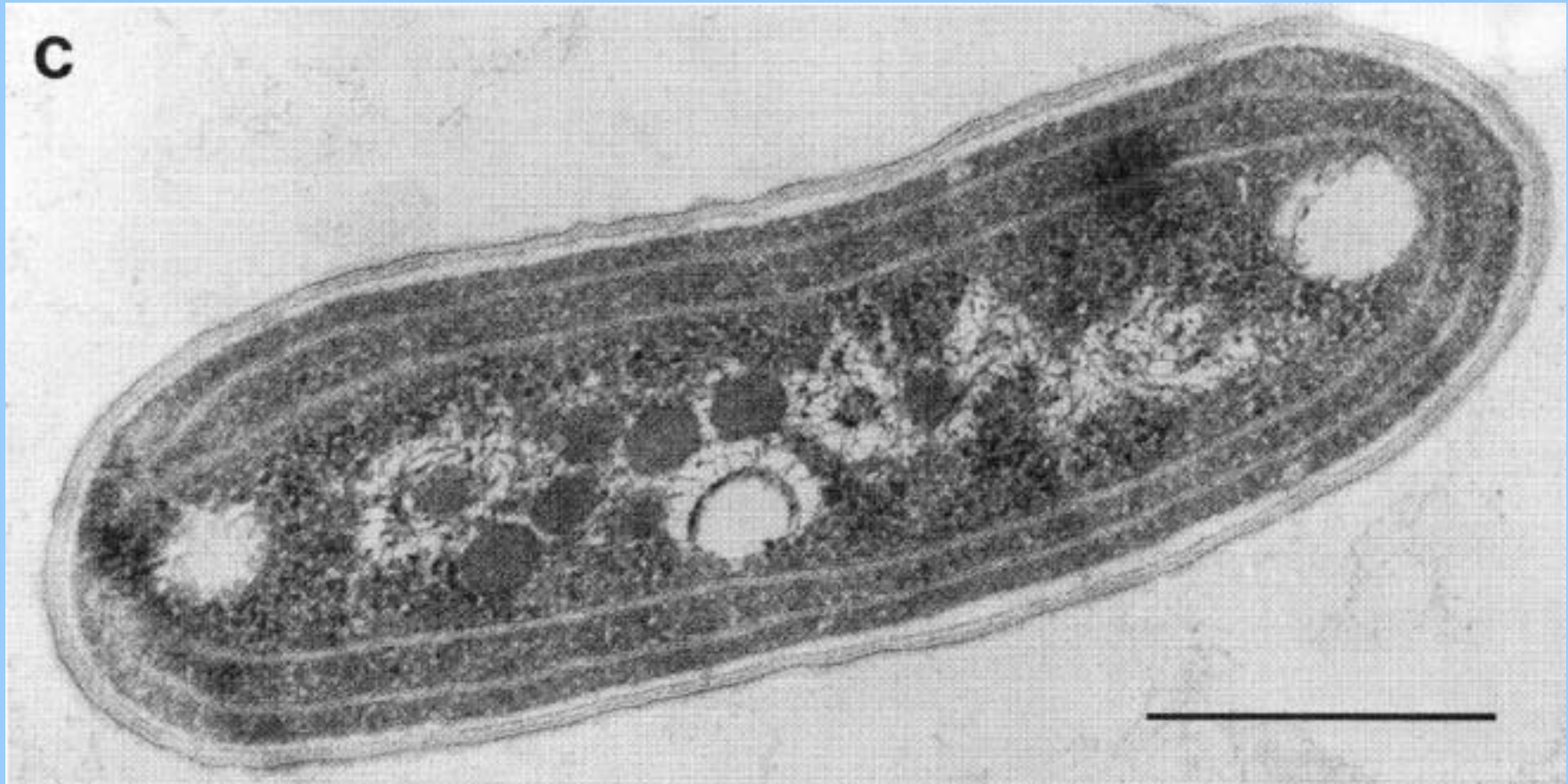
RCC545 9906 G431



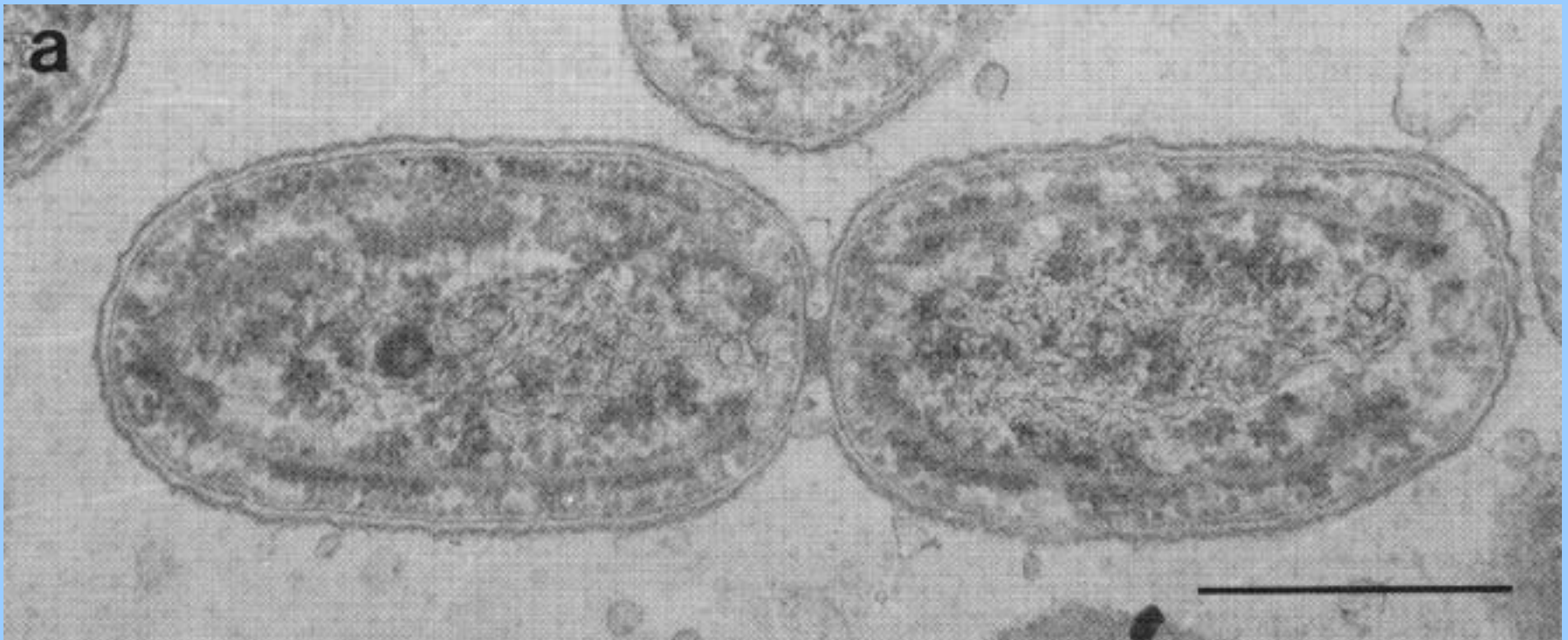
