

# PLANT SPORIC LIFE CYCLE



SPOROCTYES 2N

MEIOSIS

# PLANT SPORIC LIFE CYCLE

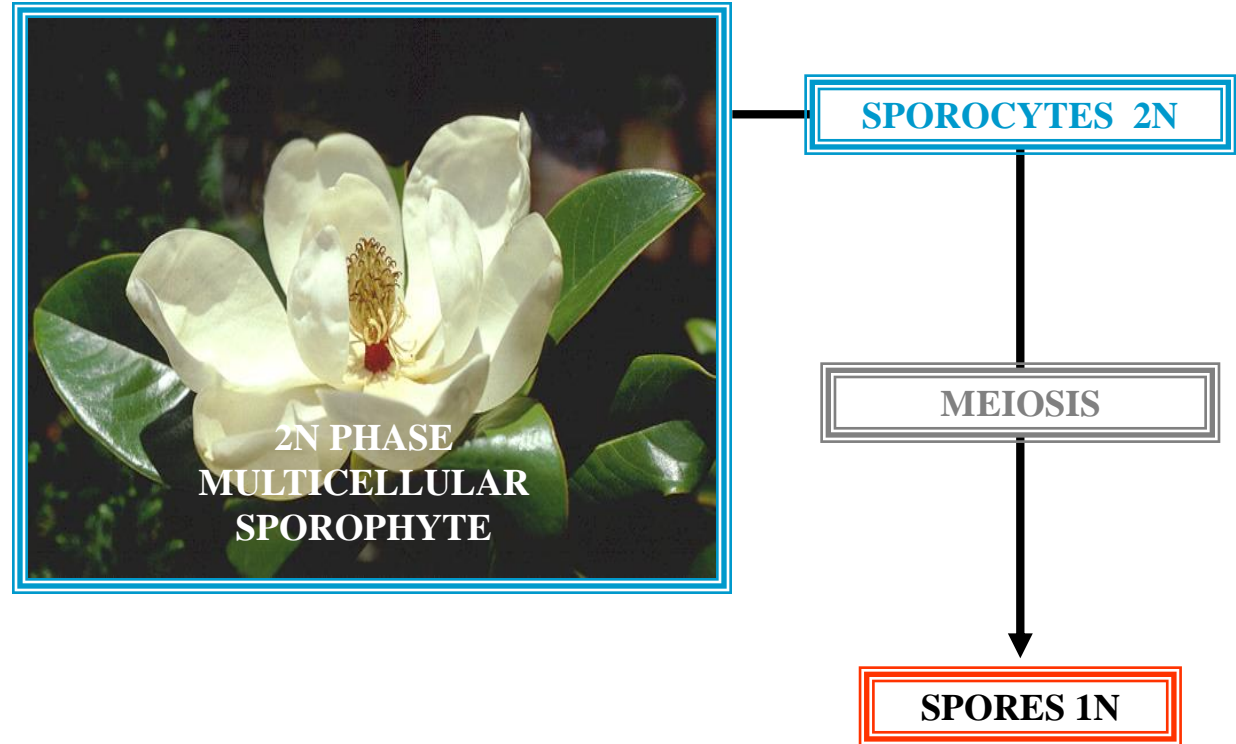


SPOROCTYES 2N

MEIOSIS

SPORES

# PLANT SPORIC LIFE CYCLE



# PLANT SPORIC LIFE CYCLE

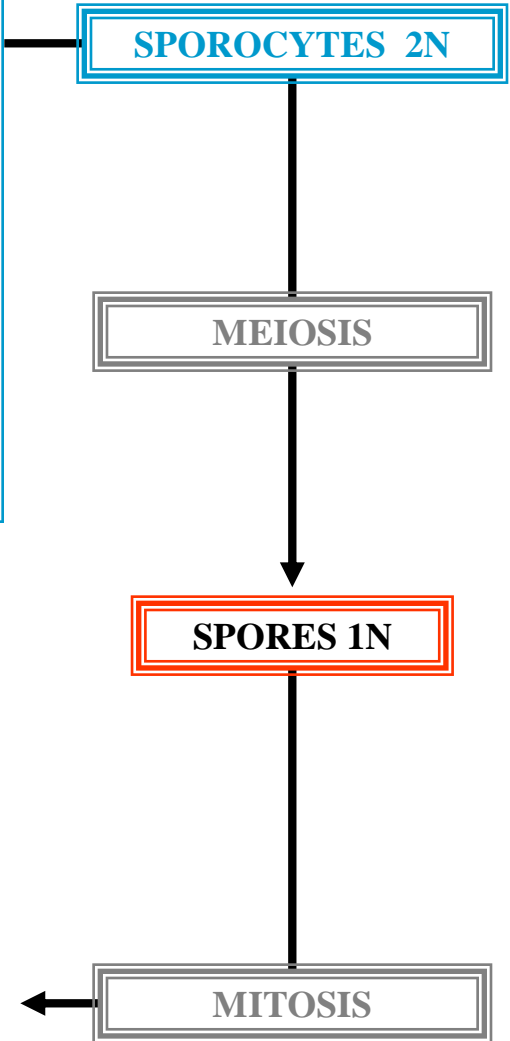


SPOROCTYES 2N

MEIOSIS

SPORES 1N

MITOSIS





# PLANT SPORIC LIFE CYCLE



SPOROCTYES 2N

MEIOSIS

SPORES 1N

1N PHASE

MITOSIS



# PLANT SPORIC LIFE CYCLE



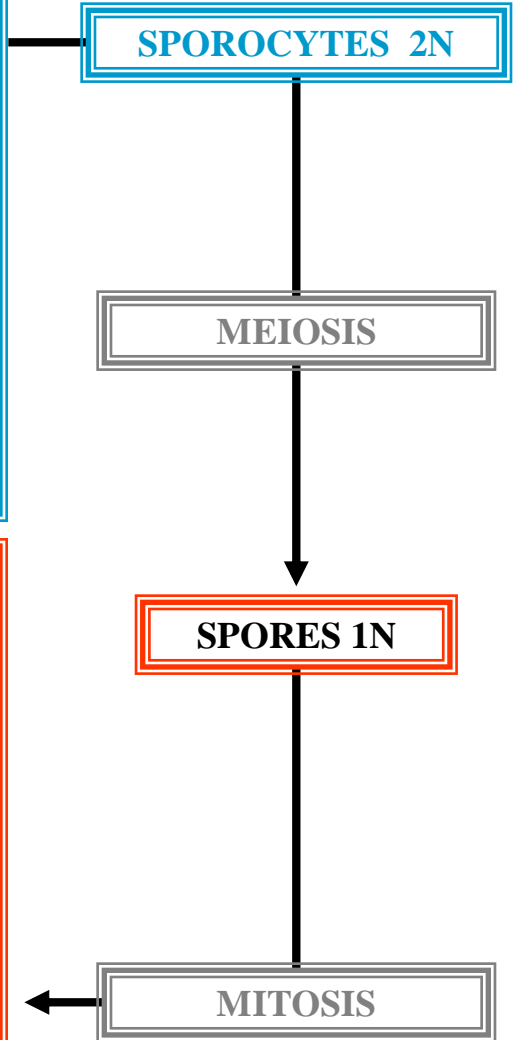
**SPOROCTYES 2N**

**MEIOSIS**

**SPORES 1N**



**MITOSIS**



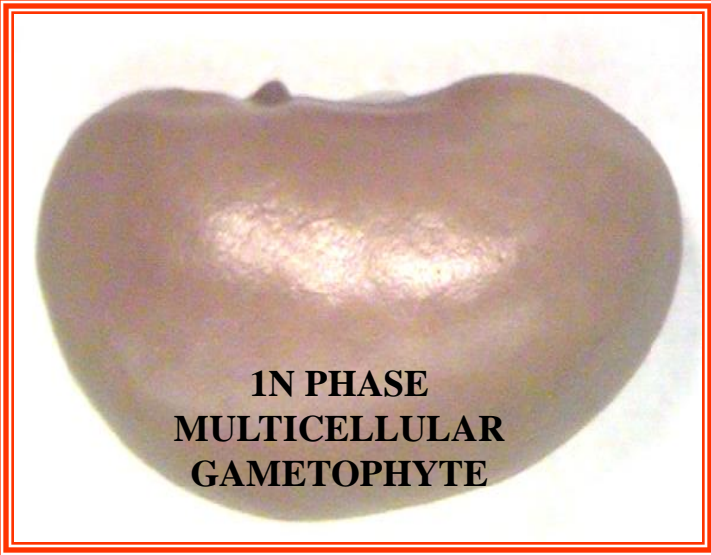
# PLANT SPORIC LIFE CYCLE



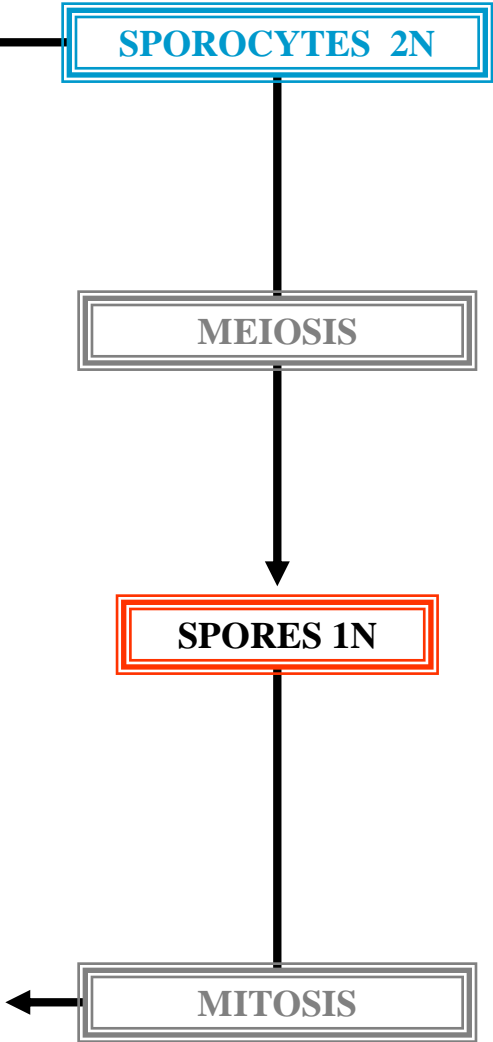
**SPOROCTYES 2N**

**MEIOSIS**

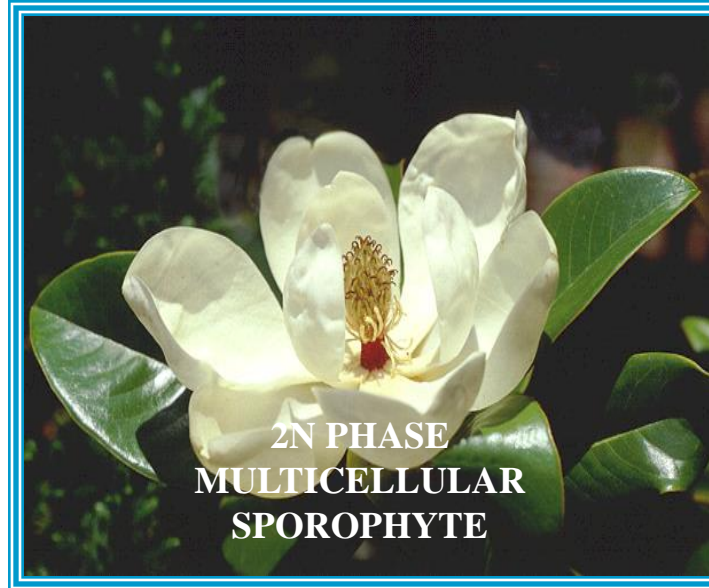
**SPORES 1N**



**MITOSIS**



# PLANT SPORIC LIFE CYCLE



SPOROCTYES 2N

MEIOSIS

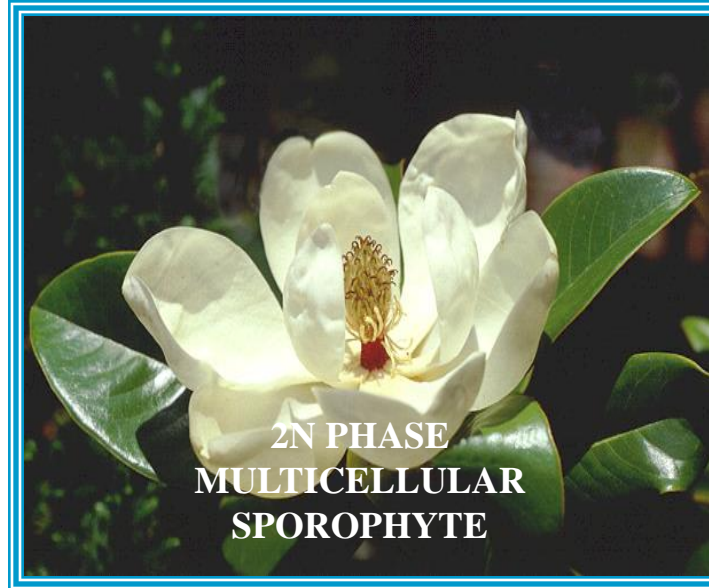
SPORES 1N



MITOSIS

GAMETANGIA

# PLANT SPORIC LIFE CYCLE



SPOROCTYES 2N

MEIOSIS

SPORES 1N



MITOSIS

GAMETOCYTES





# PLANT SPORIC LIFE CYCLE



2N PHASE  
MULTICELLULAR  
SPOROPHYTE

SPOROCTYES 2N

MEIOSIS

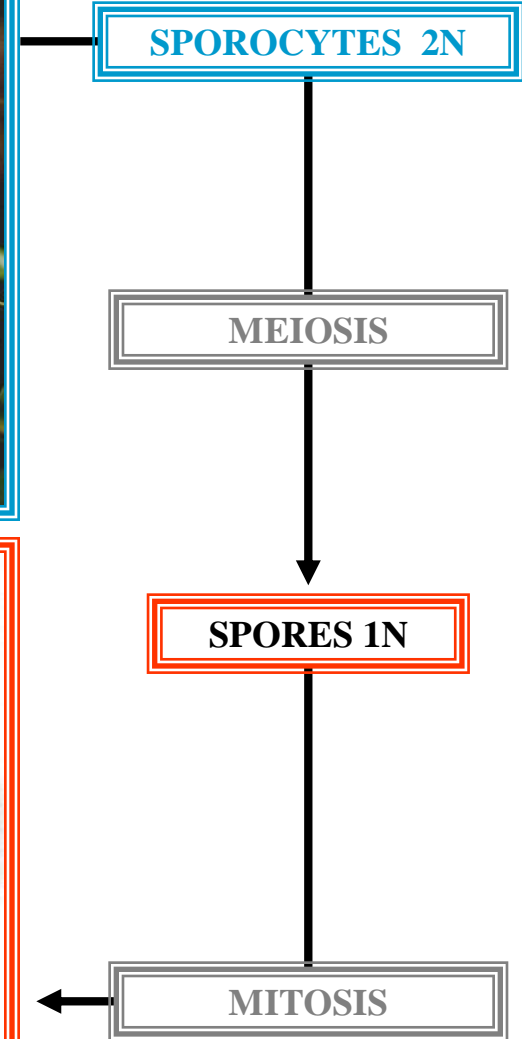
SPORES 1N

MITOSIS



1N PHASE  
MULTICELLULAR  
GAMETOPHYTE

GAMETOCYTES 1N



# PLANT SPORIC LIFE CYCLE



SPOROCTYES 2N

MEIOSIS

SPORES 1N

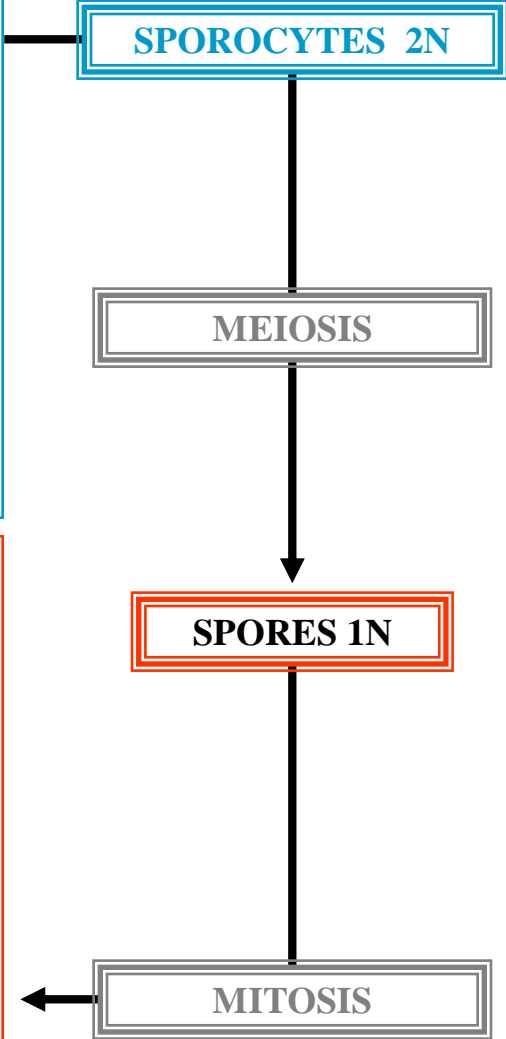
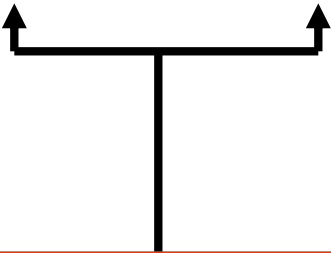
MITOSIS



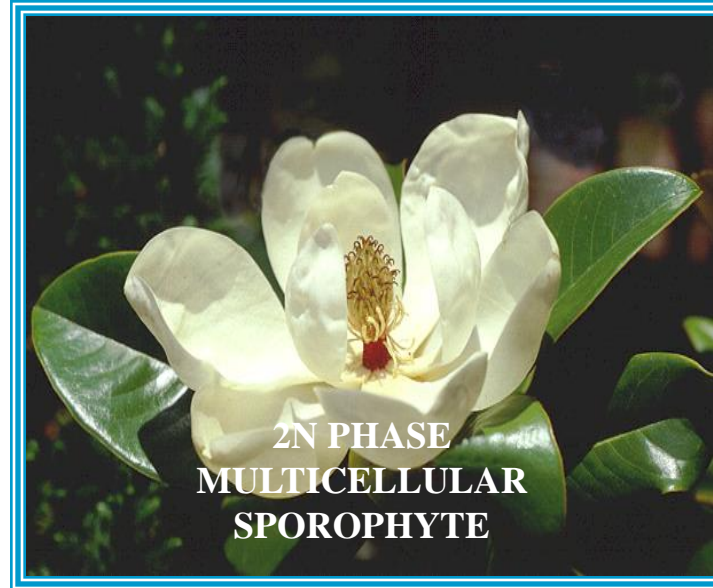
GAMETE  
EGG

GAMETE  
SPERM

GAMETOCYTES 1N



# PLANT SPORIC LIFE CYCLE



SPOROCTYES 2N

MEIOSIS

SPORES 1N

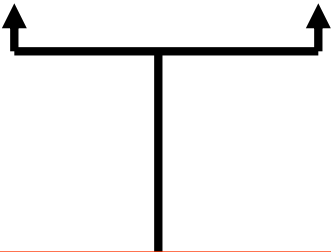
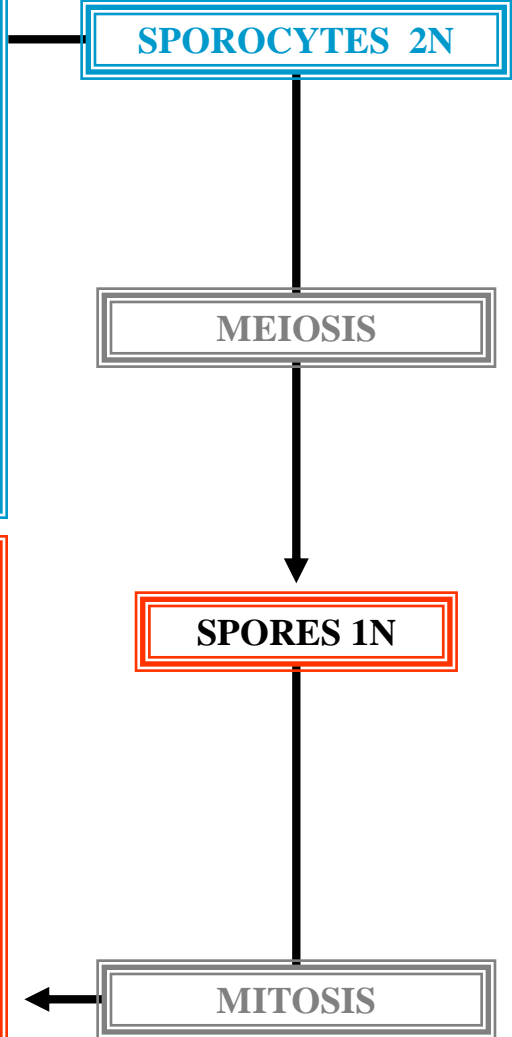
MITOSIS



GAMETE  
SPERM  
1N

GAMETE  
EGG  
1N

GAMETOCYTES 1N





# PLANT SPORIC LIFE CYCLE



SPOROCTYES 2N

MEIOSIS

SPORES 1N

MITOSIS

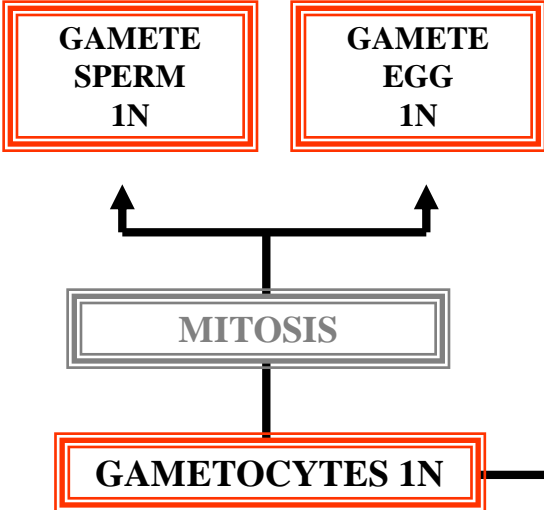
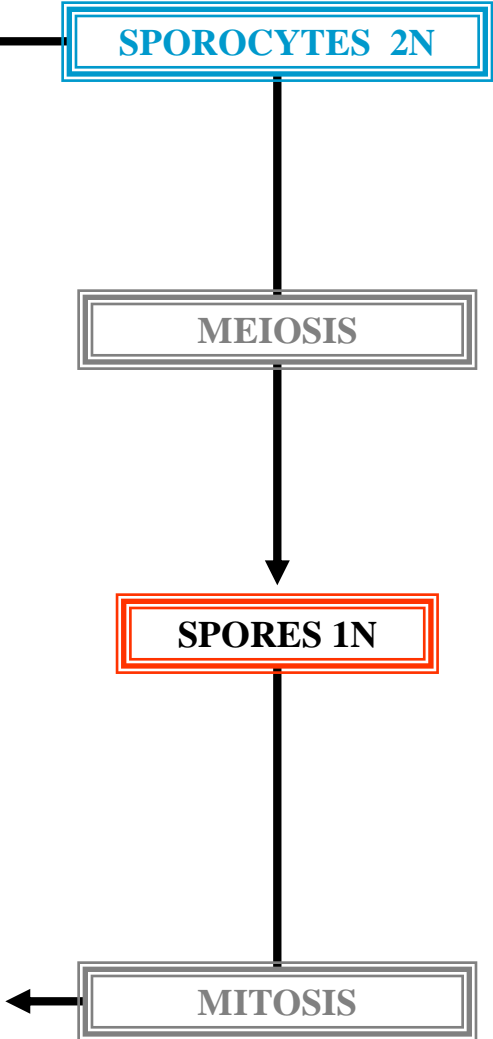


GAMETE  
SPERM  
1N

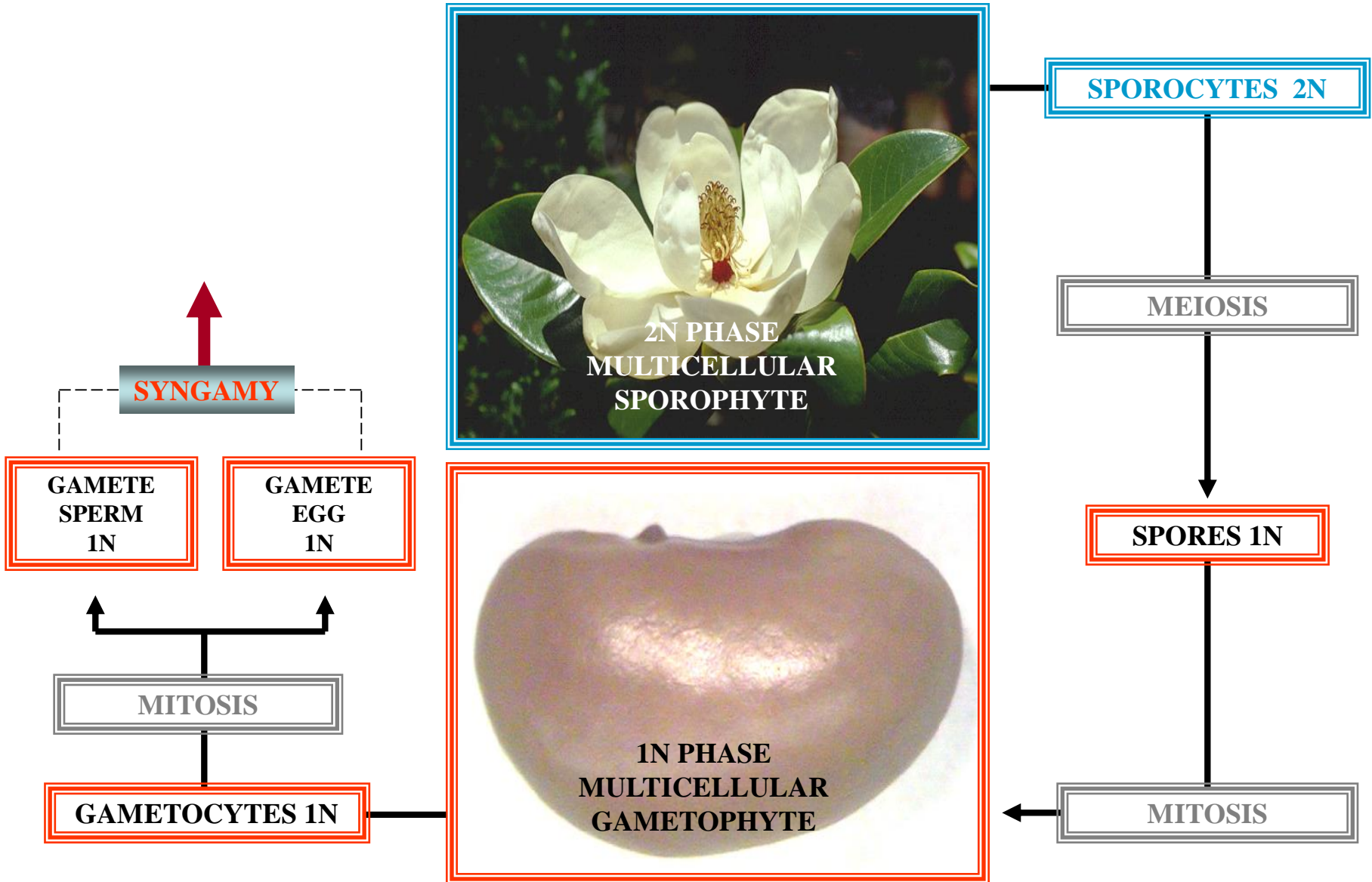
GAMETE  
EGG  
1N

MITOSIS

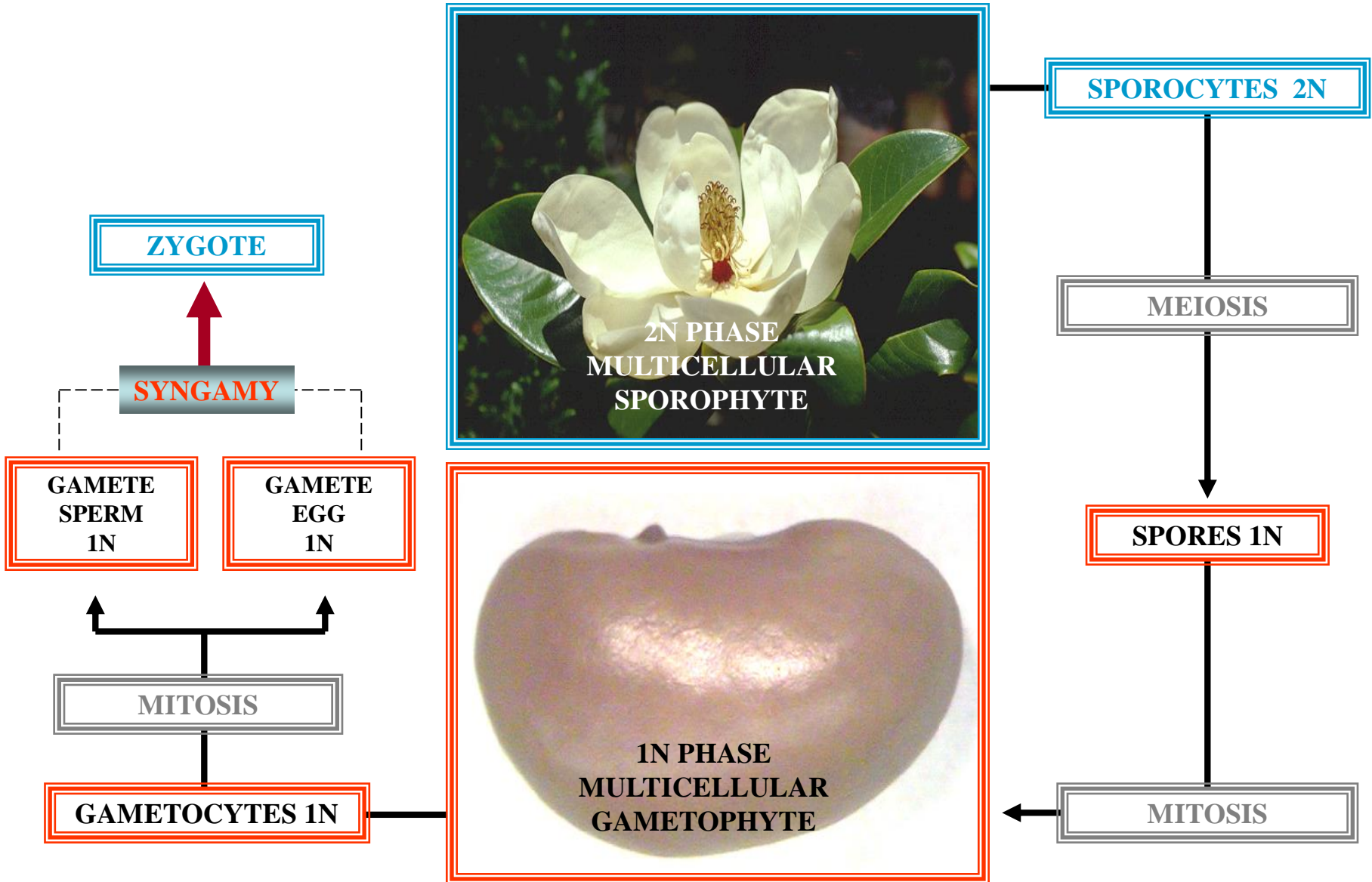
GAMETOCYTES 1N



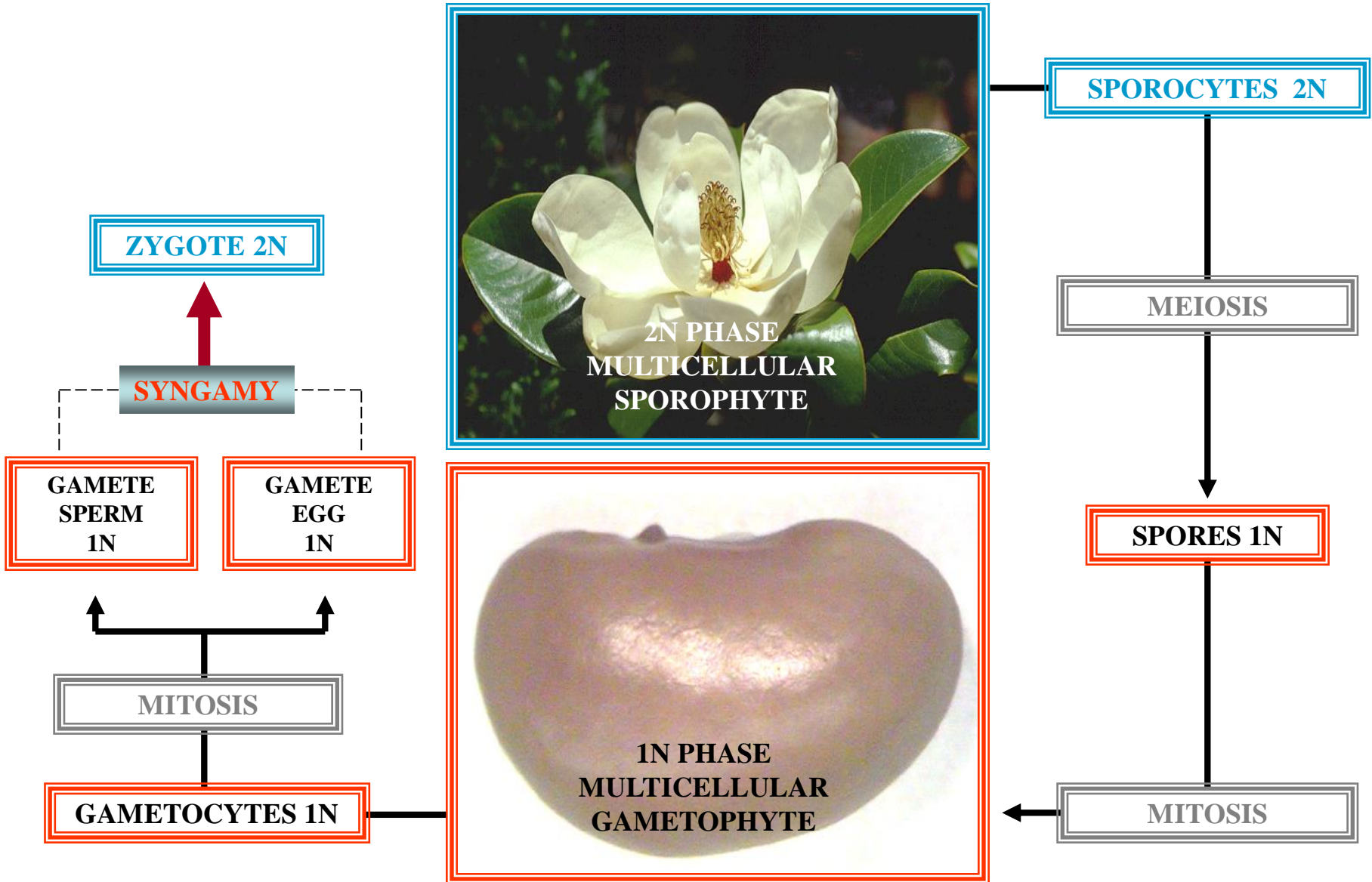
# PLANT SPORIC LIFE CYCLE



# PLANT SPORIC LIFE CYCLE



# PLANT SPORIC LIFE CYCLE



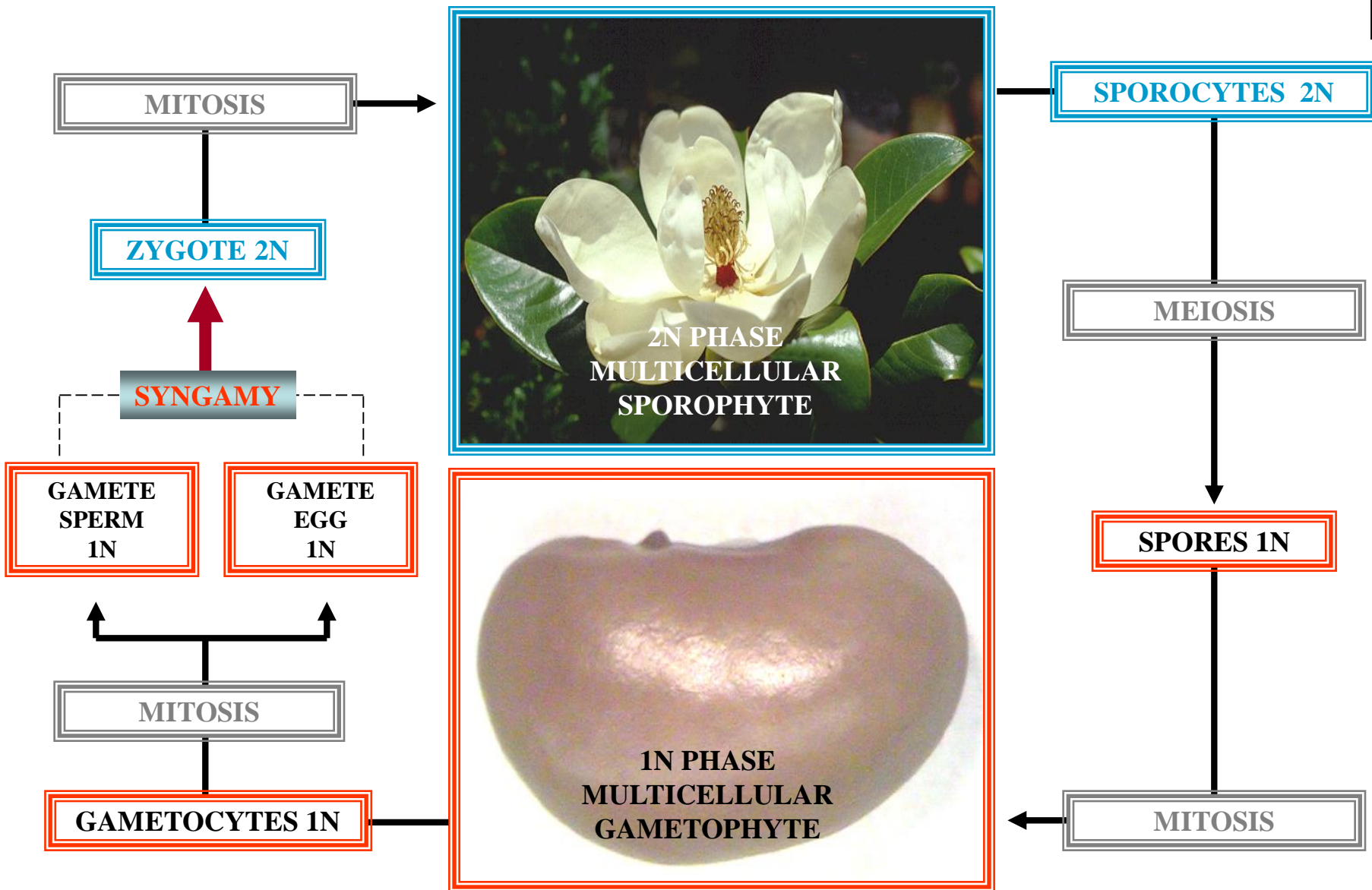


# PLANT SPORIC LIFE CYCLE

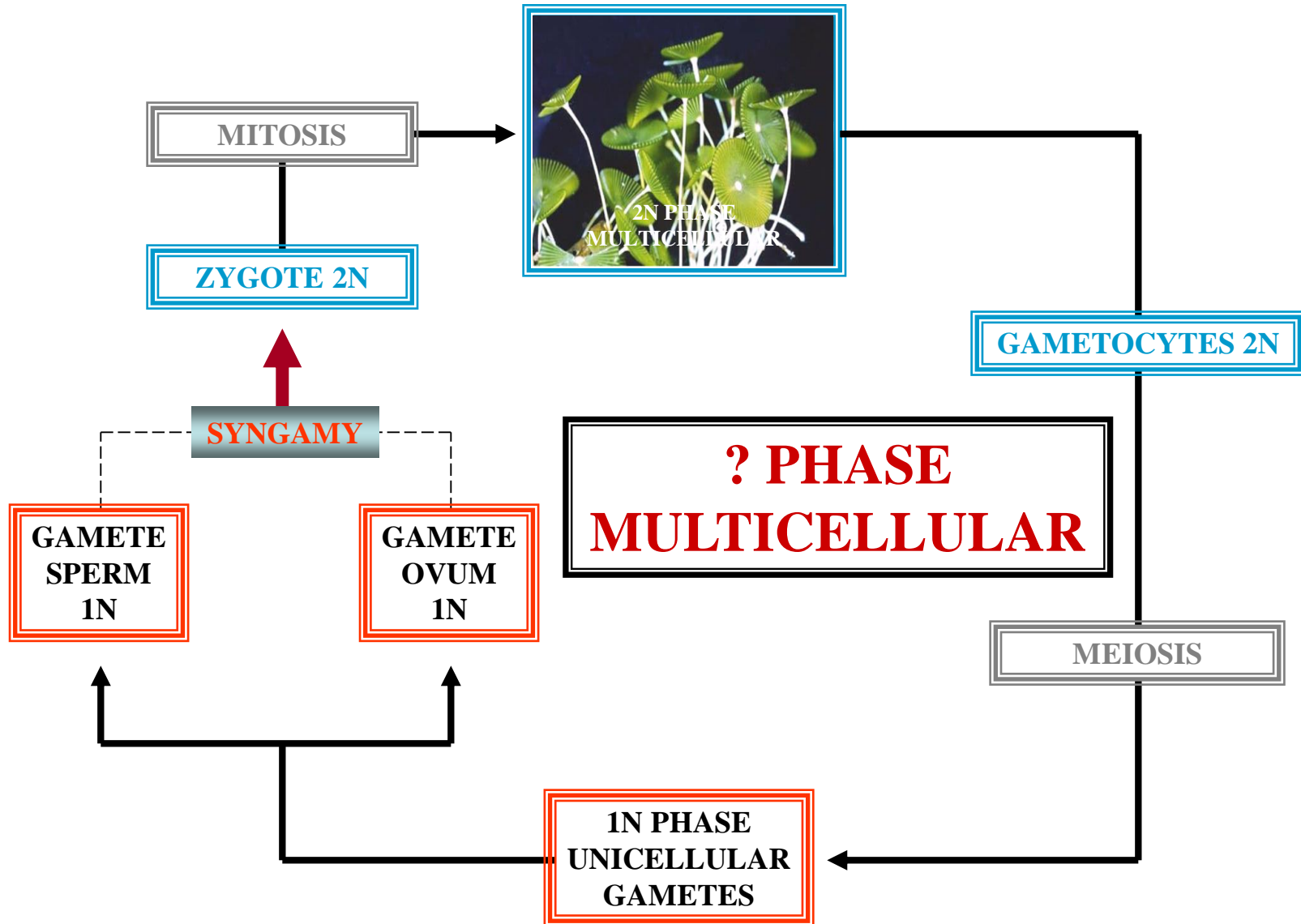
G



?