WH 7802 Waterbury *et al.*
1986



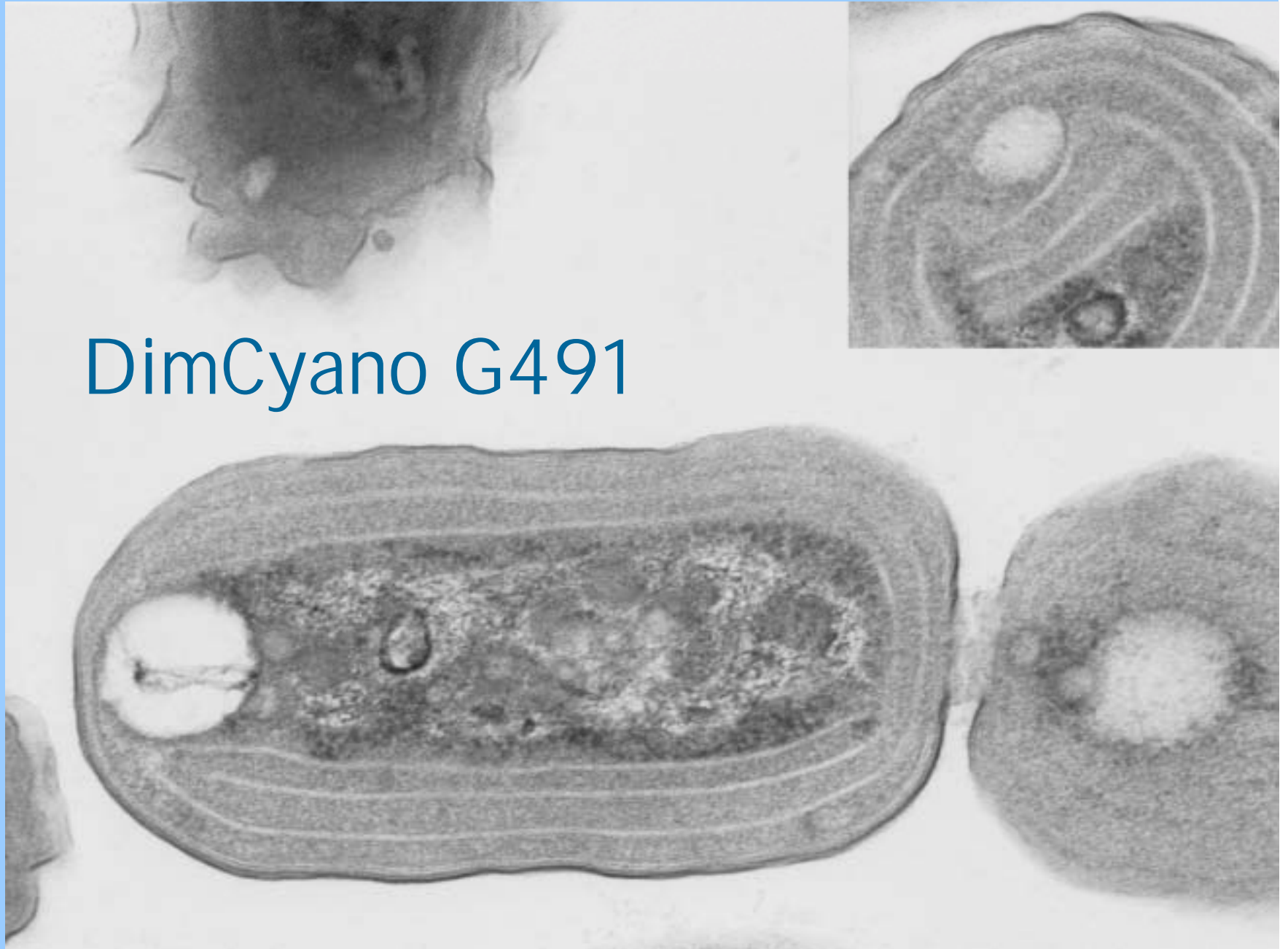
WH 7804 Waterbury *et al.*
1986



WH 8112 Waterbury *et al.*