# GAMETIC LIFE CYCLE

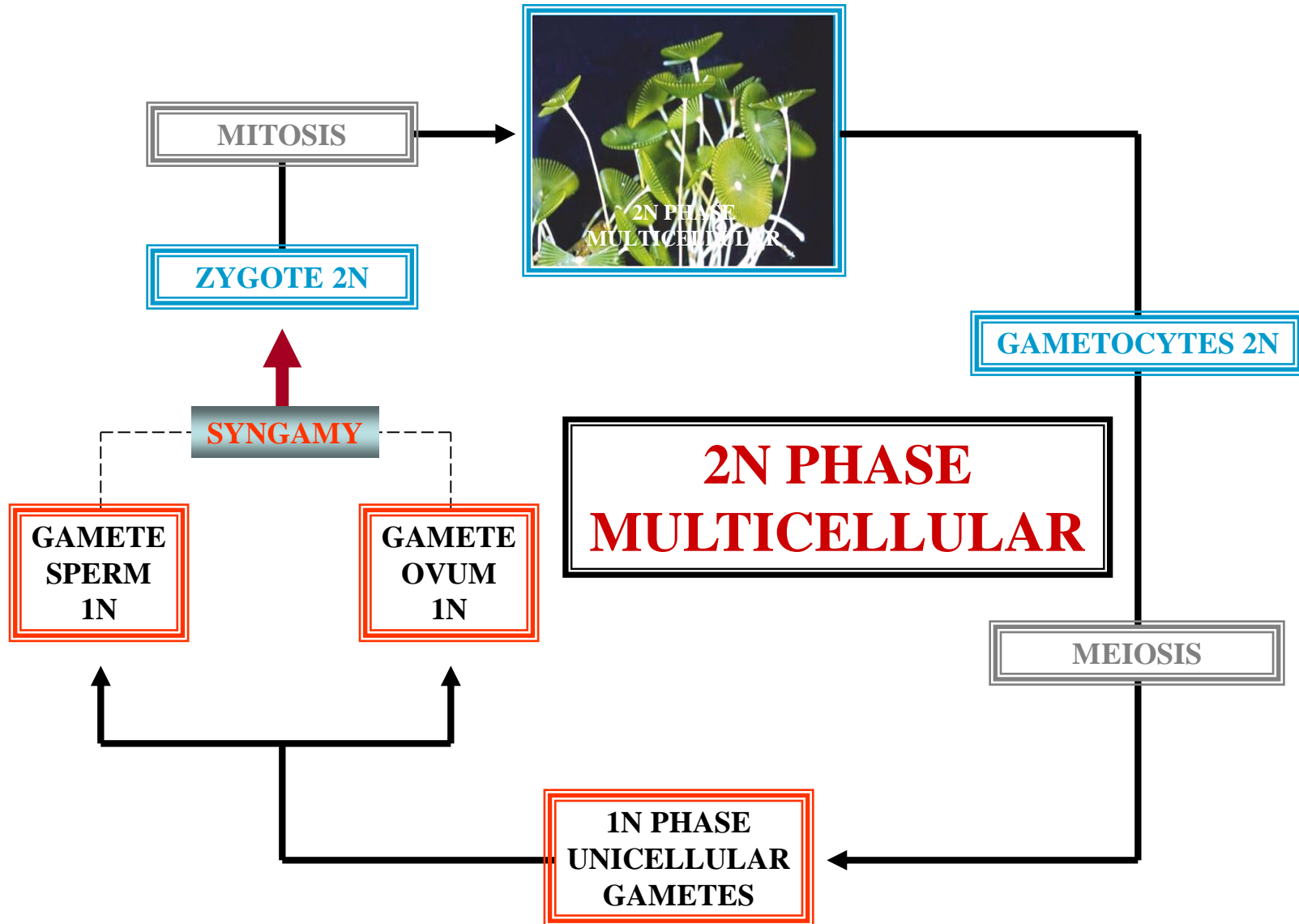


# GAMETIC LIFE CYCLE

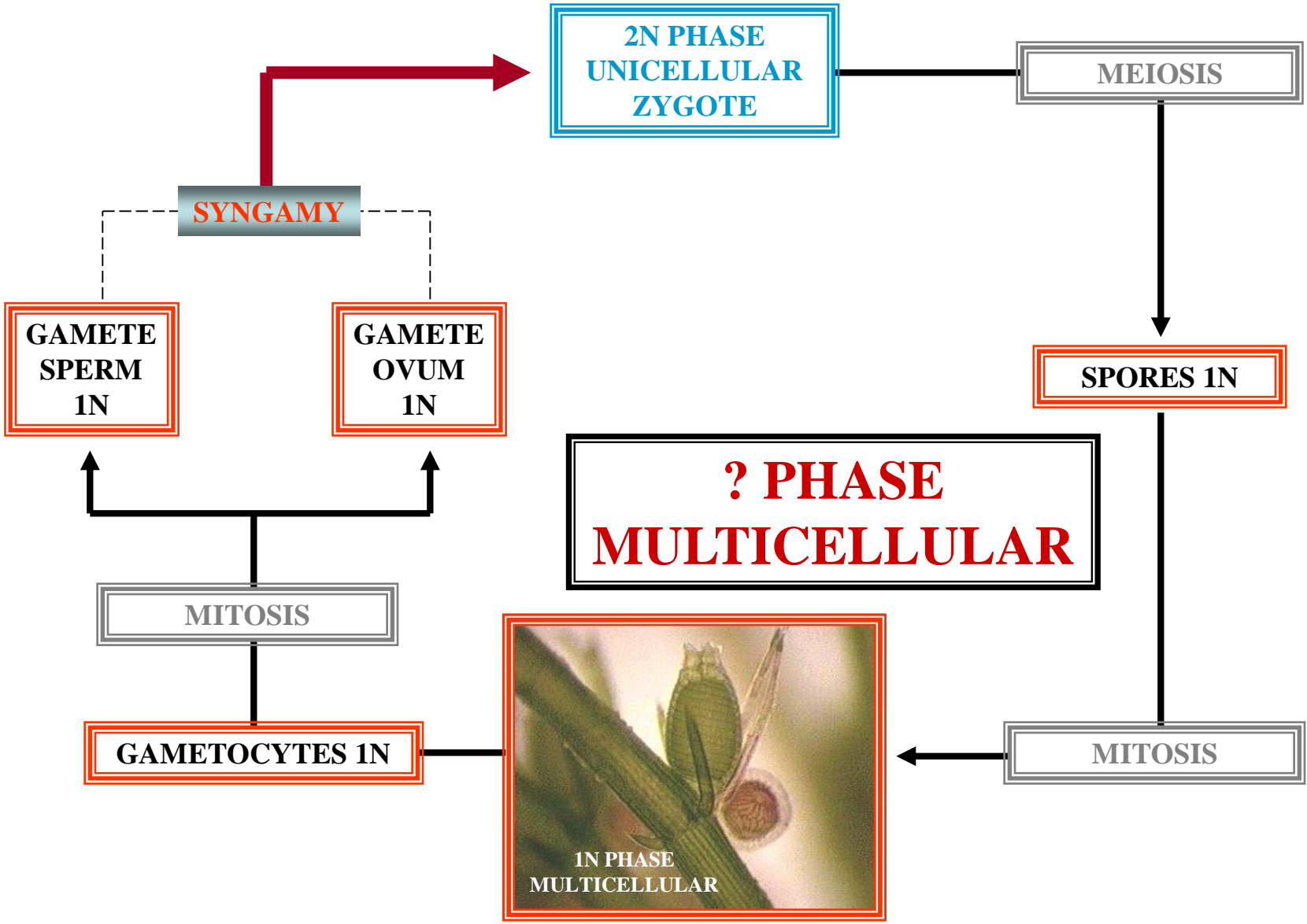
Z



?



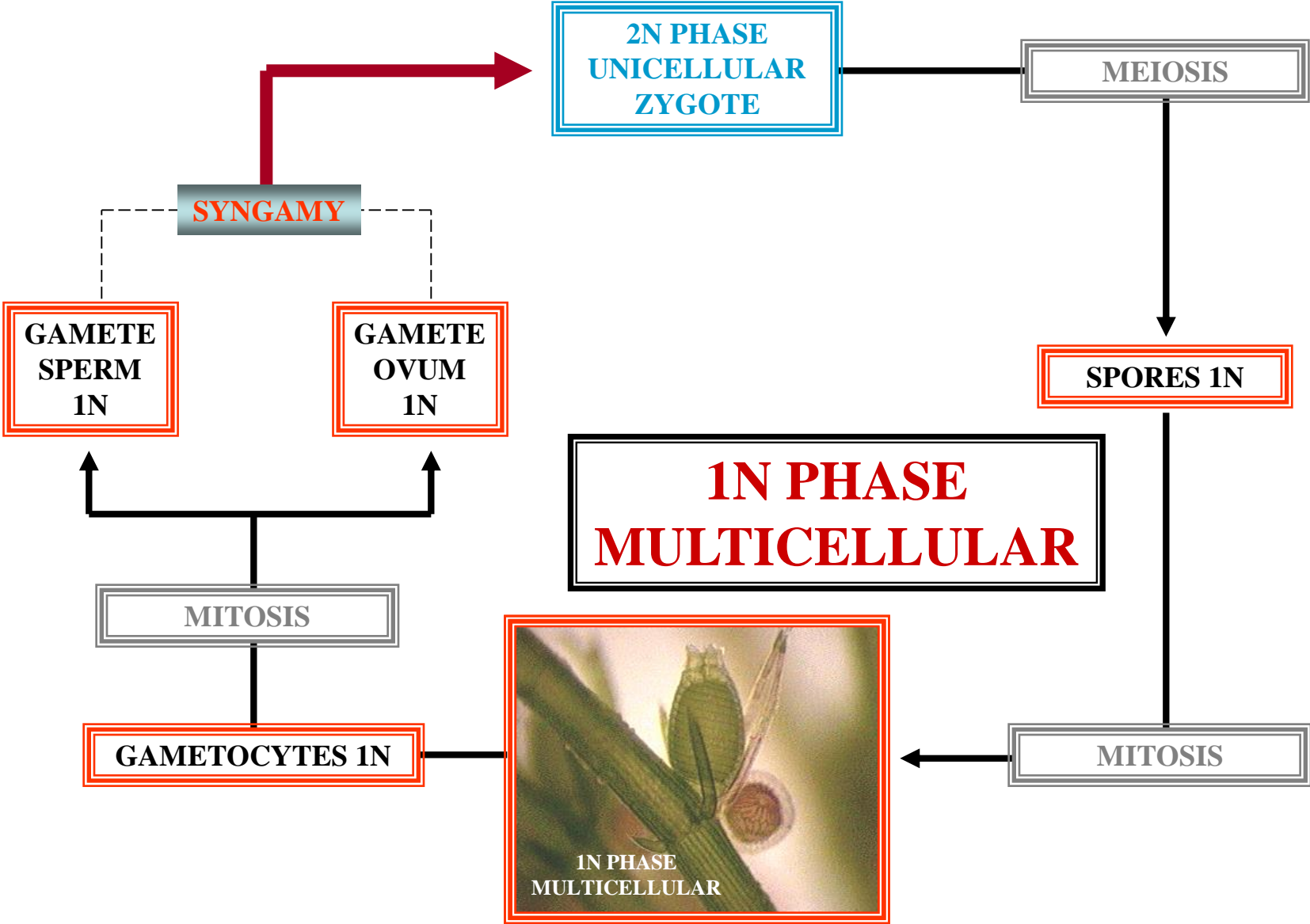
# ZYGOTIC LIFE CYCLE



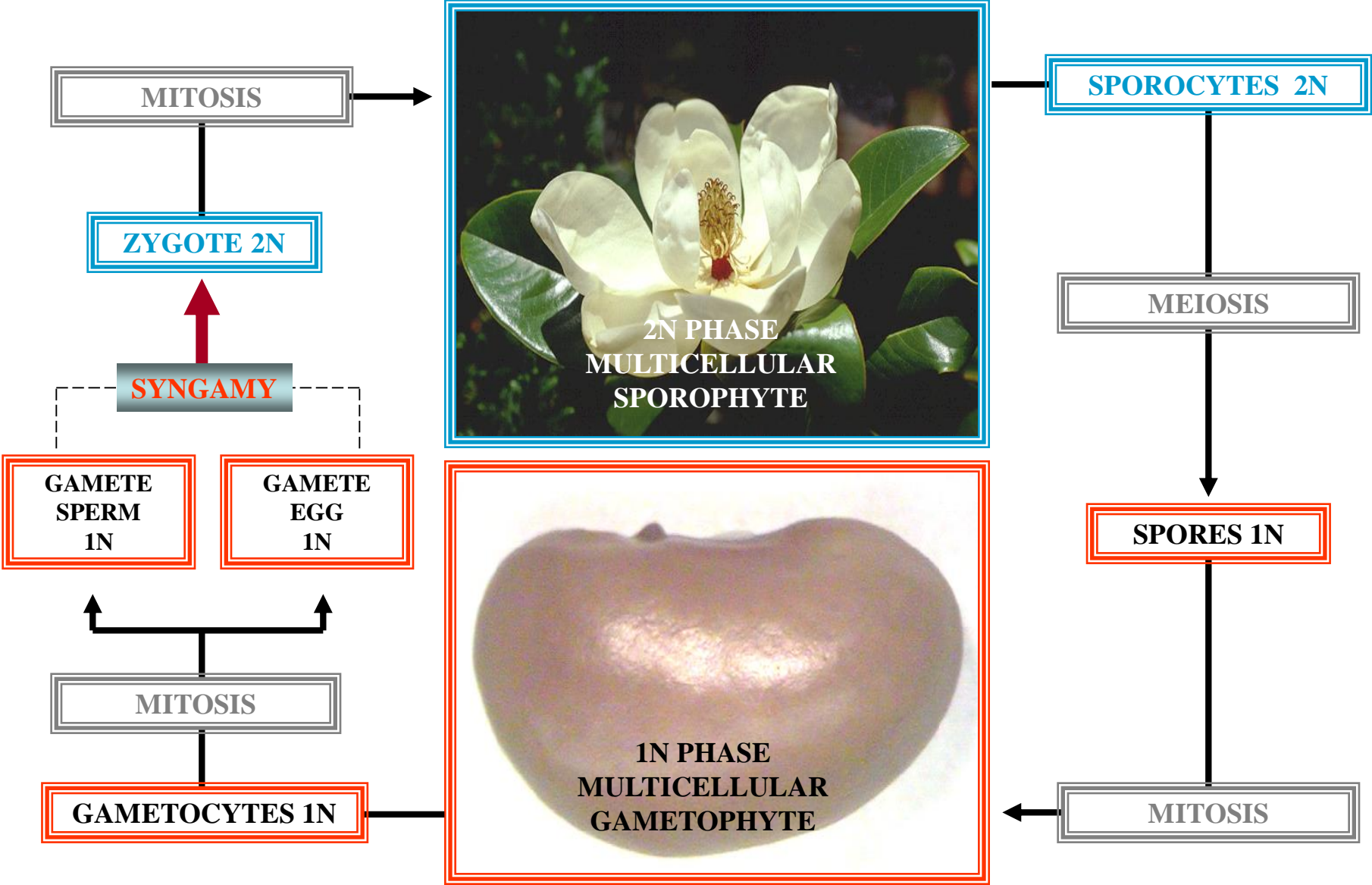


# ZYGOTIC LIFE CYCLE

S

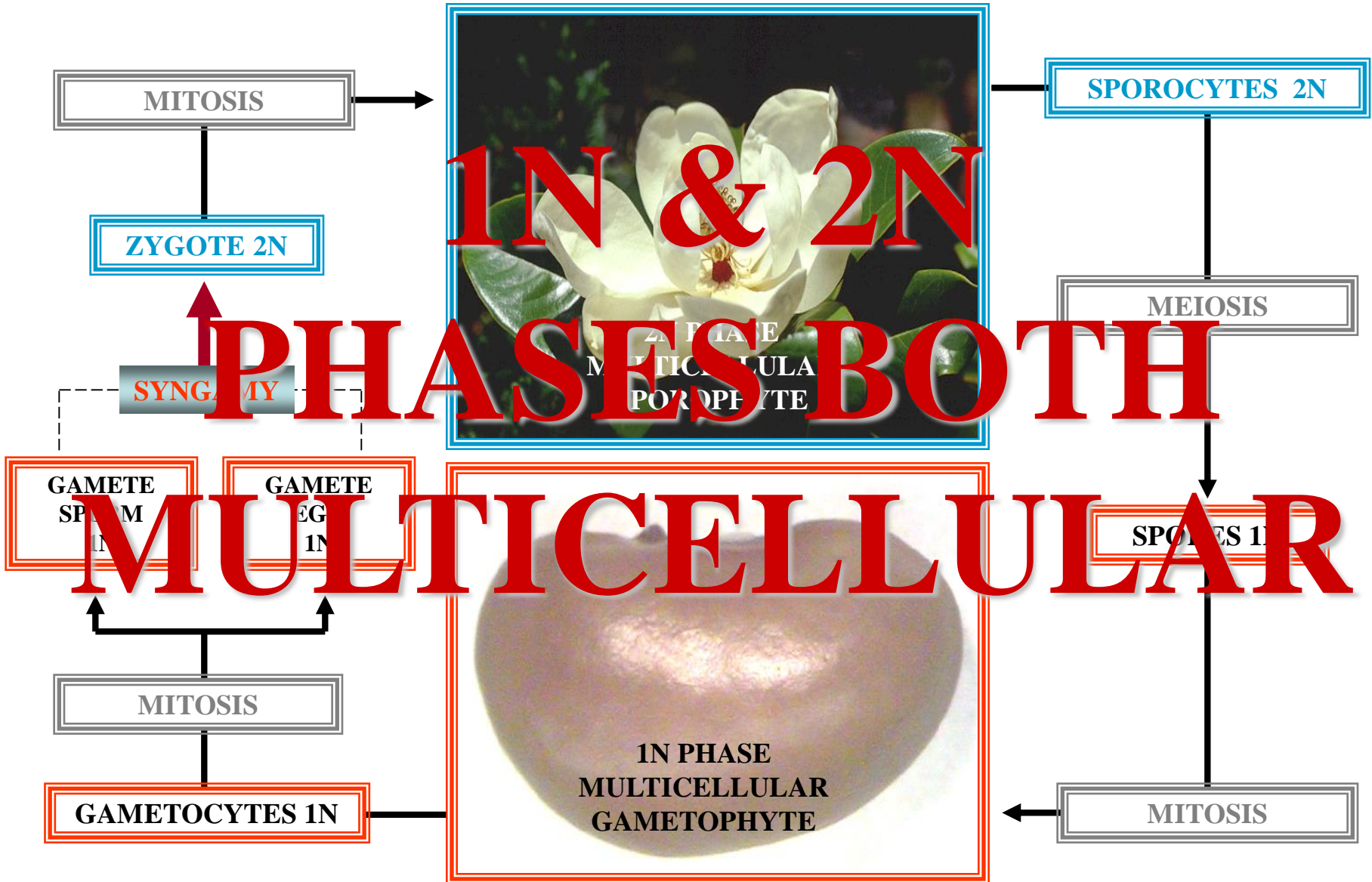


# SPORIC LIFE CYCLE





# SPORIC LIFE CYCLE



**ISOMORPHIC  
SPORIC LIFE CYCLE  
VS  
HETEROMORPHIC  
SPORIC LIFE CYCLE**

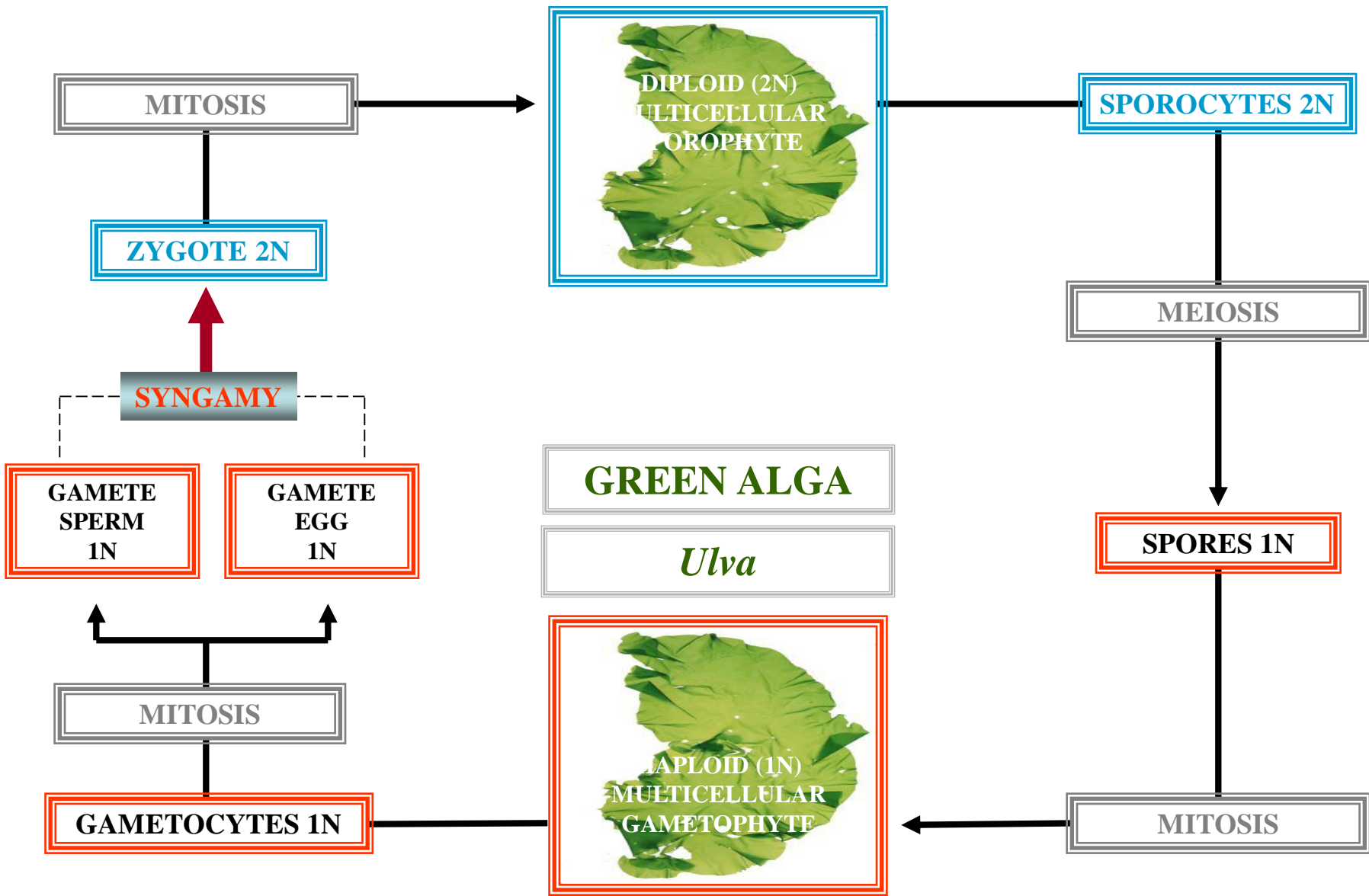
**ISOMORPHIC  
SPORIC  
LIFE CYCLE**

**ISOMORPHIC  
SPORIC LIFE CYCLE**  
GAMETOPHYTE (1N)  
&  
SPOROPHYTE (2N)  
SAME  
MORPHOLOGY  
**ISOMORPHIC  
SPORIC LIFE CYCLE**