1986



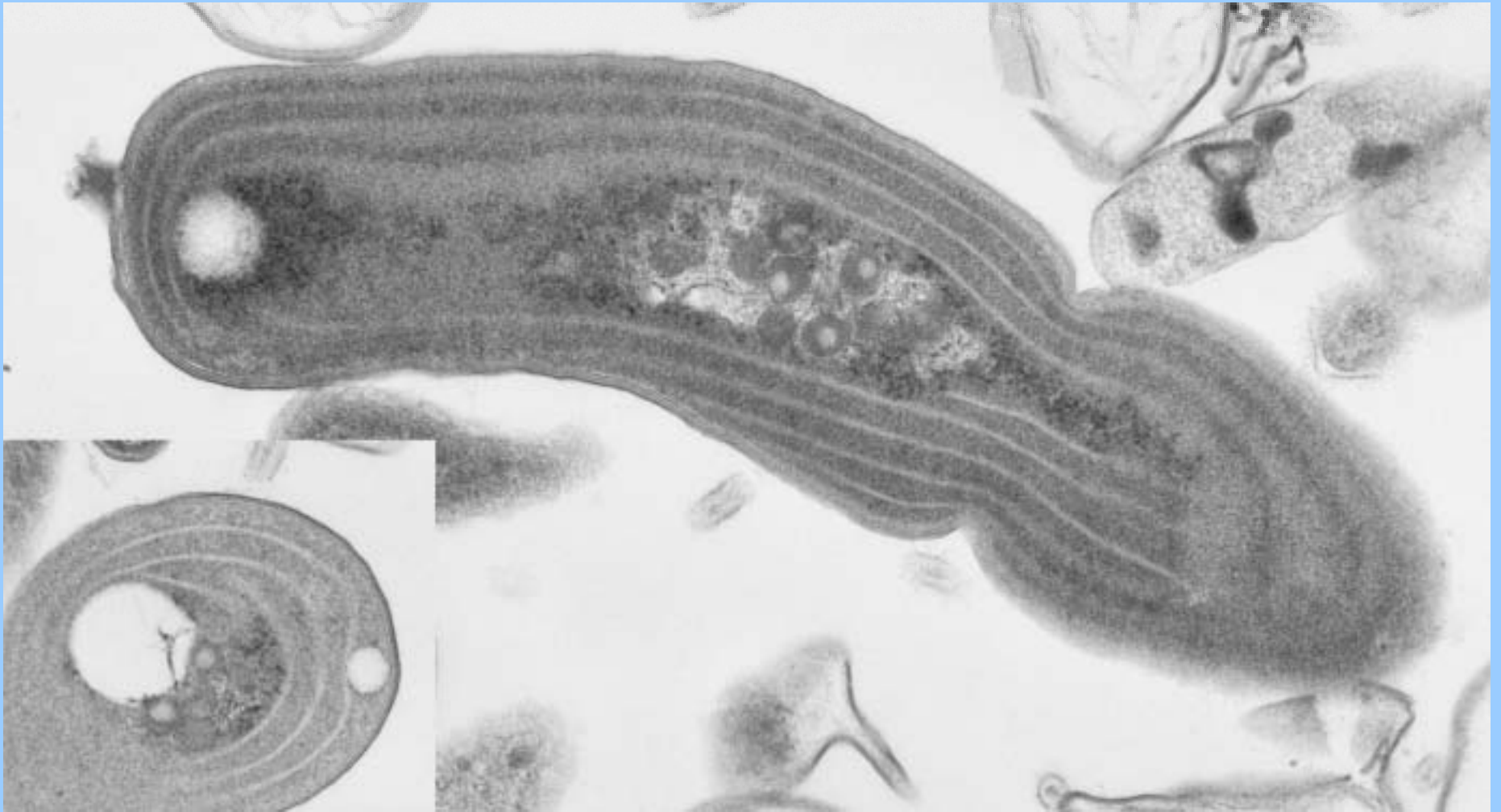
DimCyano G491



DimCyano G490

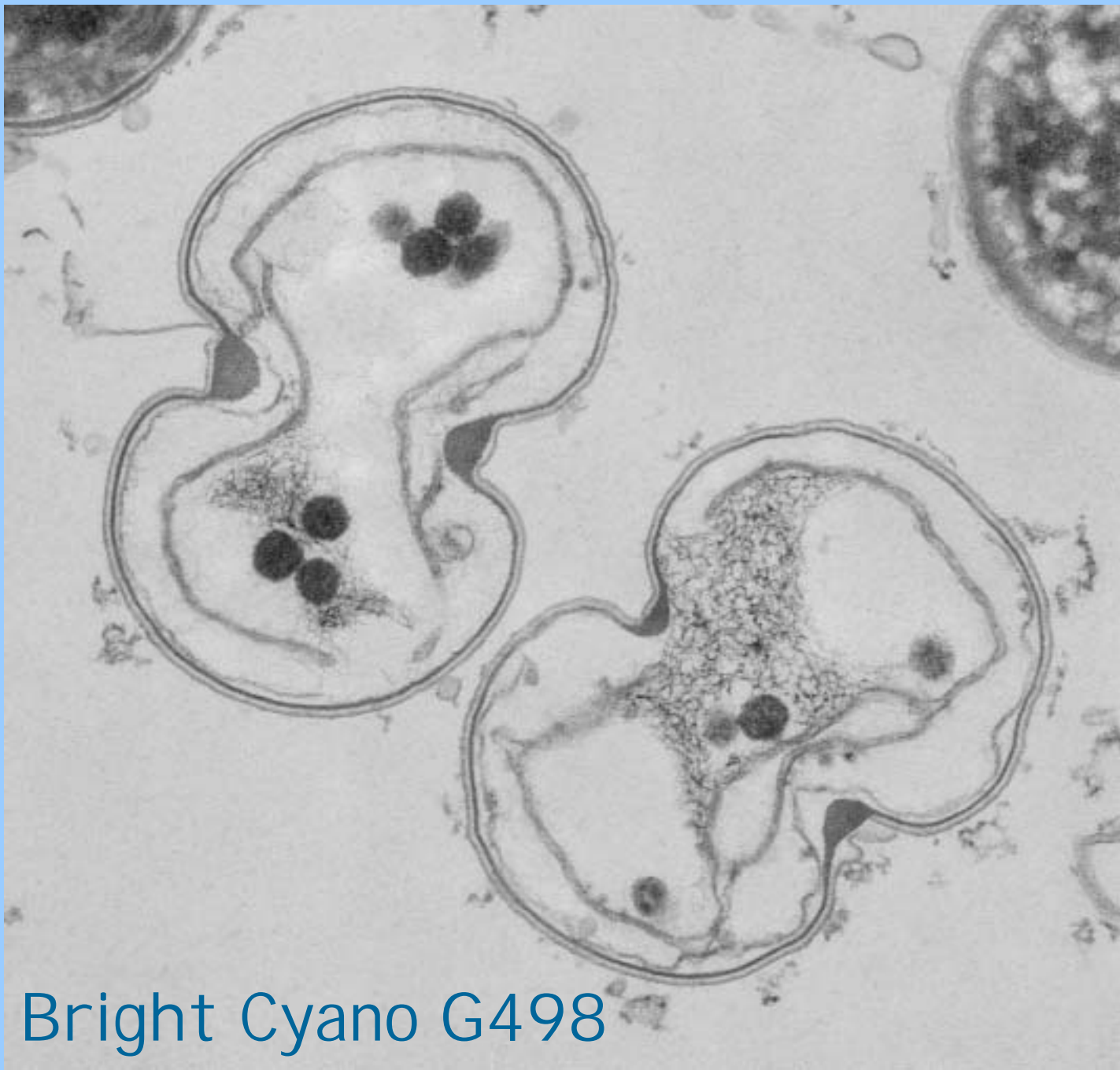


DimCyano G495ed

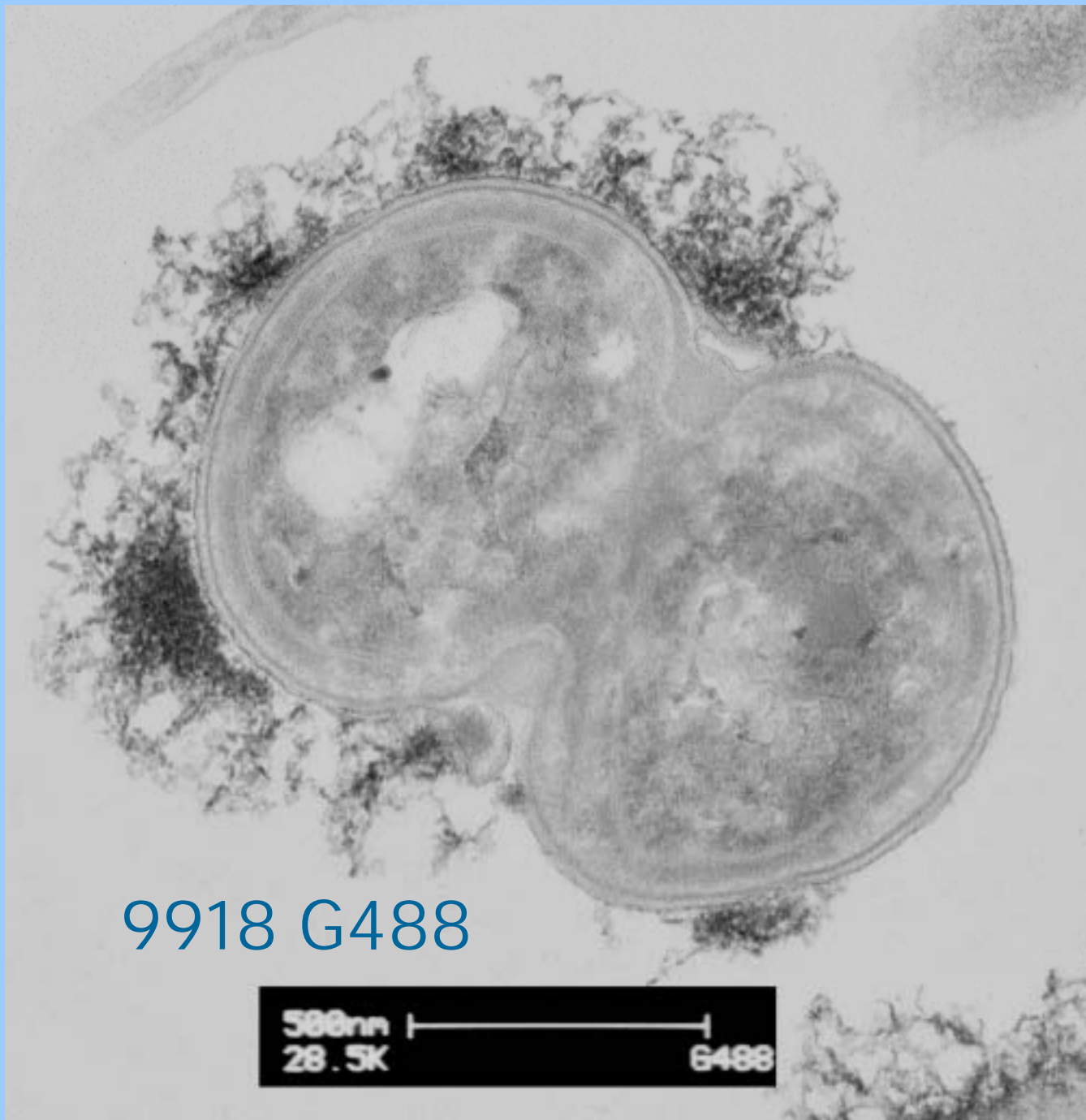


Bright Cyano G497