**ISOMORPHIC  
SPORIC  
LIFE CYCLE  
EXAMPLE**

# PLANT SPORIC LIFE CYCLE

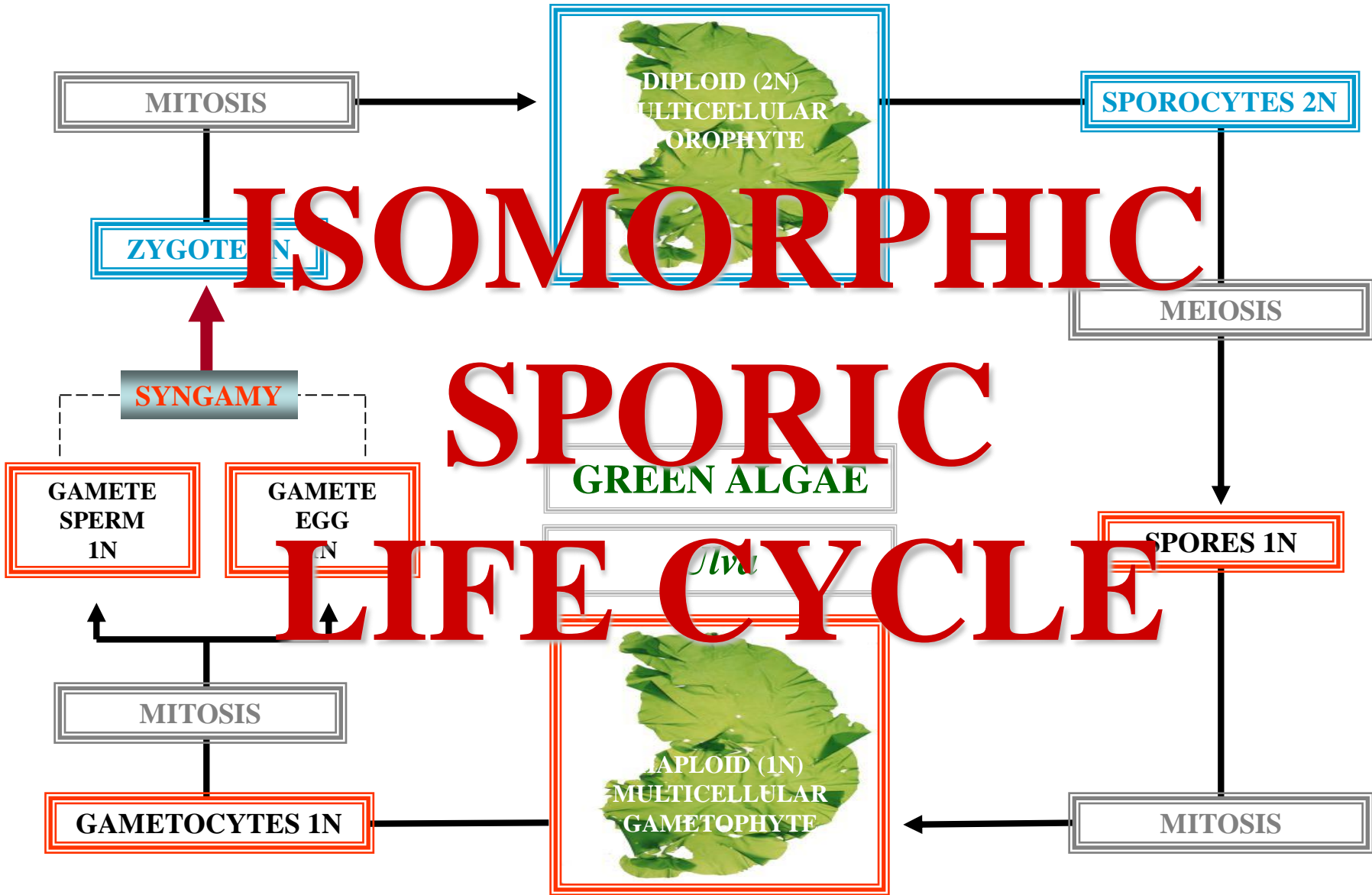




# PLANT SPORIC LIFE CYCLE

^

H



**HETEROMORPHIC  
SPORIC  
LIFE CYCLE**

**HETEROMORPHIC  
SPORIC LIFE CYCLE**

**GAMETOPHYTE (1N)**

**&**

**SPOROPHYTE (2N)**

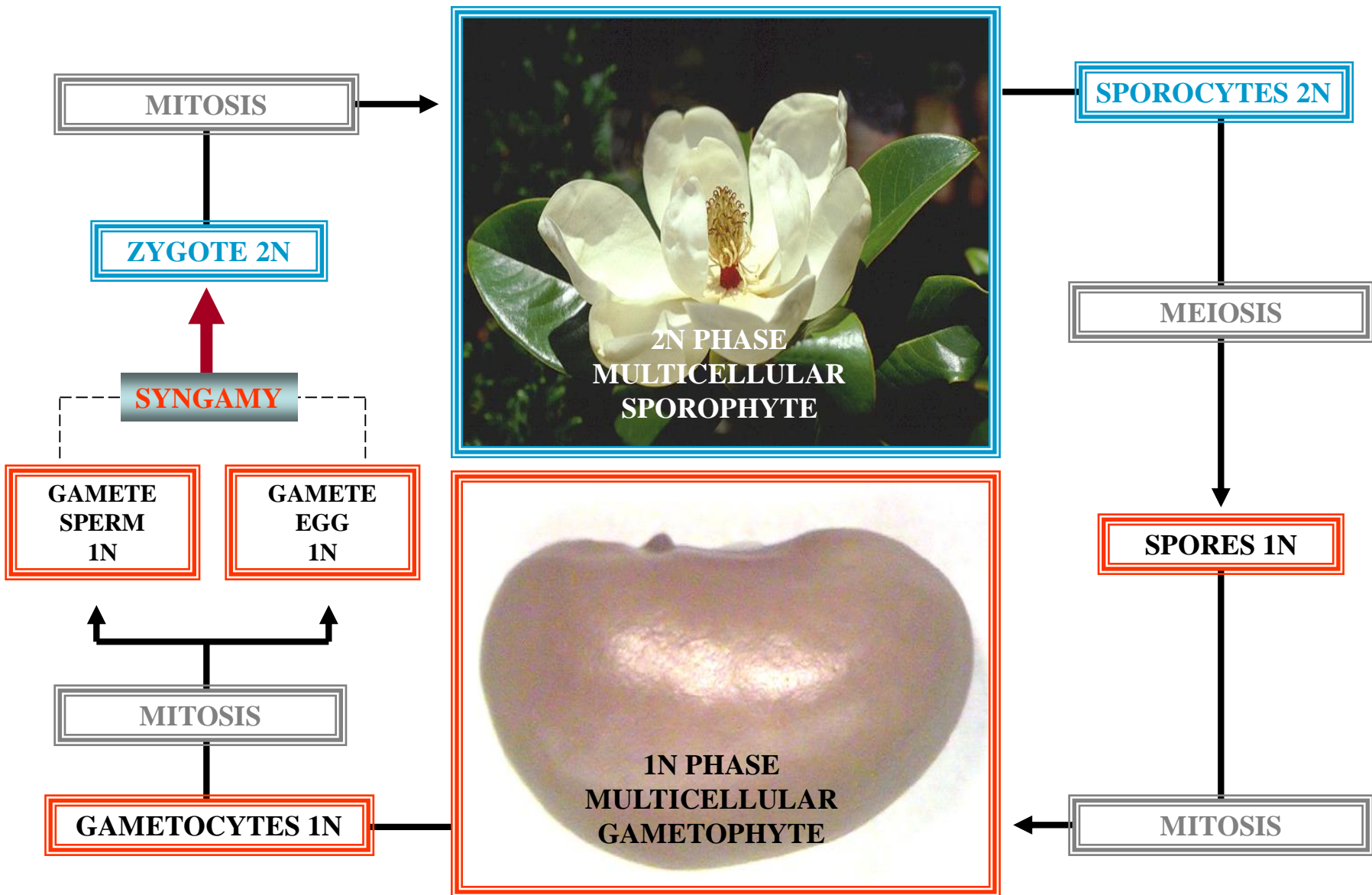
**DIFFERENT  
MORPHOLOGY**

**HETEROMORPHIC  
SPORIC LIFE CYCLE**

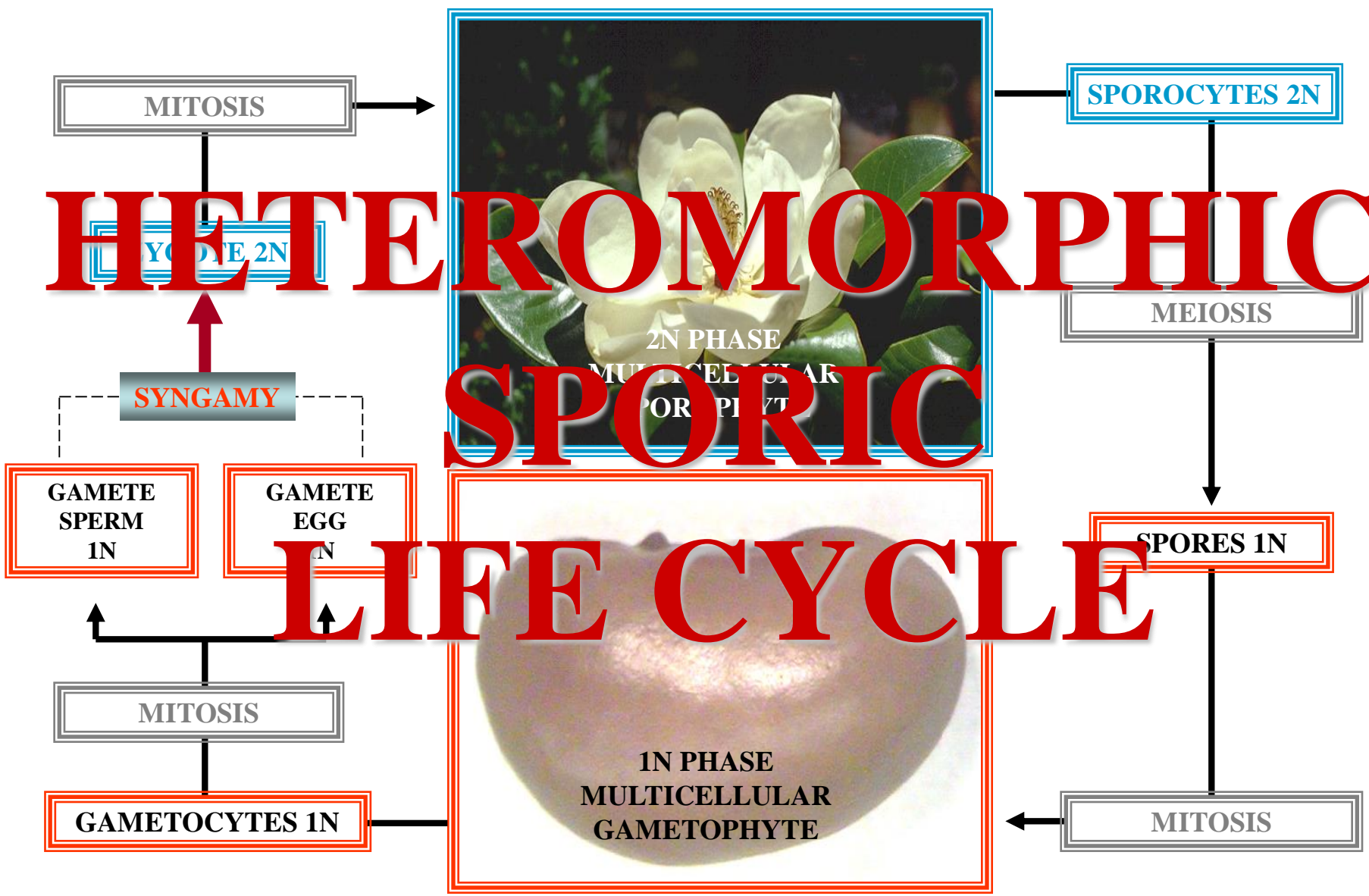


**HETEROMORPHIC  
SPORIC  
LIFE CYCLE  
EXAMPLE**

# MAGNOLIA SPORIC LIFE CYCLE



# MAGNOLIA SPORIC LIFE CYCLE



**QUESTION**

**ISOMORPHIC L.C.**

**&**

**HETEROMORPHIC L.C.**

**ARE ASSOCIATED  
WITH WHICH SEXUAL  
LIFE CYCLE?**

**QUESTION**



**ANSWER**

**SPORIC  
LIFE CYCLE**

**ANSWER**





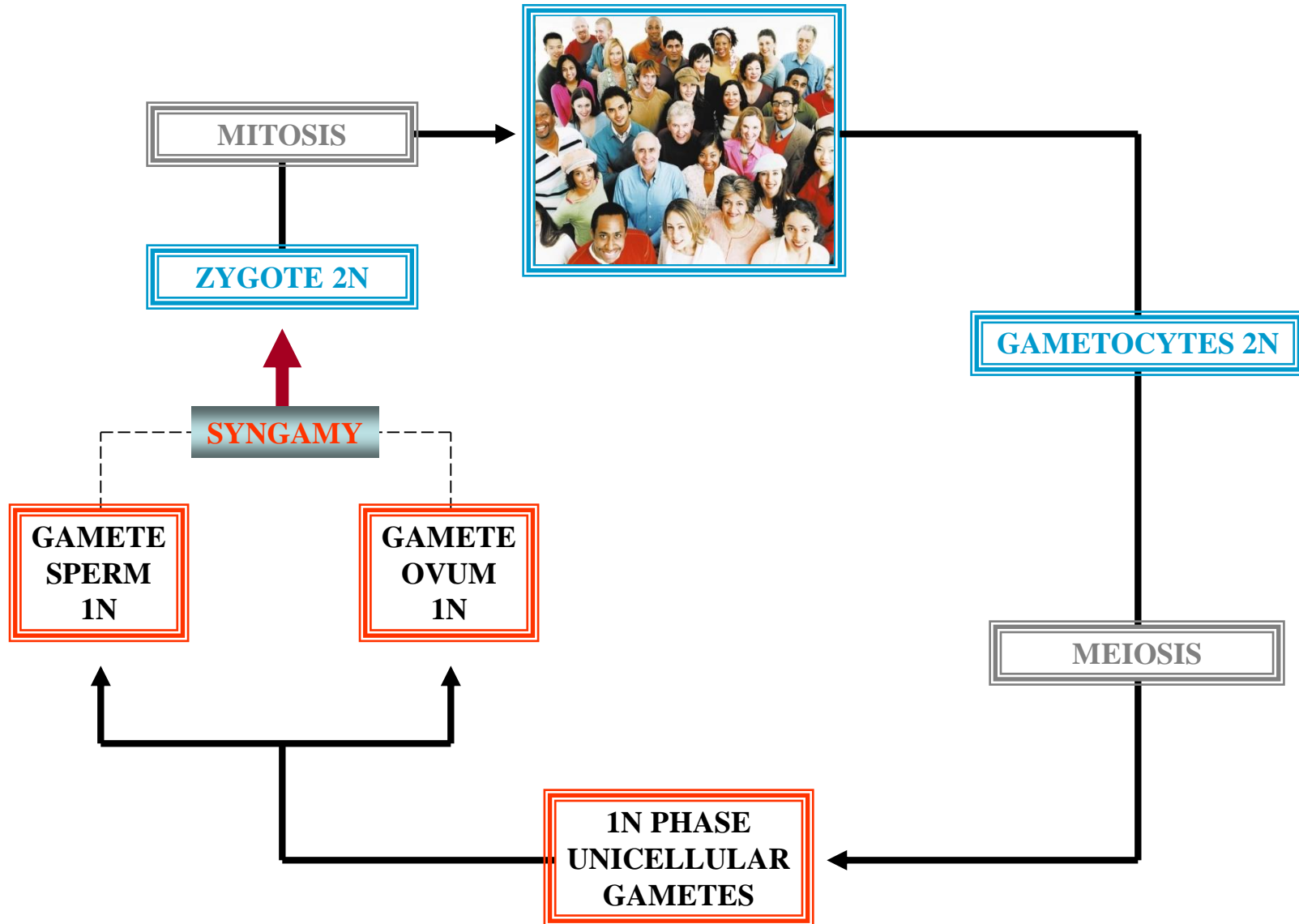
**EUKARYOTE  
SEXUAL  
LIFE CYCLES  
SUMMARY**

# QUESTION

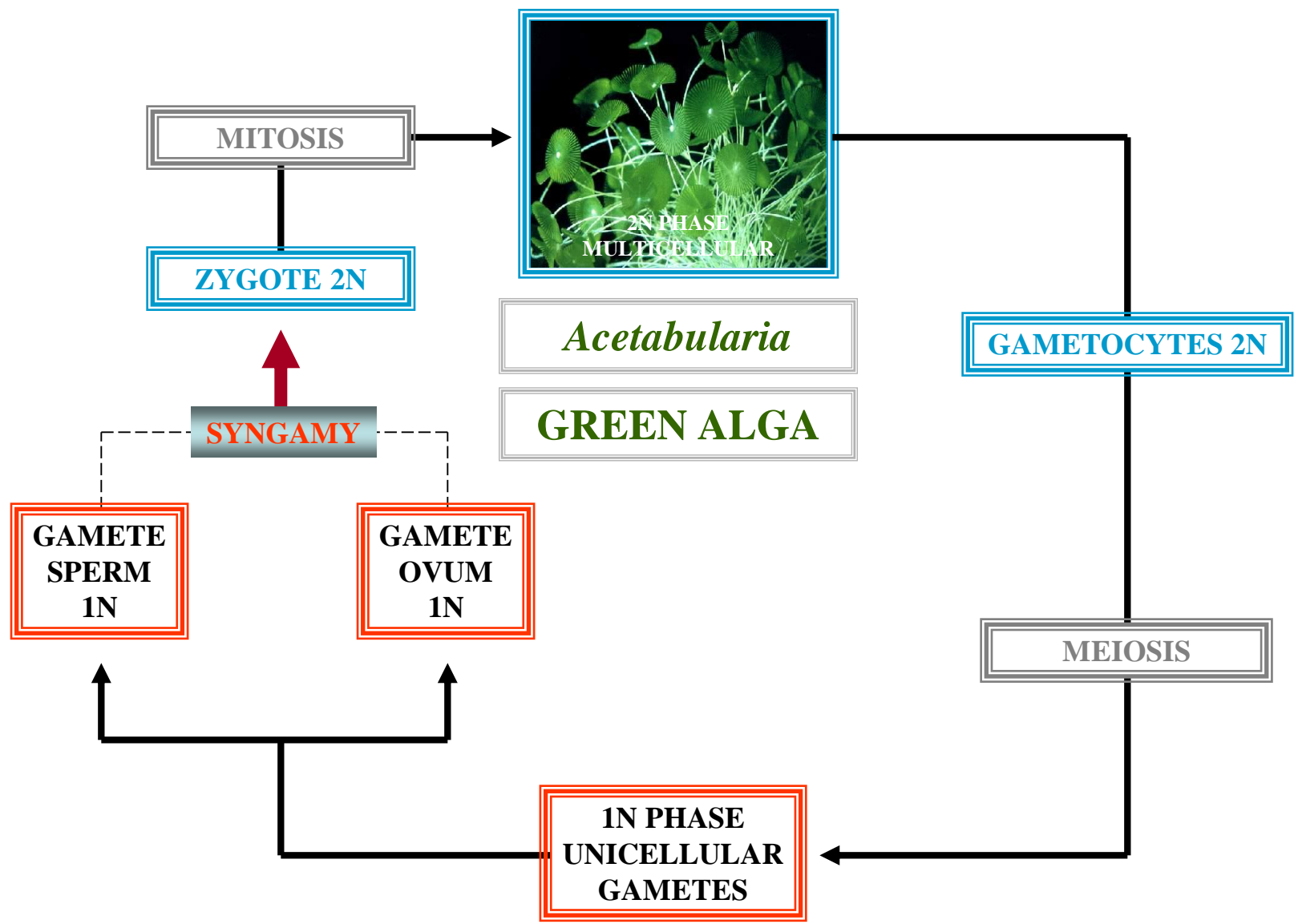
WHICH LIFE CYCLE  
IS ASSOCIATED  
WITH ANIMALS?