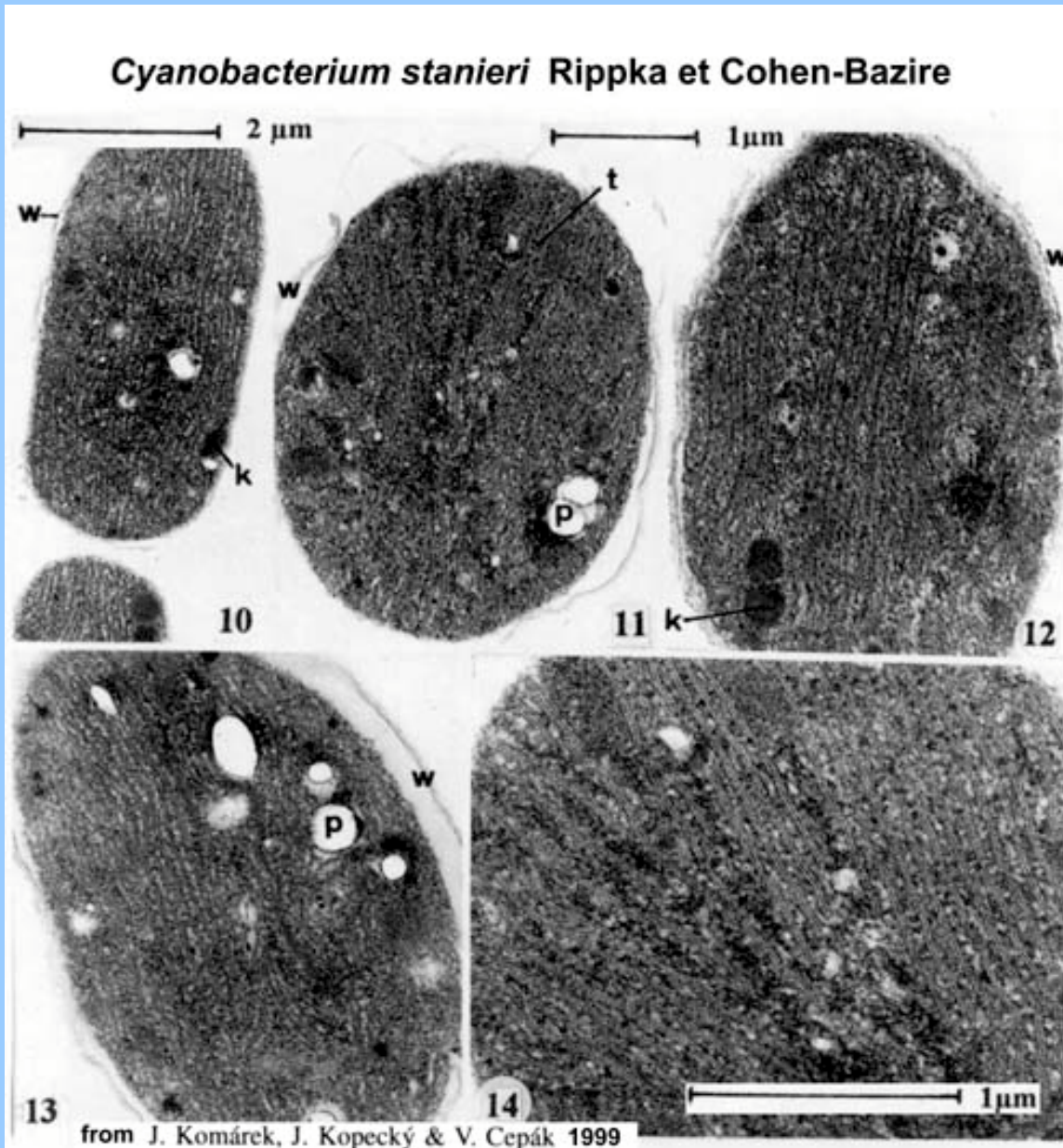
Bright Cyano G498



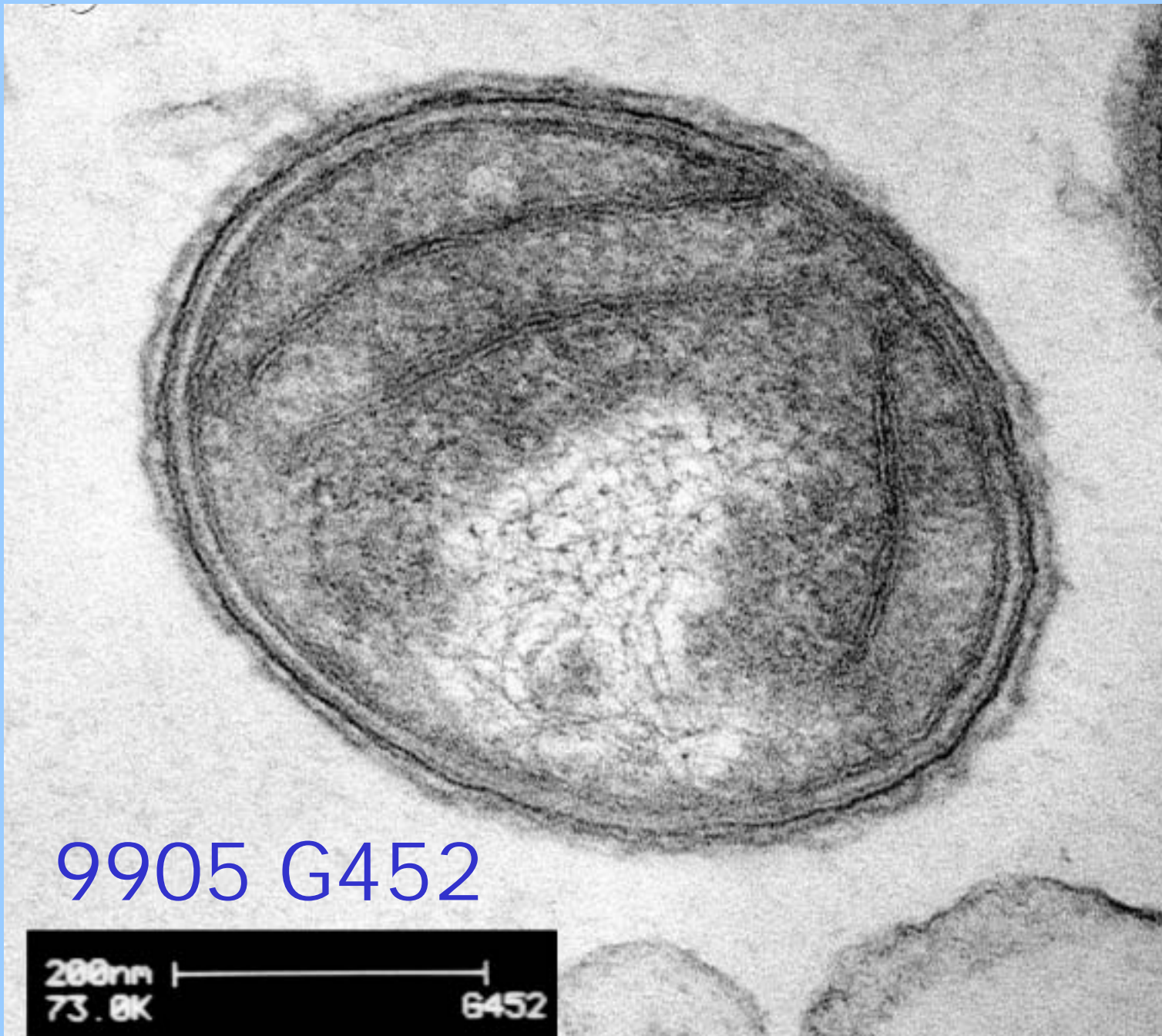
9918 G488

588nm |-----| 28.5K G488

Cyanobacterium



- Oval to cylindrical cells
- Thylakoids irregular along the length axis of the cell