# QUESTION

# ANIMAL GAMETIC LIFE CYCLE



# TRUE PLANTS GAMETIC LIFE CYCLE



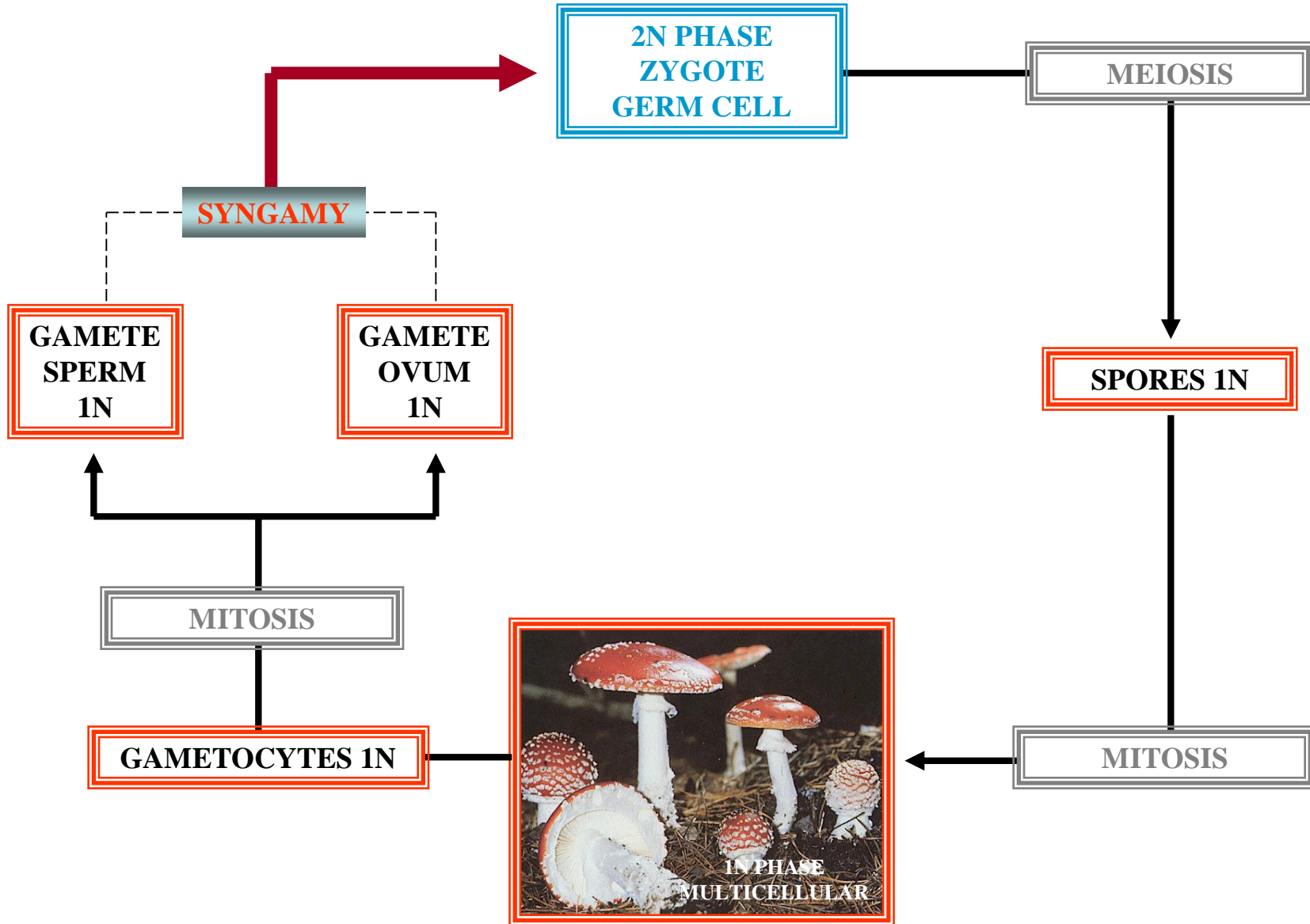
# QUESTION

WHICH LIFE CYCLE  
IS ASSOCIATED  
WITH FUNGI?

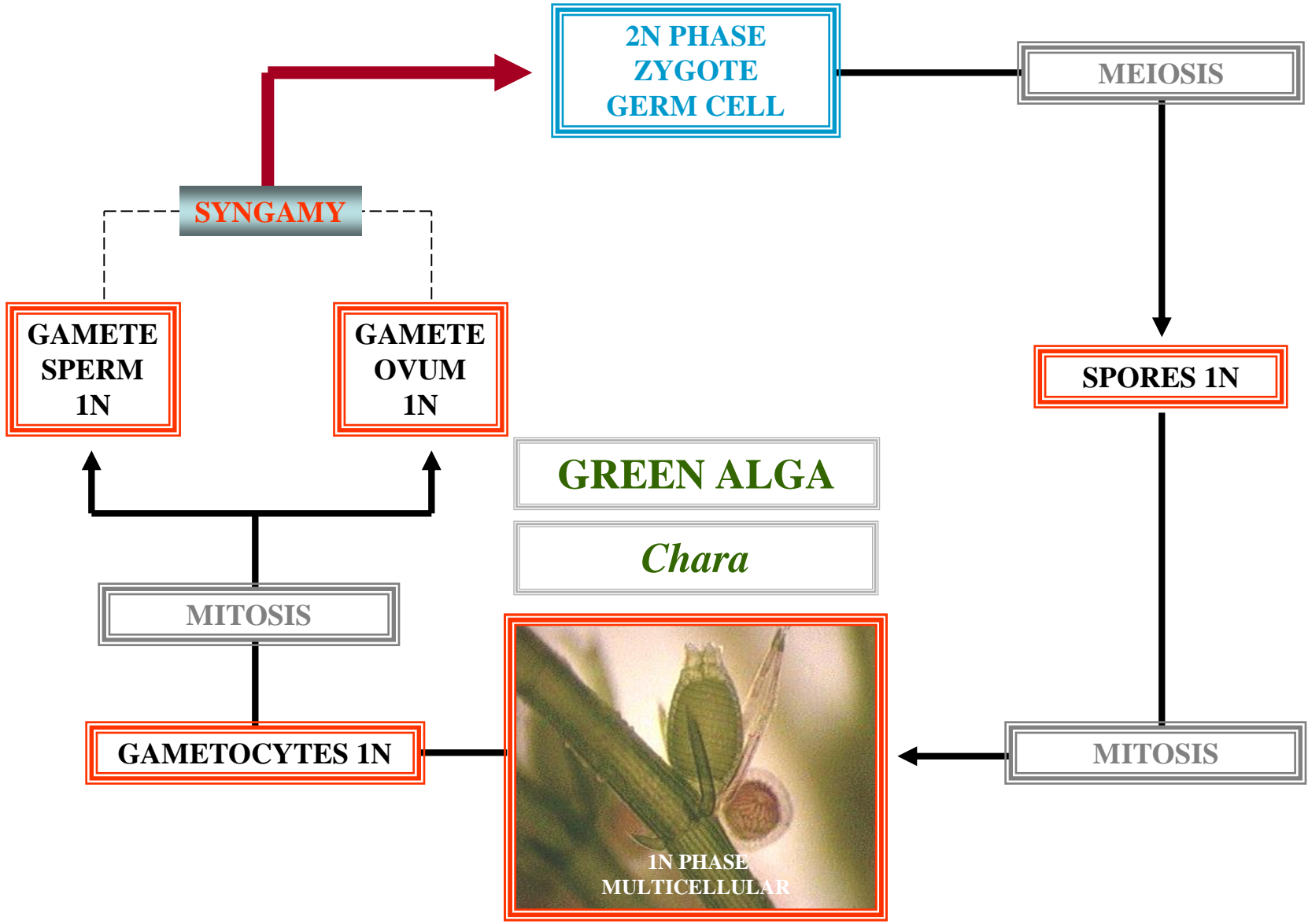
# QUESTION

# FUNGUS

## ZYGOTIC LIFE CYCLE



# TRUE PLANTS ZYGOTIC LIFE CYCLE



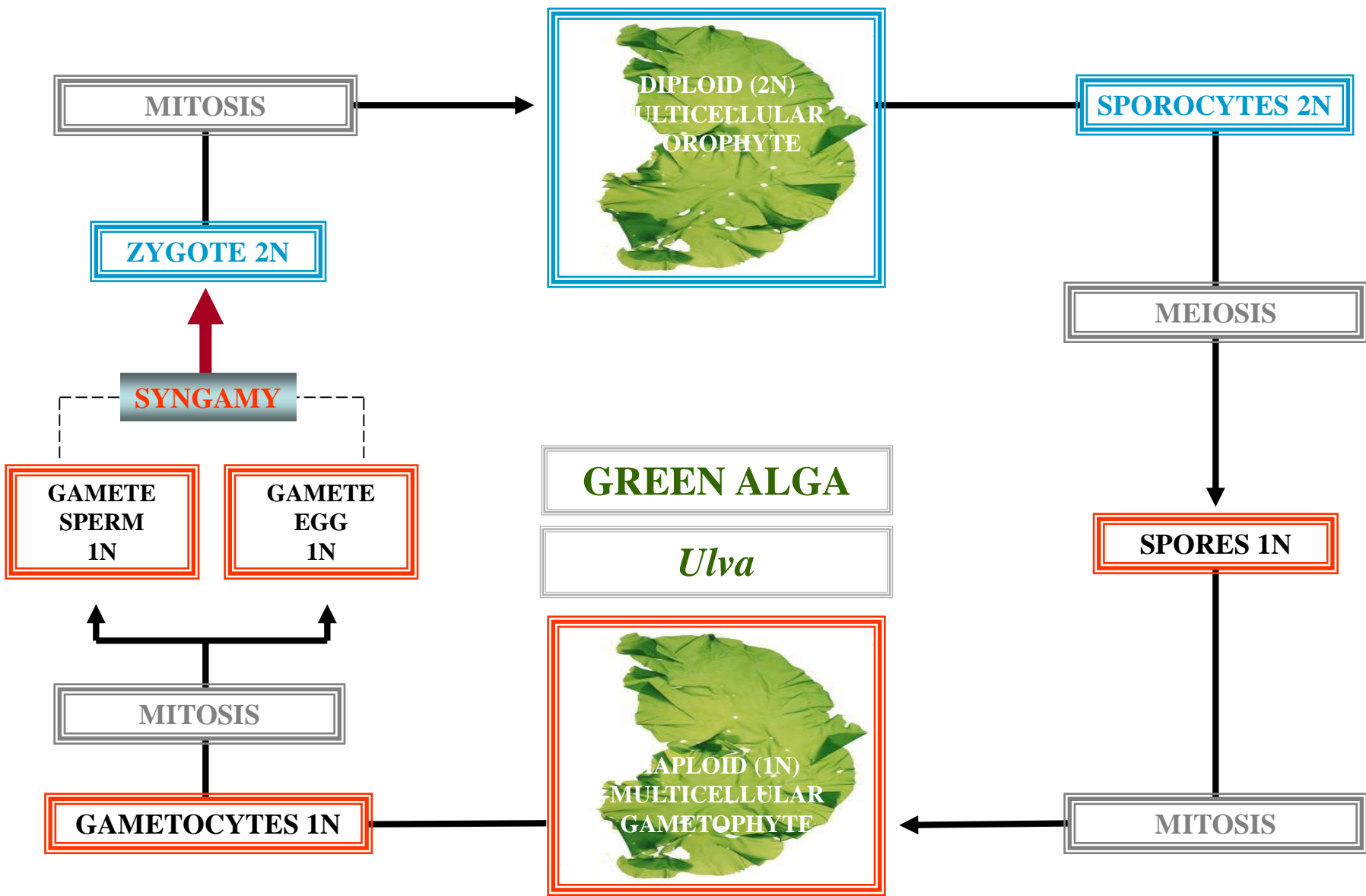


# QUESTION

WHICH LIFE CYCLE  
IS ASSOCIATED  
WITH PLANTS?

# QUESTION

# TRUE PLANTS SPORIC LIFE CYCLE







# EMBRYOPHYTES

## SPORIC LIFE CYCLE

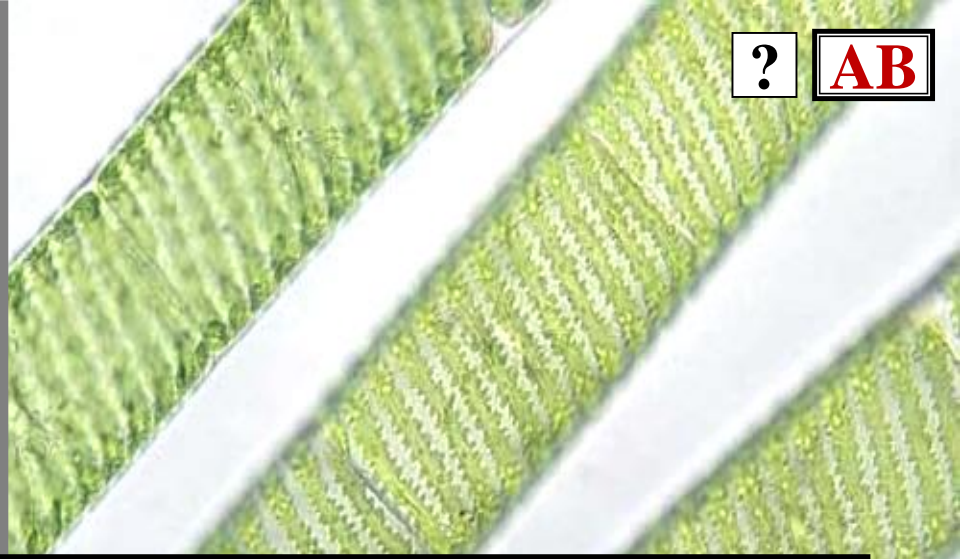




# **GENERAL TAXONOMIC TERMS REVIEW**

**THALLOPHYTES**  
**VS**  
**EMBRYOPHYTES**

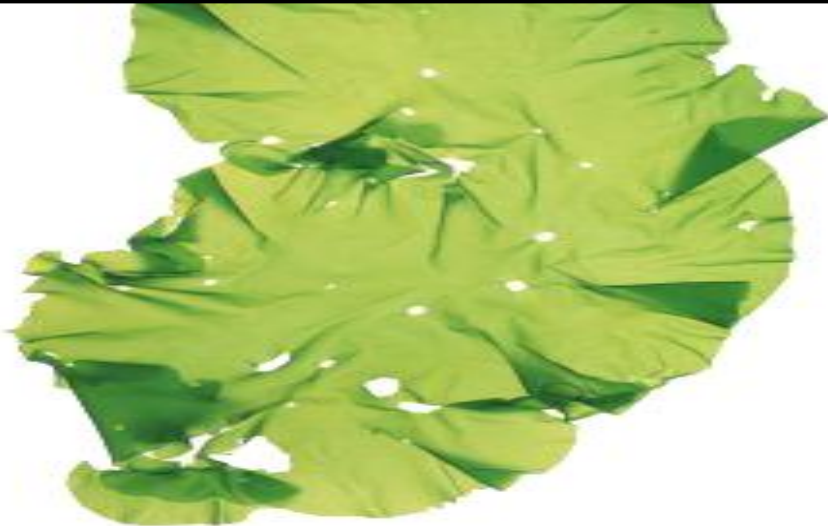




? AB

# THALLOPHYTES

EMBRYO





E  
+

# THALLOPHYTES

EMBRYO: **ABSENT**







# EMBRYOPHYTES

## EMBRYO

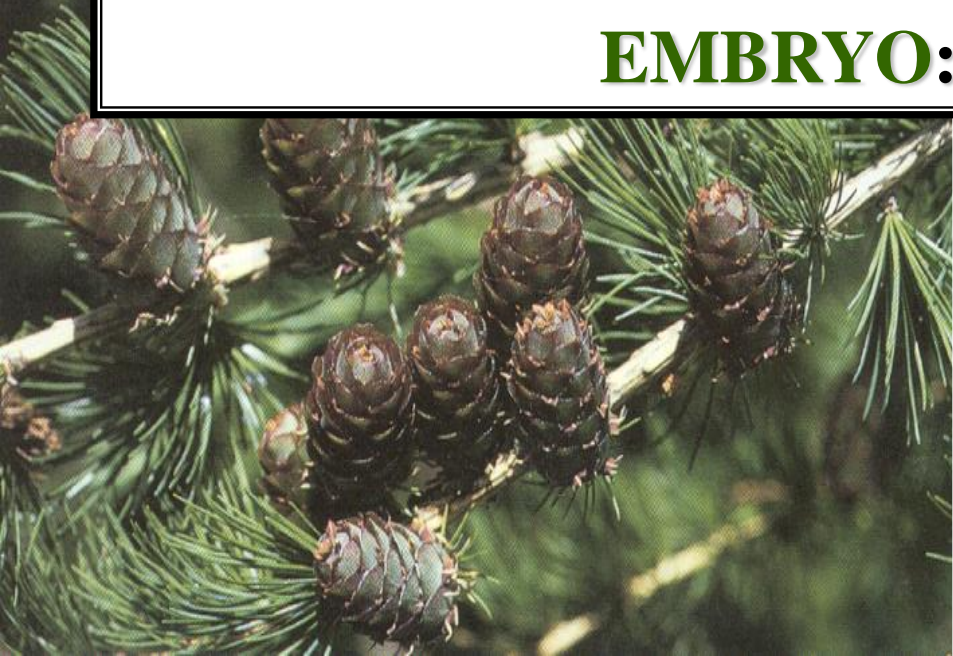






# EMBRYOPHYTES

EMBRYO: **PRESENT**



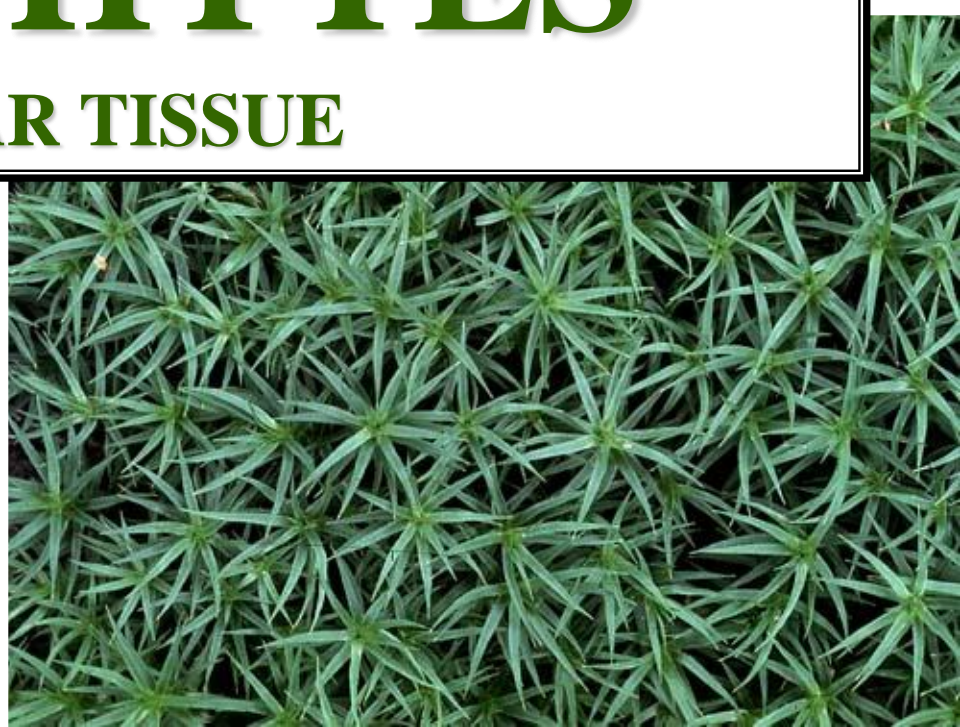
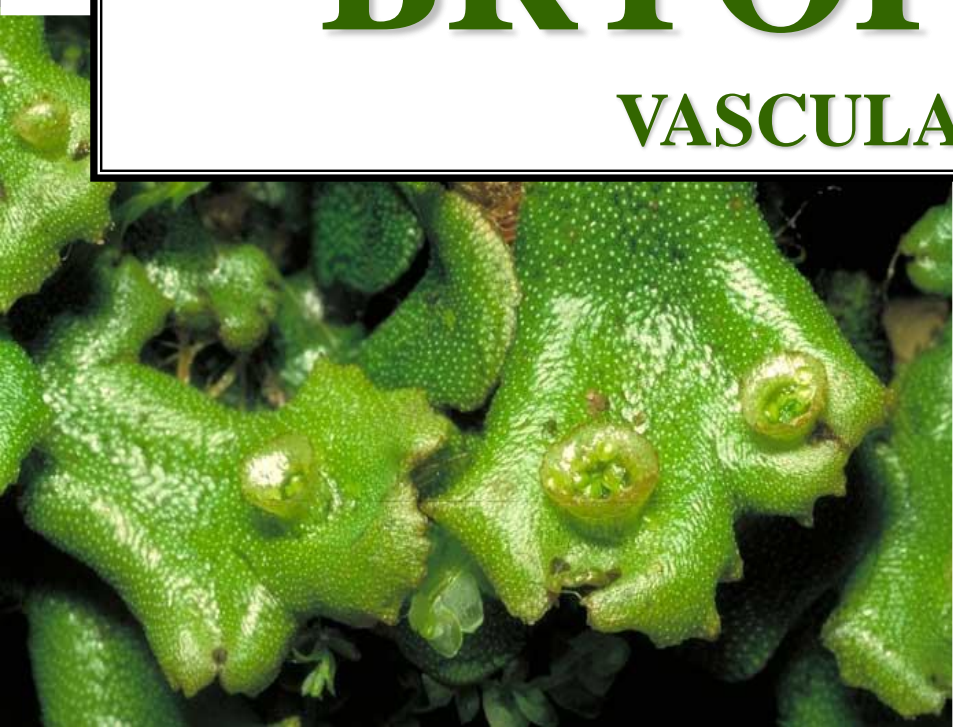
# BRYOPHYTES VS TRACHEOPHYTES





# BRYOPHYTES

VASCULAR TISSUE







# BRYOPHYTES

VASCULAR TISSUE: **ABSENT**

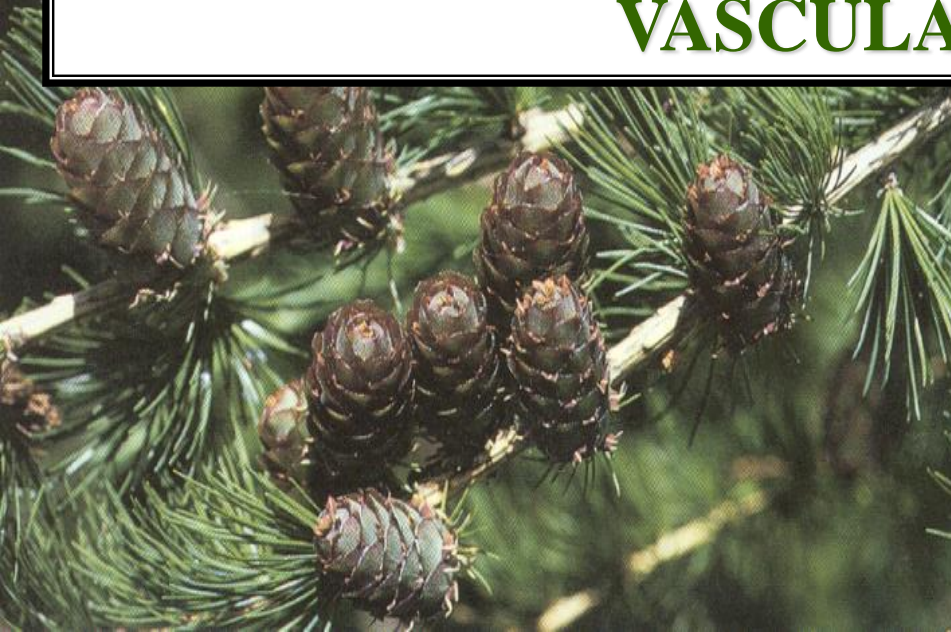






# TRACHEOPHYTES

## VASCULAR TISSUE

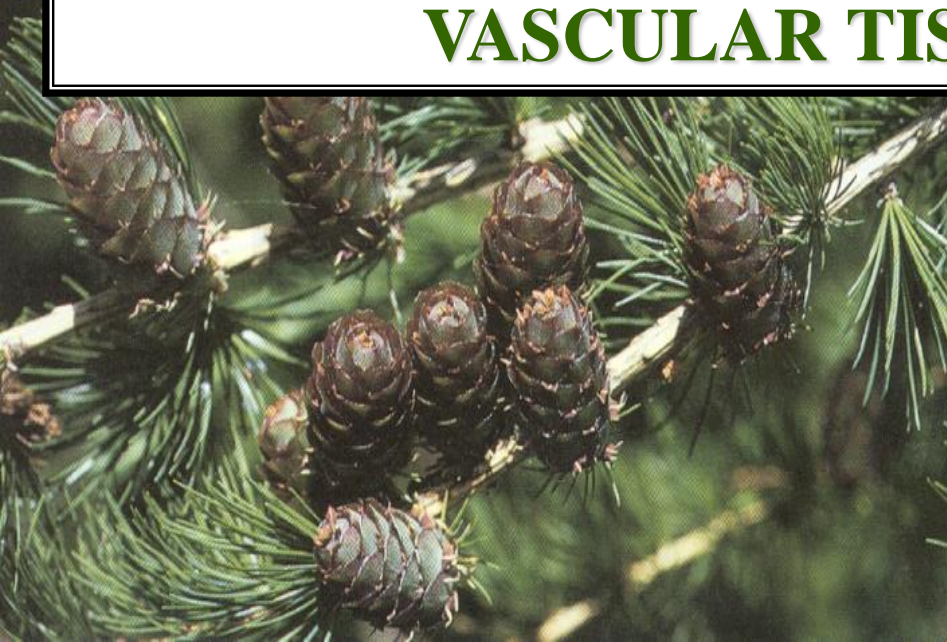






# TRACHEOPHYTES

VASCULAR TISSUE: **PRESENT**



# PTERIDOPHYTES VS SPERMATOPHYTES





# PTERIDOPHYTES

SEED







S

+

# PTERIDOPHYTES

**SEED: ABSENT**

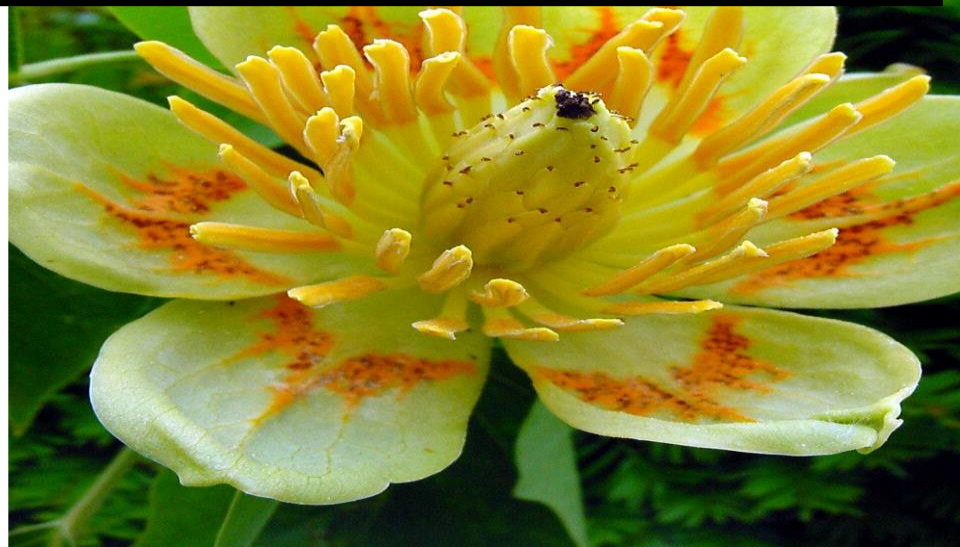






# SPERMATOPHYTES

SEED







# SPERMATOPHYTES

**SEED: PRESENT**



# GYMNOSPERMS VS ANGIOSPERMS





# GYMNOSPERMS

FLOWER / FRUIT







A

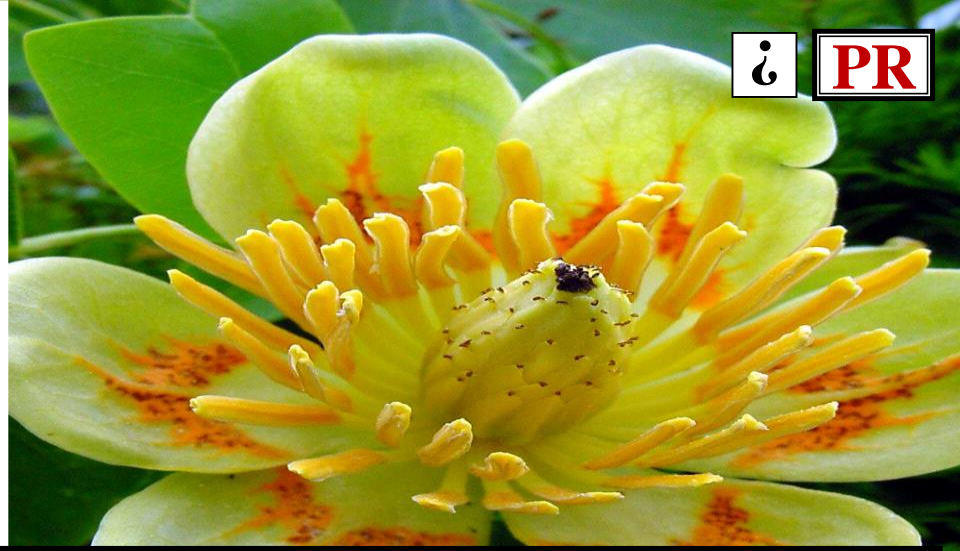
+

# GYMNOSPERMS

FLOWER / FRUIT: **ABSENT**







PR

# ANGIOSPERMS

FLOWER / FRUIT







# ANGIOSPERMS

**FLOWER / FRUIT: PRESENT**







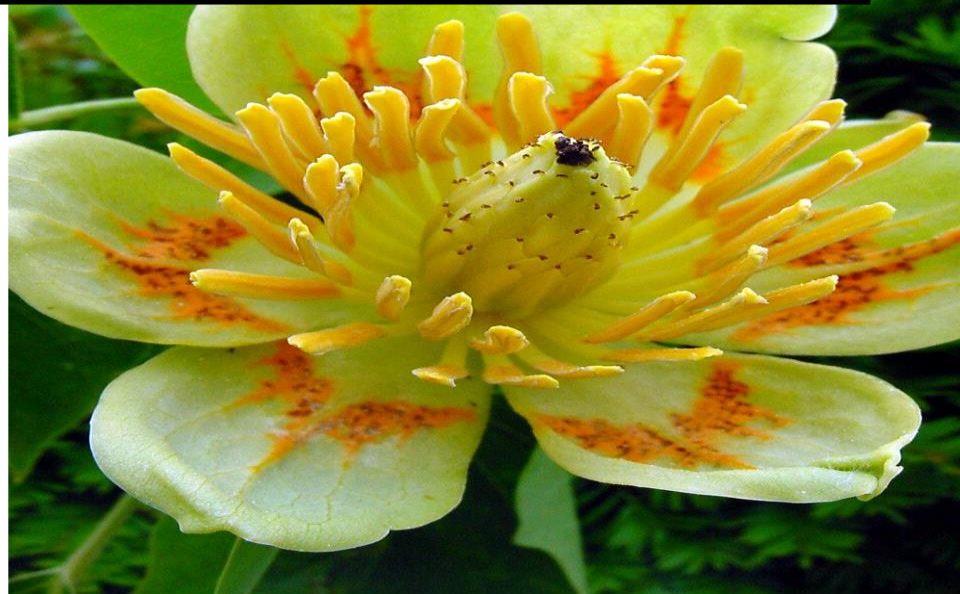
# KINGDOM PLANTAE



# COMMON NAME



# TRUE PLANTS





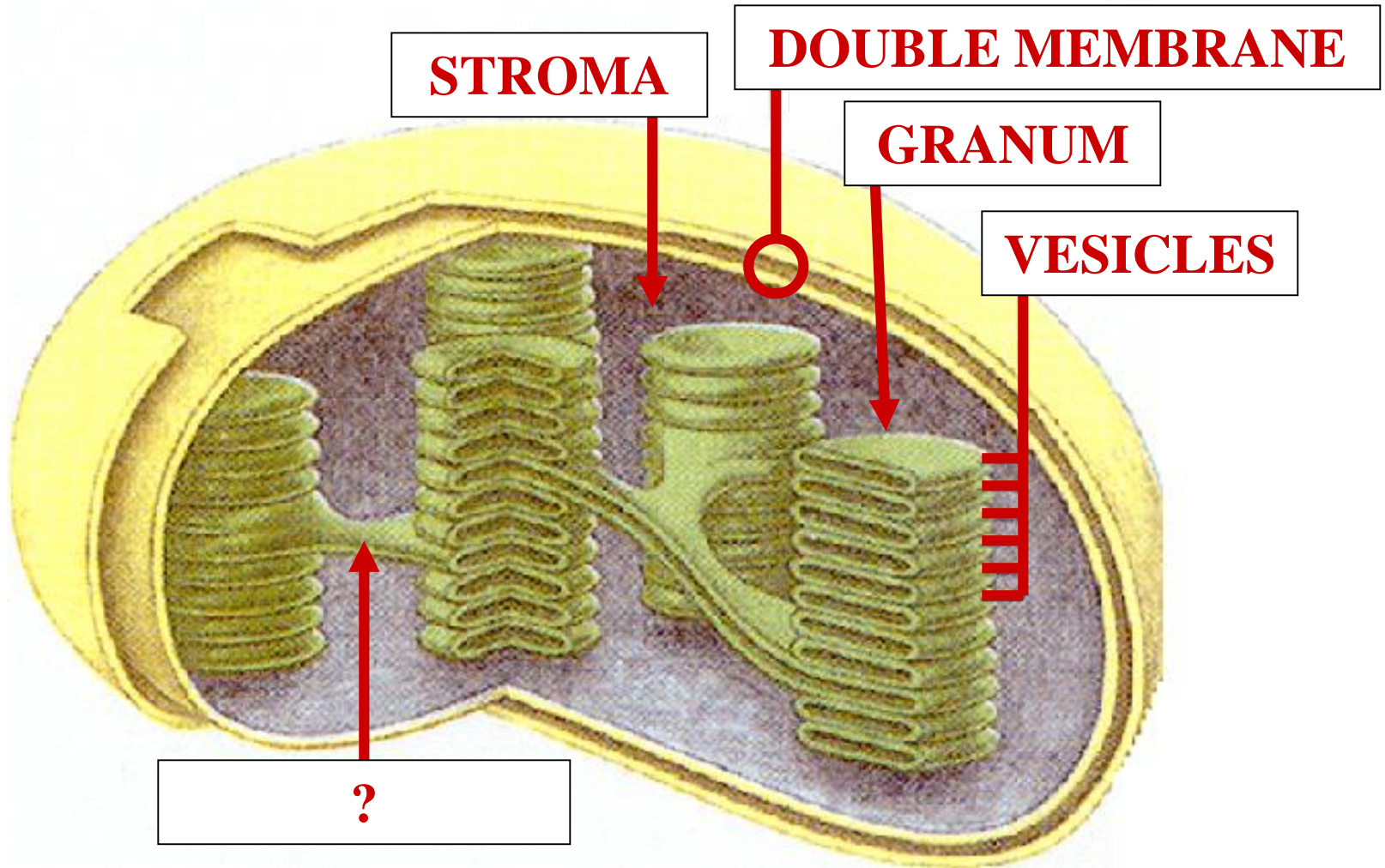
# KINGDOM PLANTAE CHARACTERS



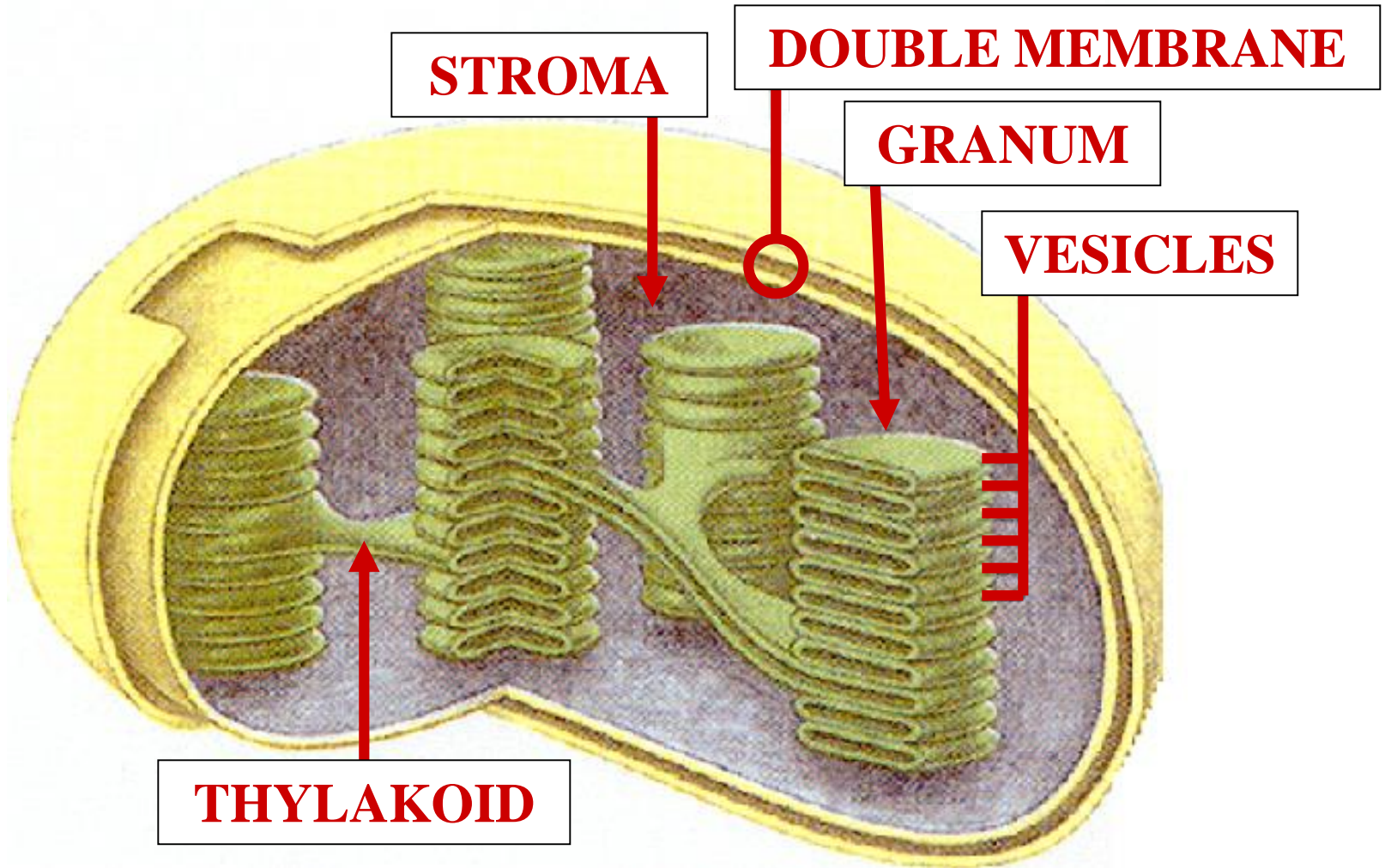