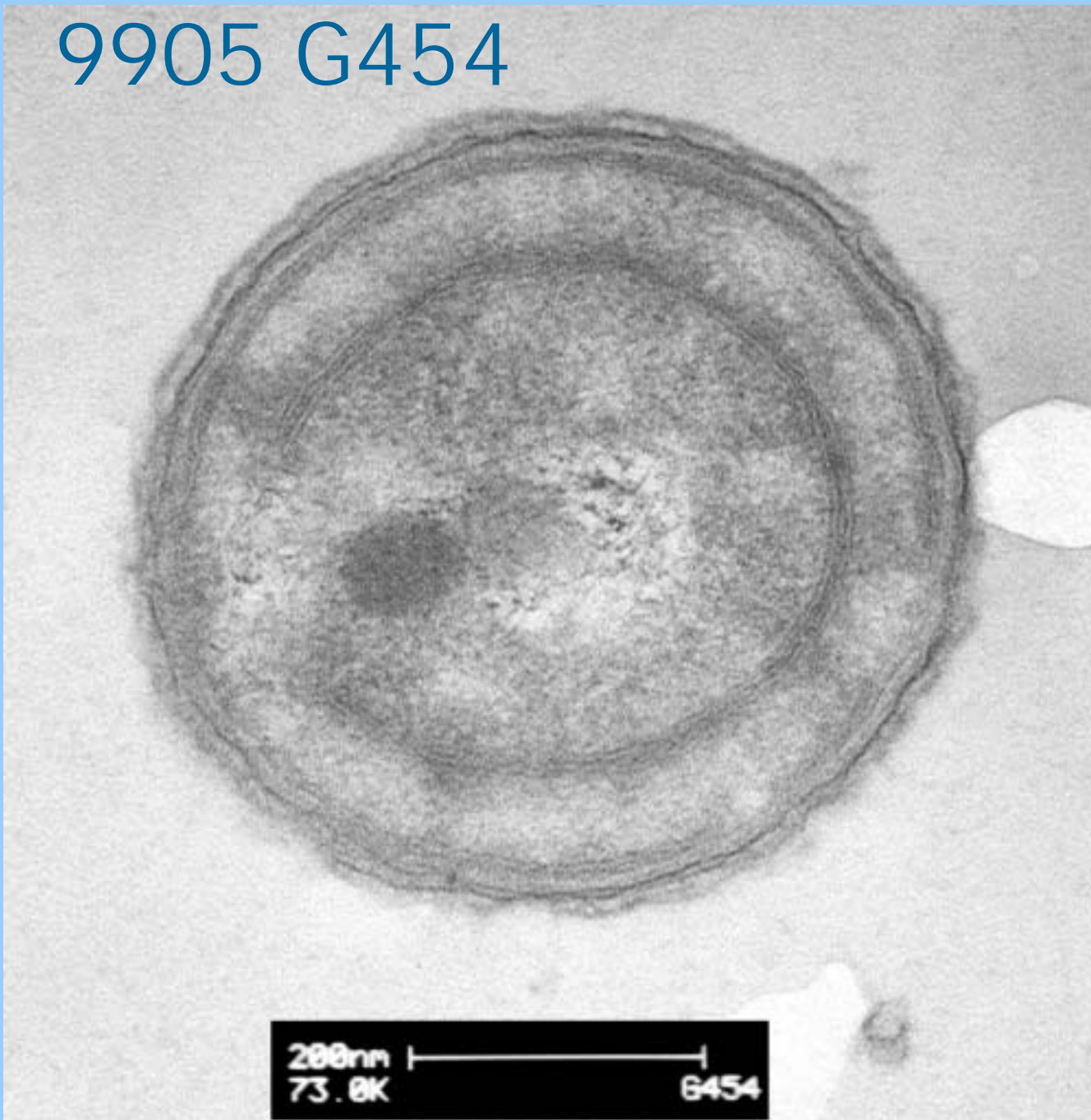


9905 G452

200nm
73.0K

G452

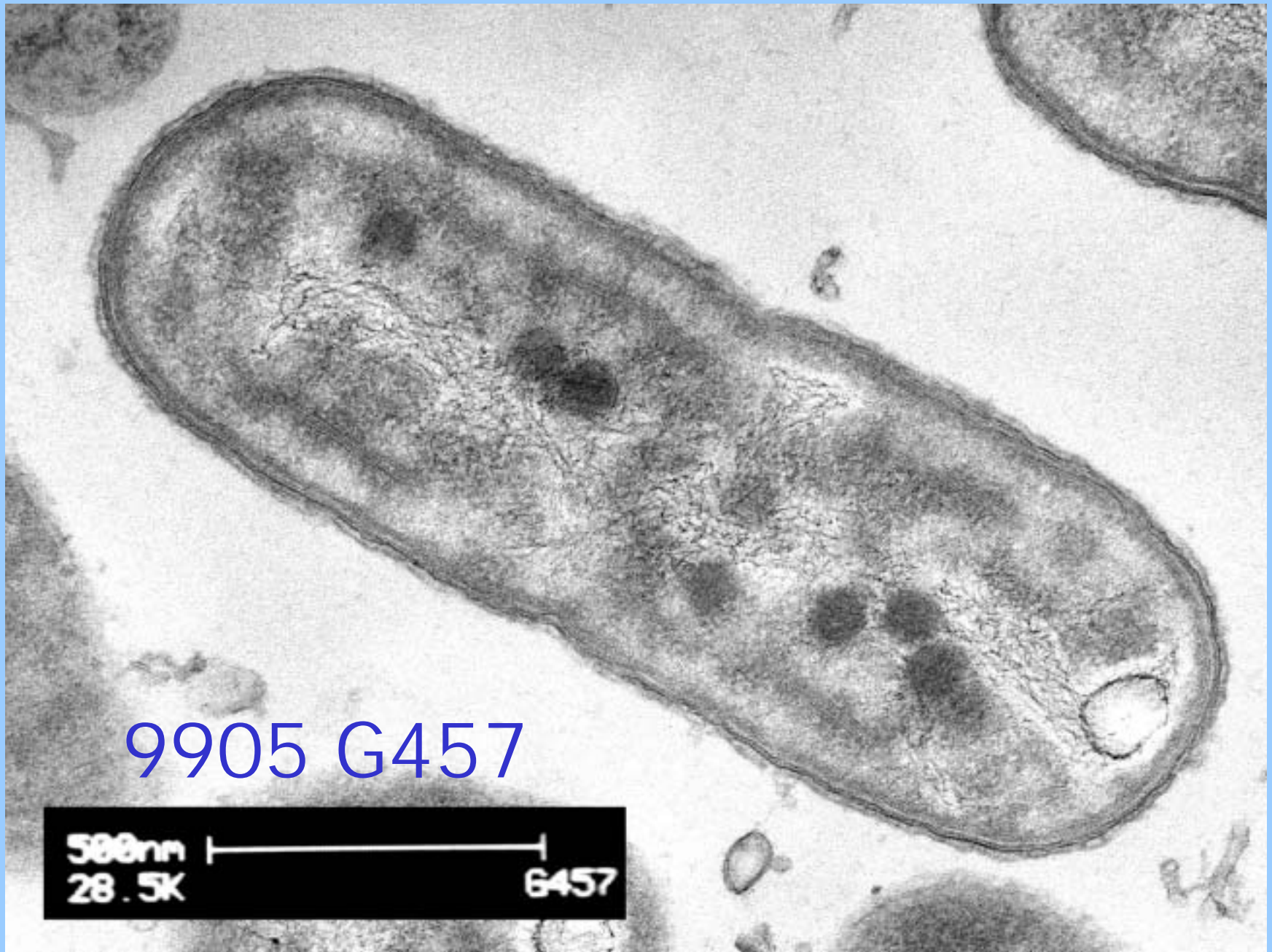