# PHOTOSYNTHETIC PIGMENTS



# TRUE PLANT CHLOROPLAST ULTRASTRUCTURE

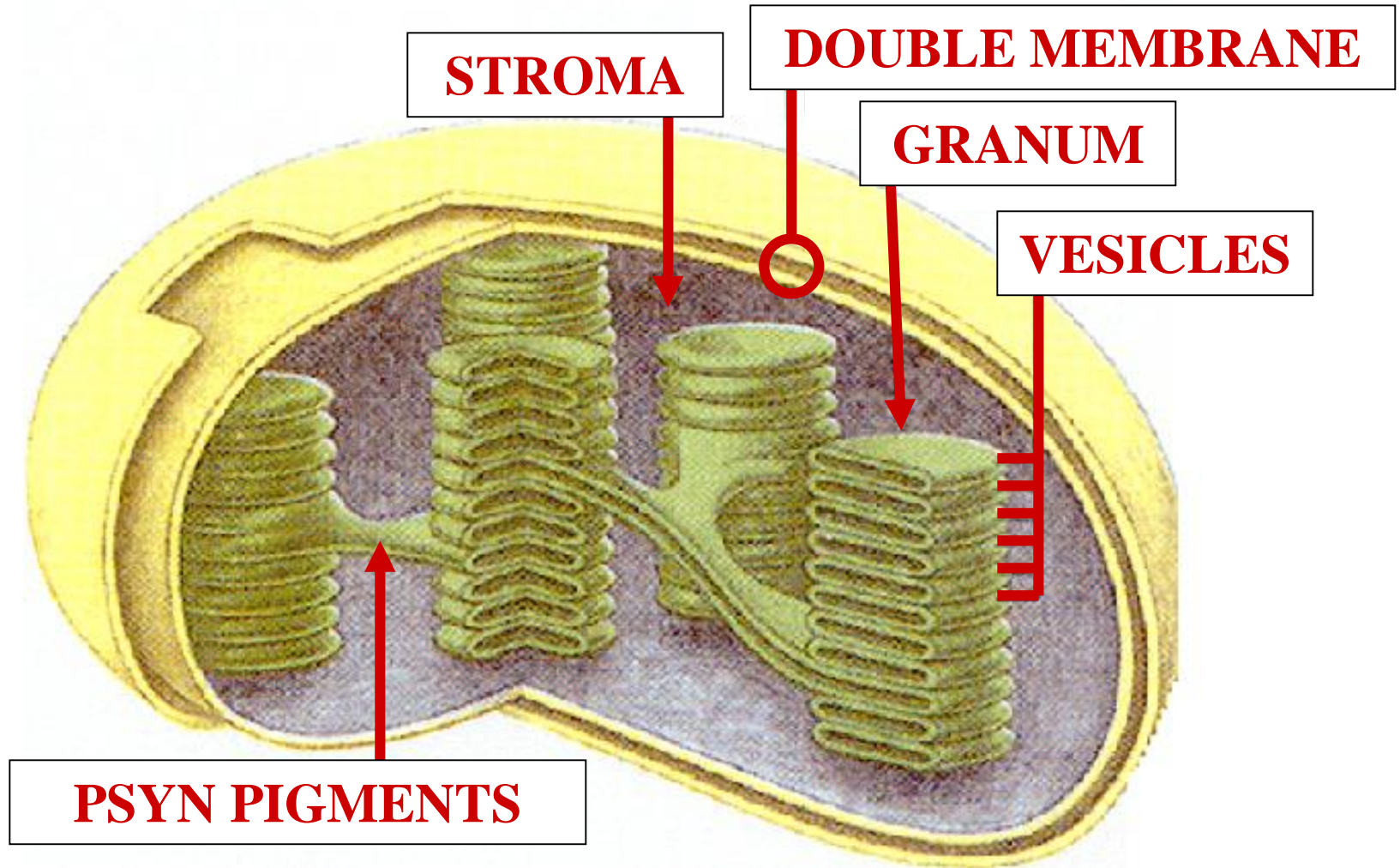


# TRUE PLANT CHLOROPLAST ULTRASTRUCTURE





# TRUE PLANT CHLOROPLAST ULTRASTRUCTURE





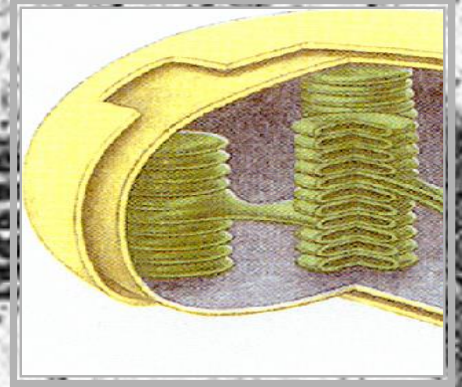


# PRIMARY PHOTOSYNTHETIC PIGMENTS



# CHLOROPHYLLS

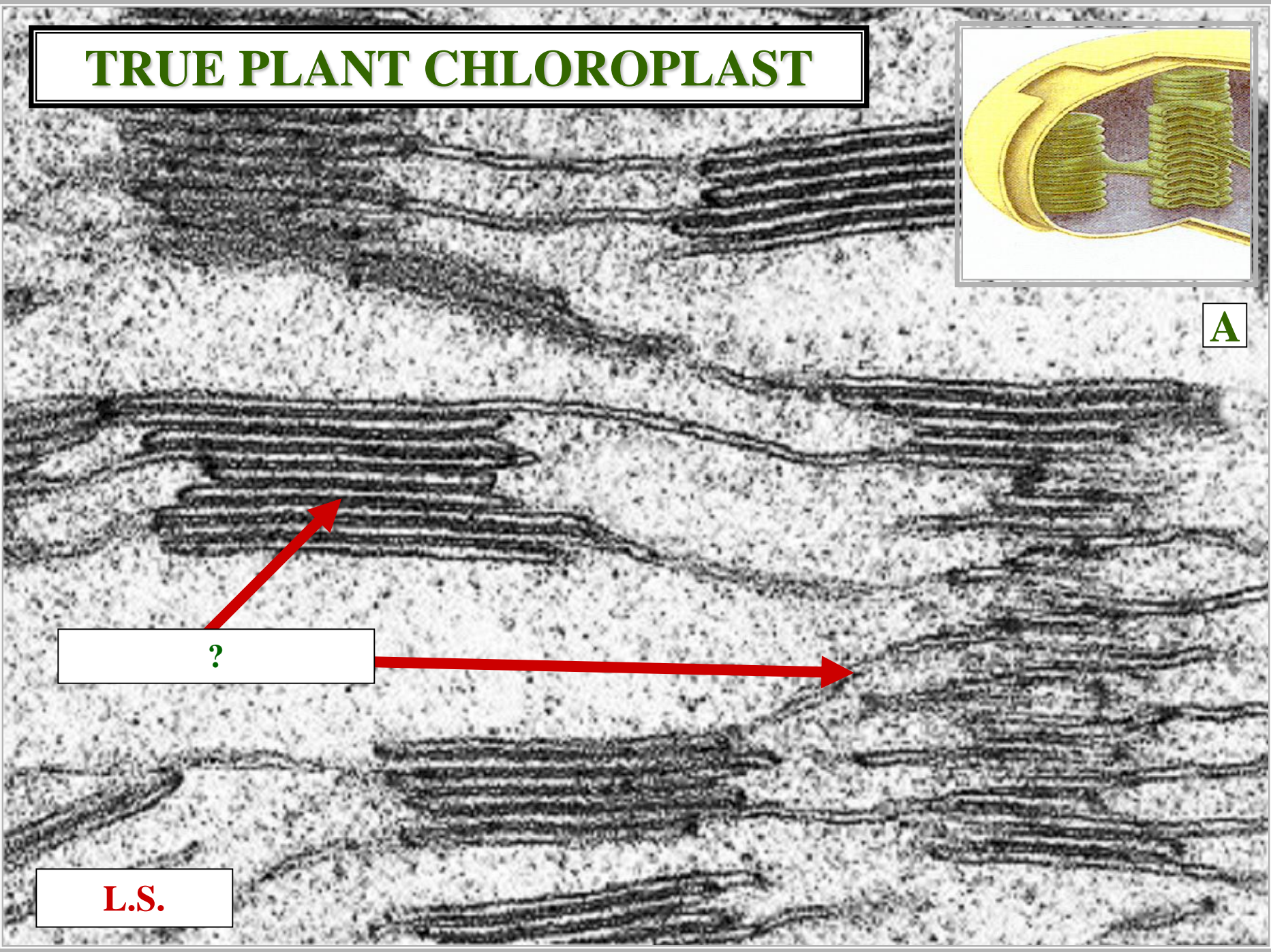
# TRUE PLANT CHLOROPLAST



A

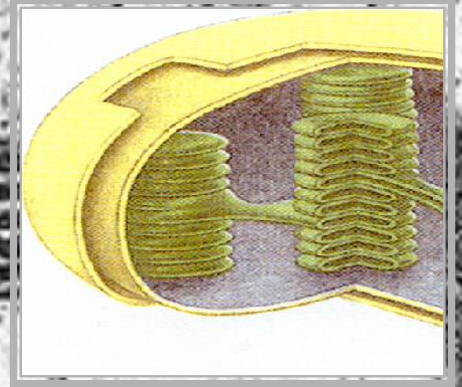
?

L.S.



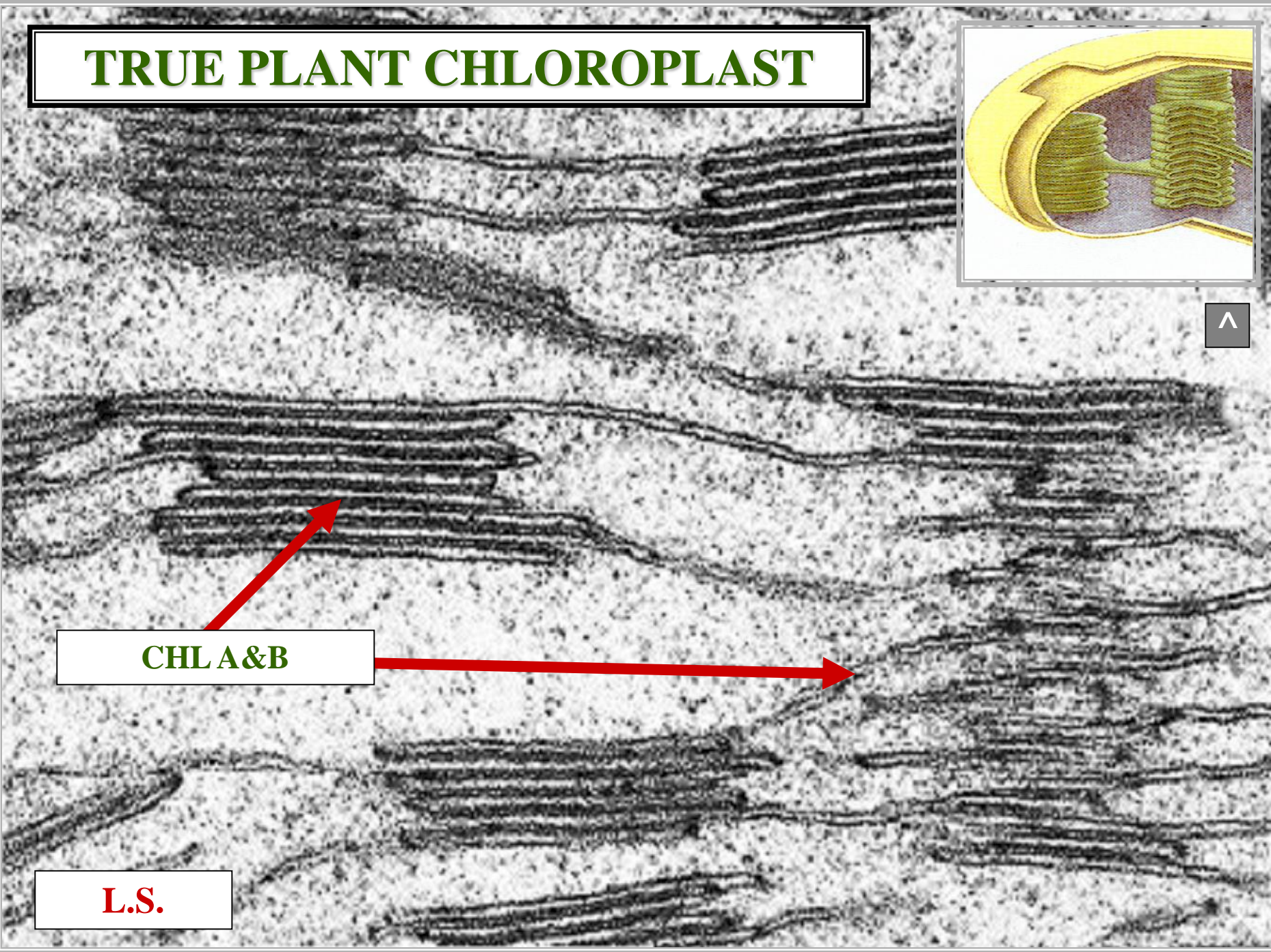


# TRUE PLANT CHLOROPLAST



CHL A&B

L.S.





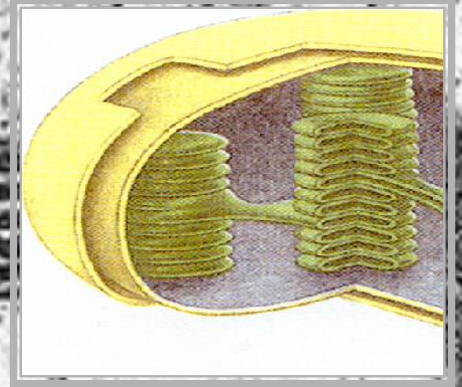
# SECONDARY PHOTOSYNTHETIC PIGMENTS



# CAROTENOIDS



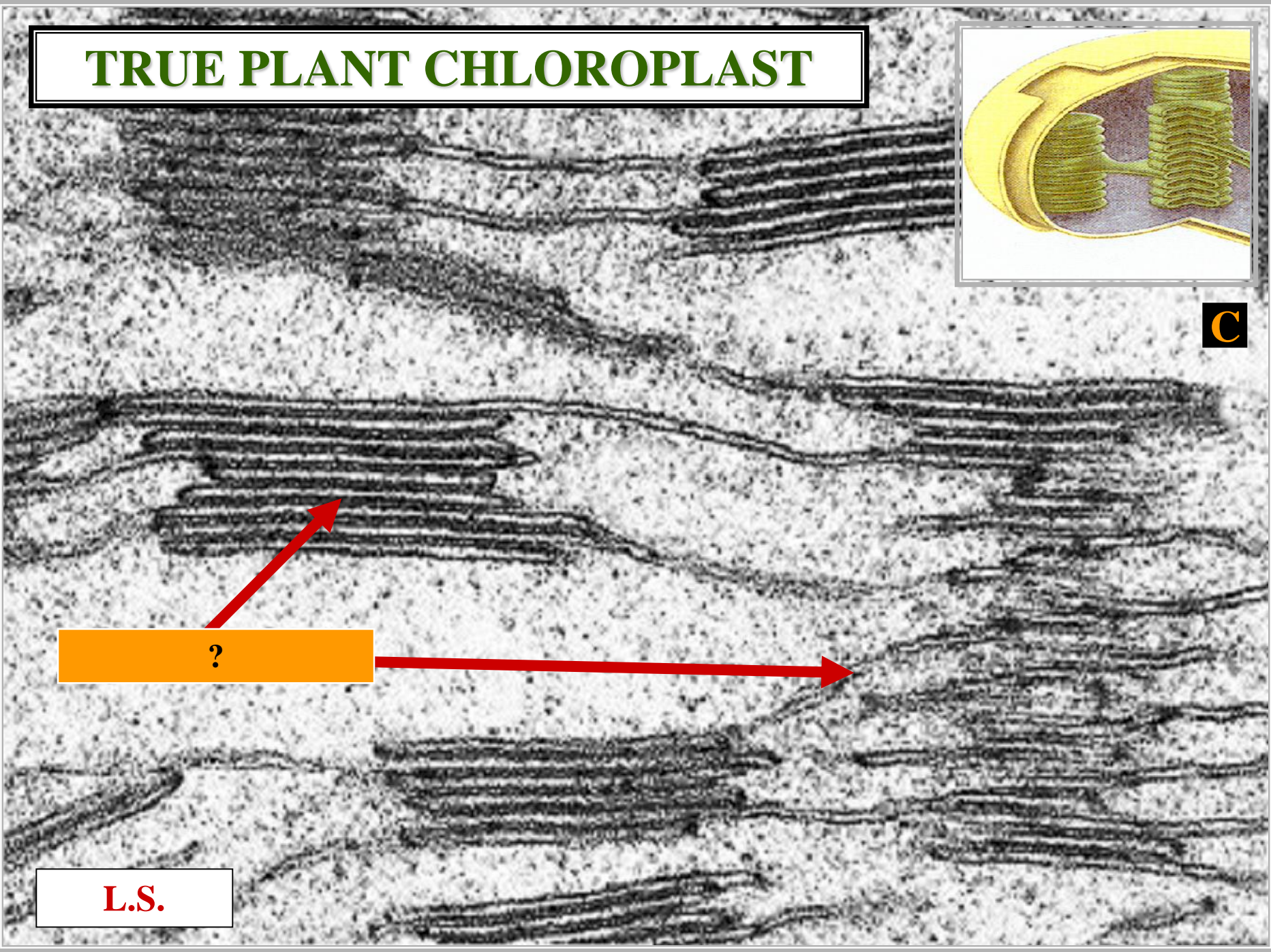
# TRUE PLANT CHLOROPLAST



C

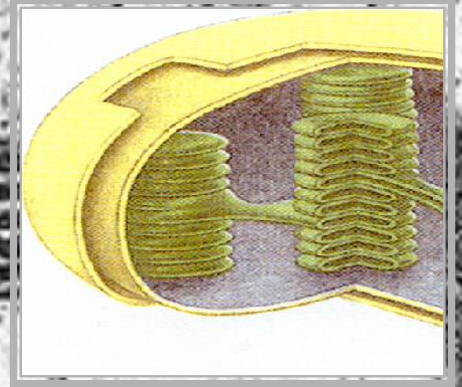
?

L.S.





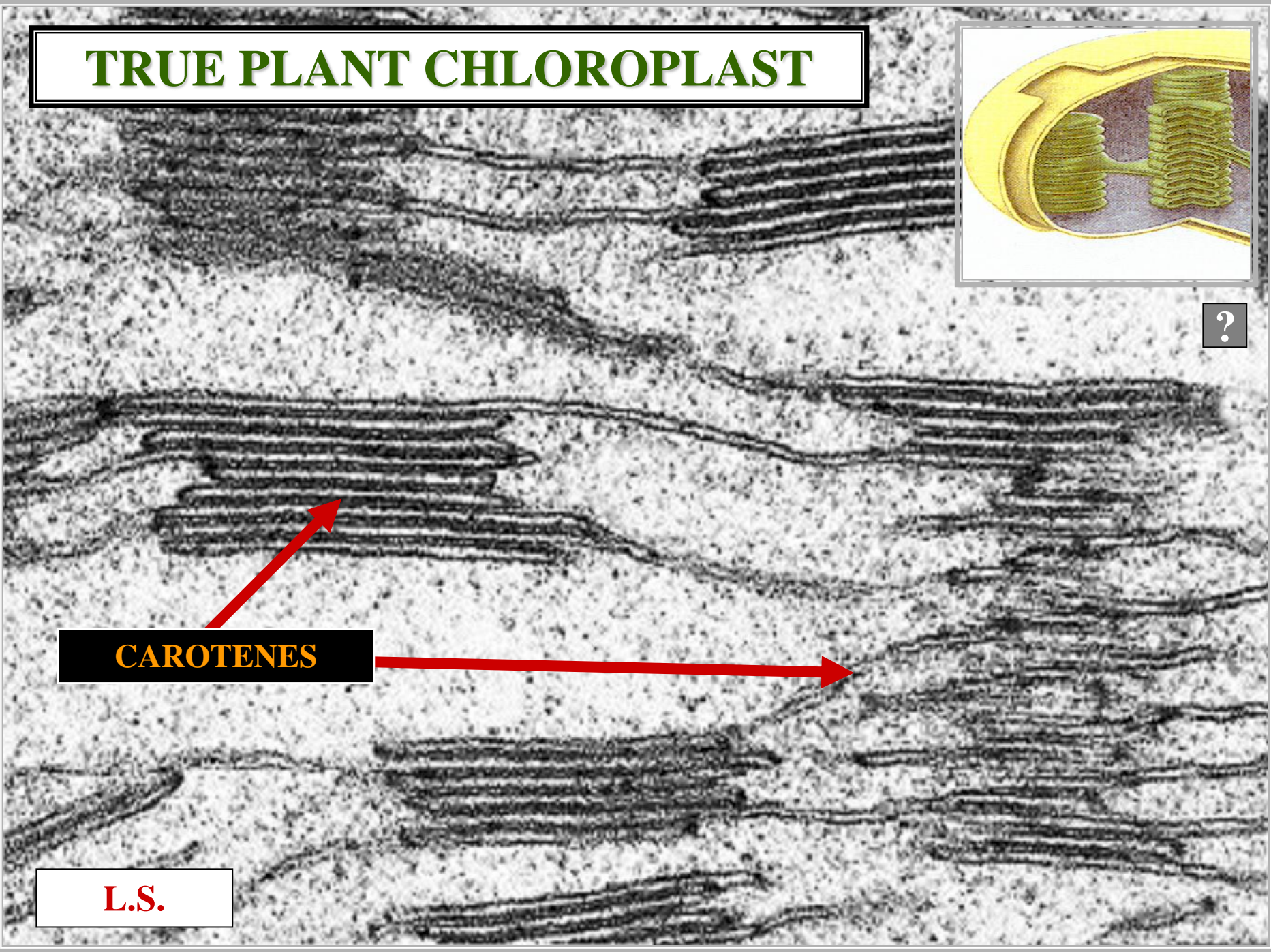
# TRUE PLANT CHLOROPLAST



?

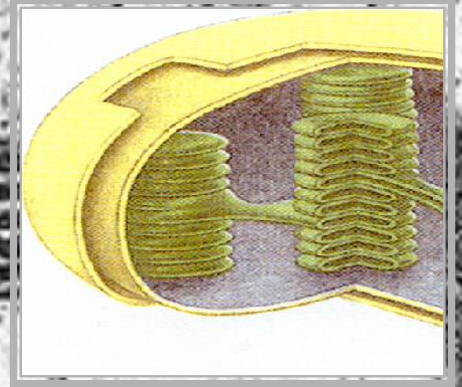
CAROTENES

L.S.





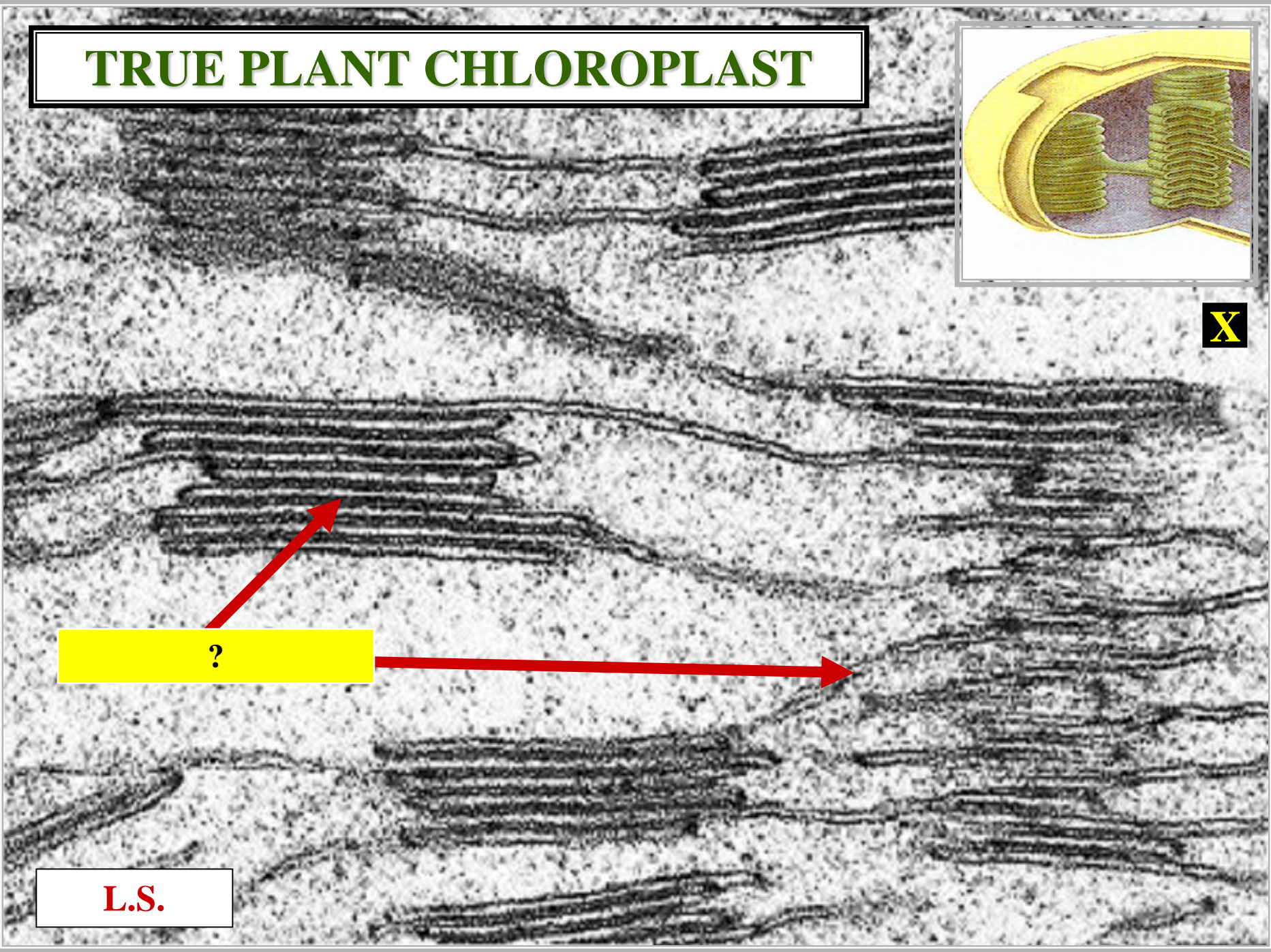
# TRUE PLANT CHLOROPLAST



X

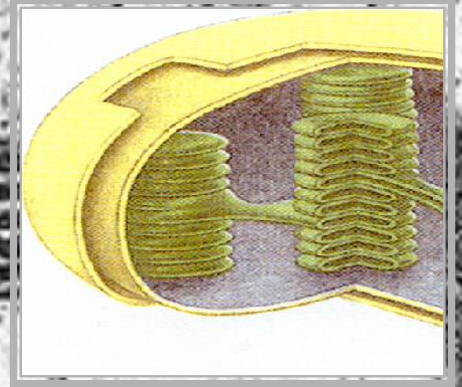
?

L.S.