9905 G454



9905 G457

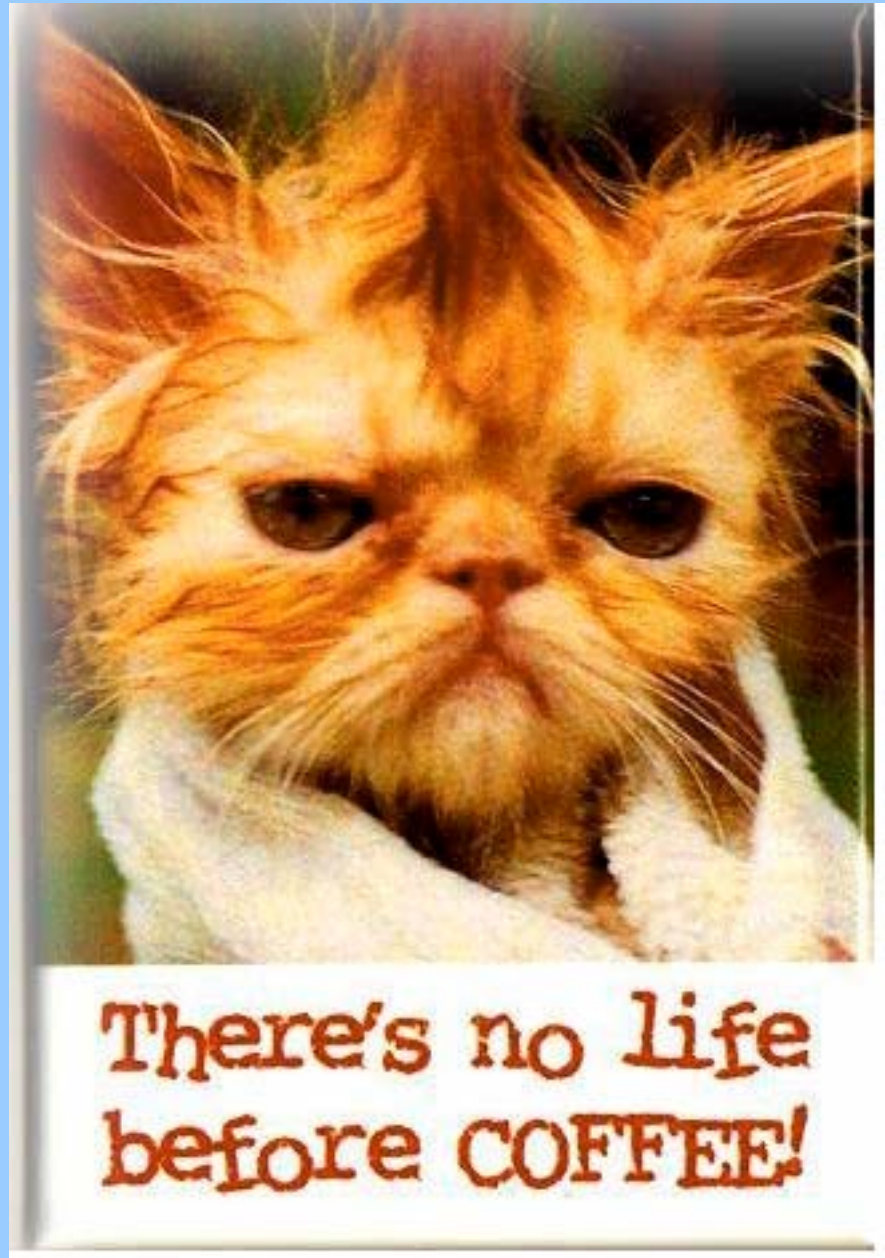
500nm
28.5K

G457





and then,
just a
reminder:



S-layer