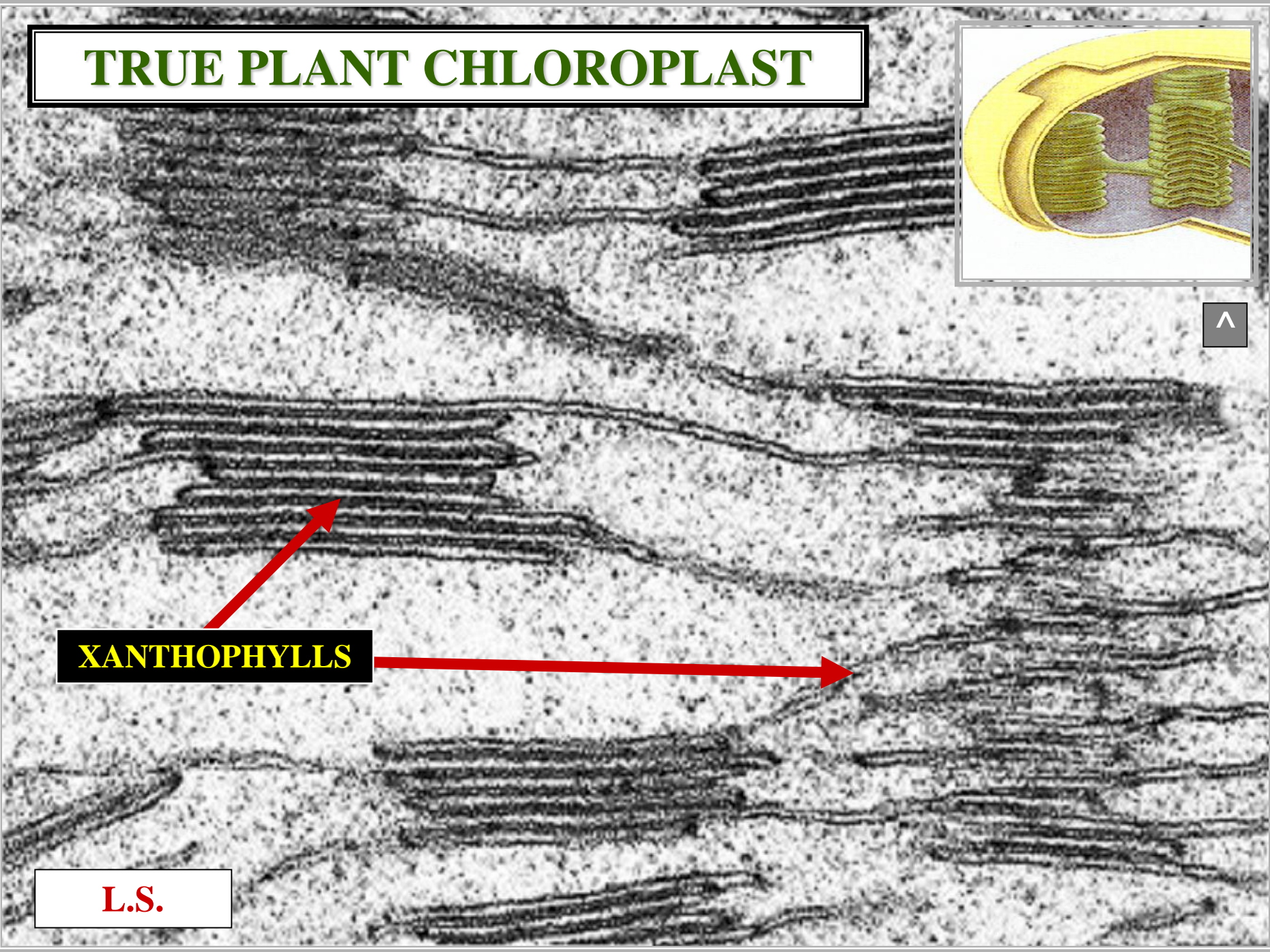


# TRUE PLANT CHLOROPLAST



**XANTHOPHYLLS**

**L.S.**





# CELL WALL COMPOSITION



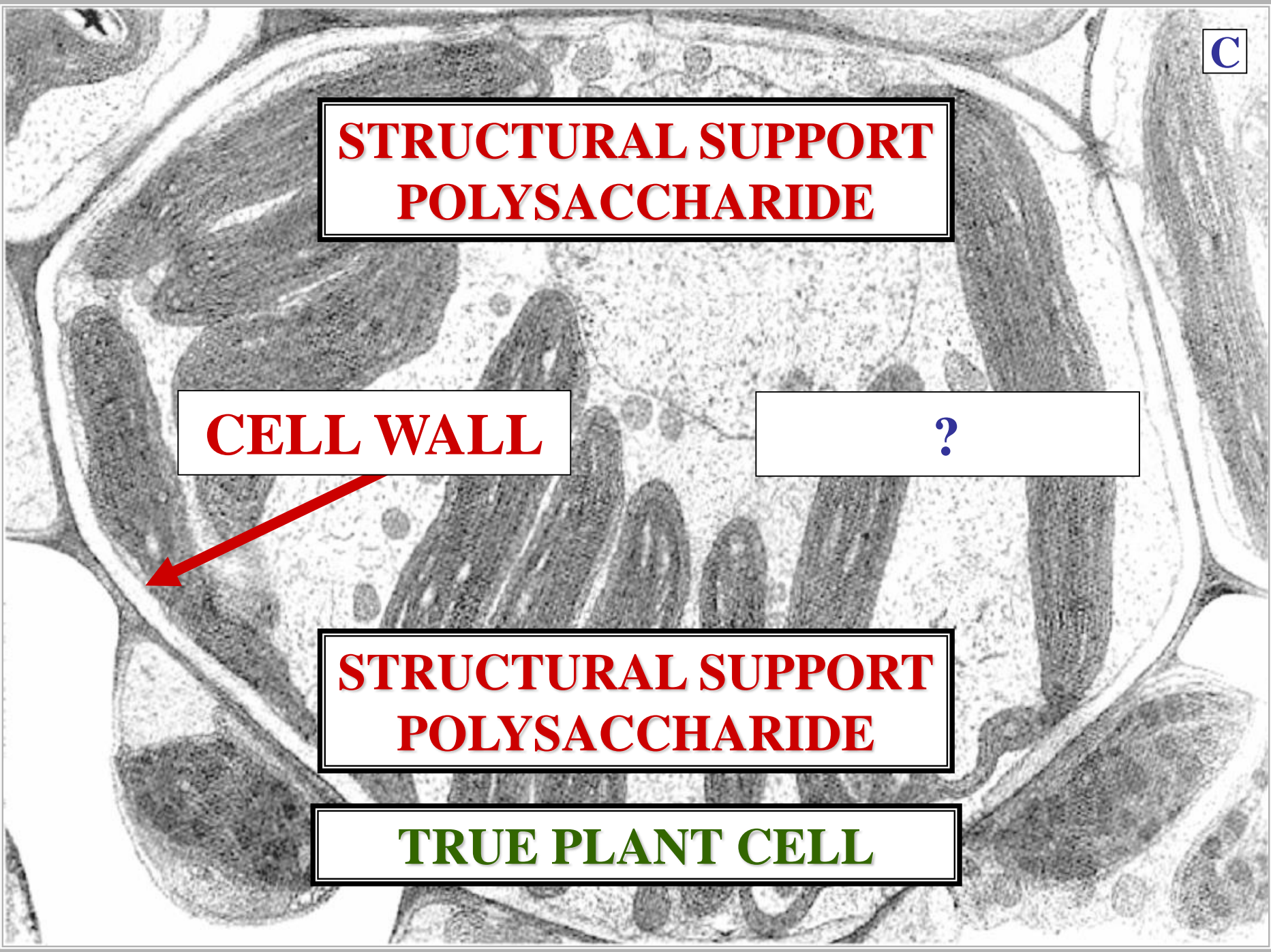
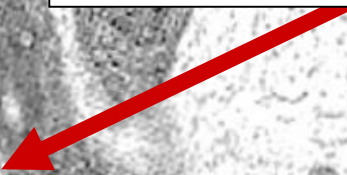
**STRUCTURAL SUPPORT  
POLYSACCHARIDE**

**CELL WALL**

?

**STRUCTURAL SUPPORT  
POLYSACCHARIDE**

**TRUE PLANT CELL**



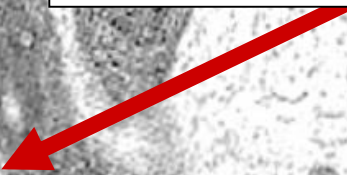




**CELLULOSE STRUCTURAL SUPPORT  
POLYSACCHARIDE**

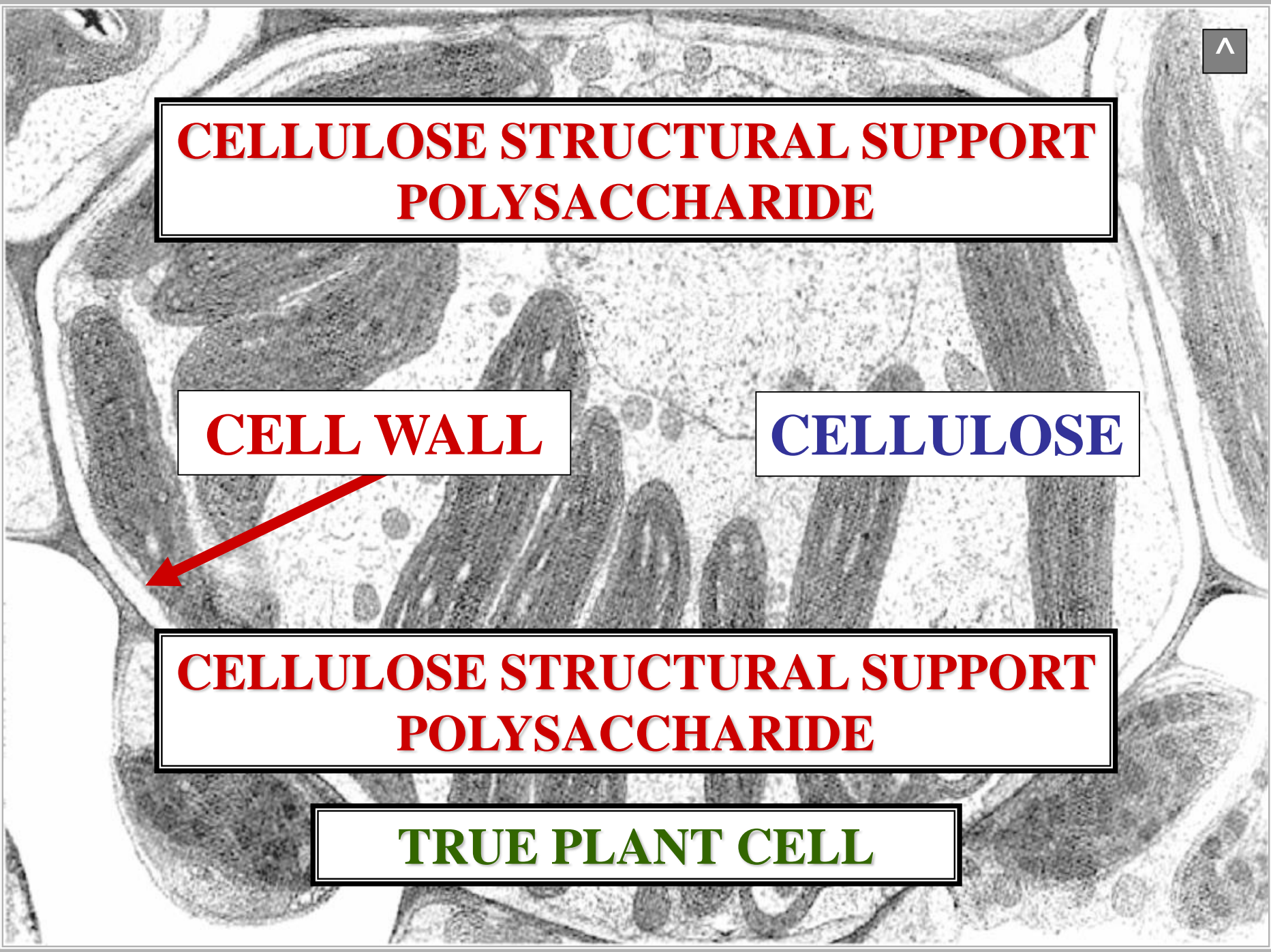
**CELL WALL**

**CELLULOSE**



**CELLULOSE STRUCTURAL SUPPORT  
POLYSACCHARIDE**

**TRUE PLANT CELL**



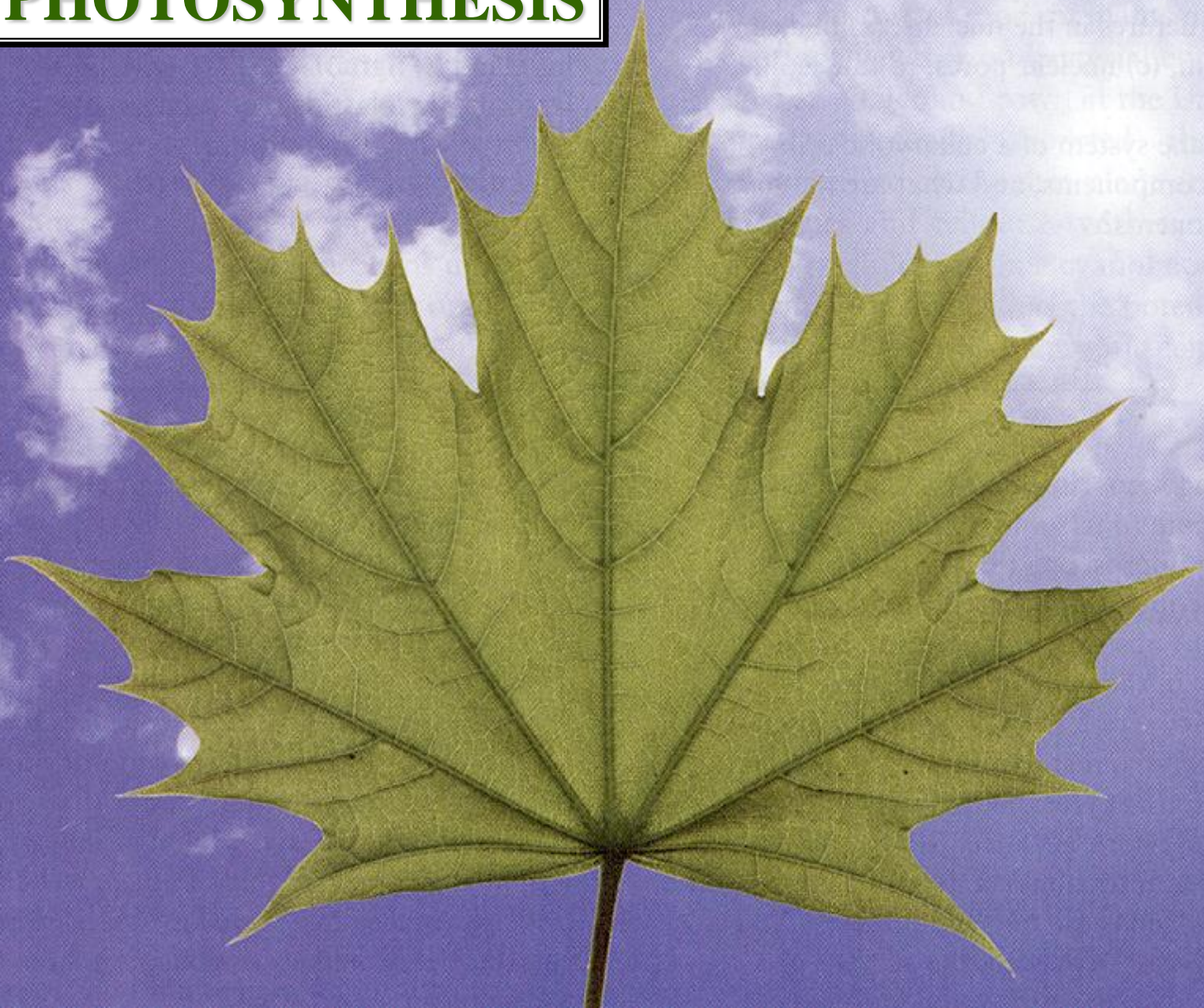


# FOOD RESERVE



# PHOTOSYNTHESIS

P





# PHOTOSYNTHESIS

S



WATER

CO<sub>2</sub>

**LIGHT ENERGY**

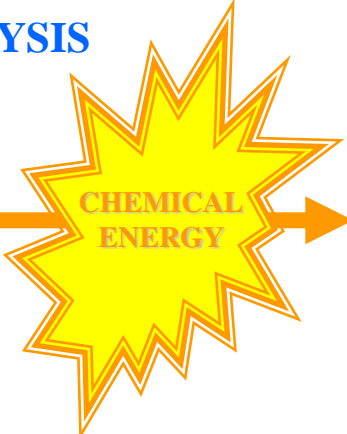
**PHOTO**

ATMOSPHERE

**E-** PHOTOLYSIS



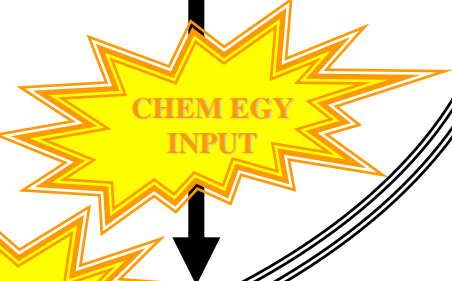
**LT RXT**  
**THYLAKOID**



**DK RXT**  
**STROMA**

**CHLOROPLAST**

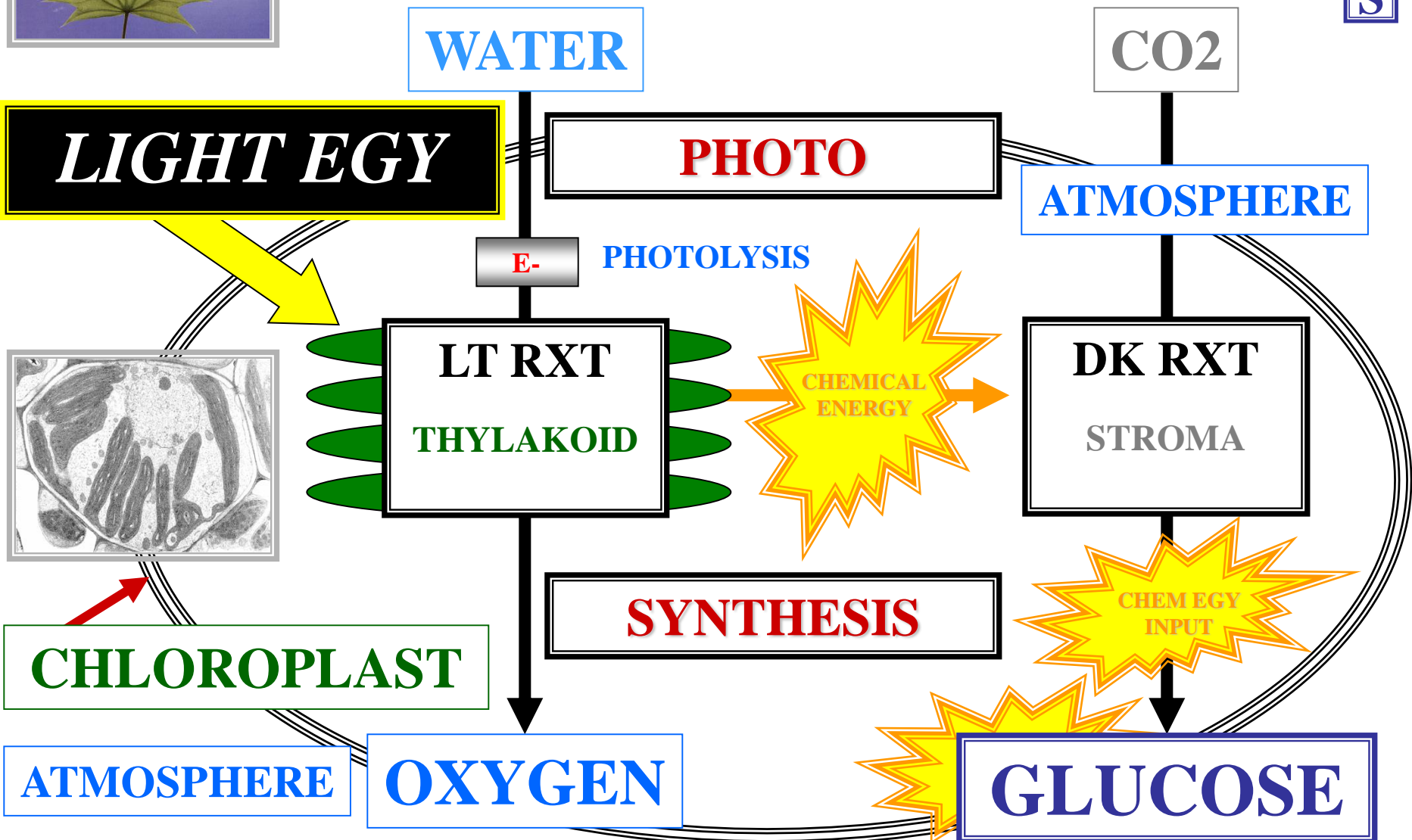
**SYNTHESIS**



ATMOSPHERE

**OXYGEN**

**GLUCOSE**



# PHOTOSYNTHESIS



WATER

CO<sub>2</sub>

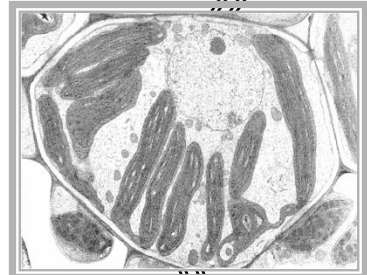
**LIGHT ENERGY**

**PHOTO**

ATMOSPHERE

E-

PHOTOLYSIS



LT RXT

THYLAKOID

CHEMICAL ENERGY

DK RXT

STROMA

CHLOROPLAST

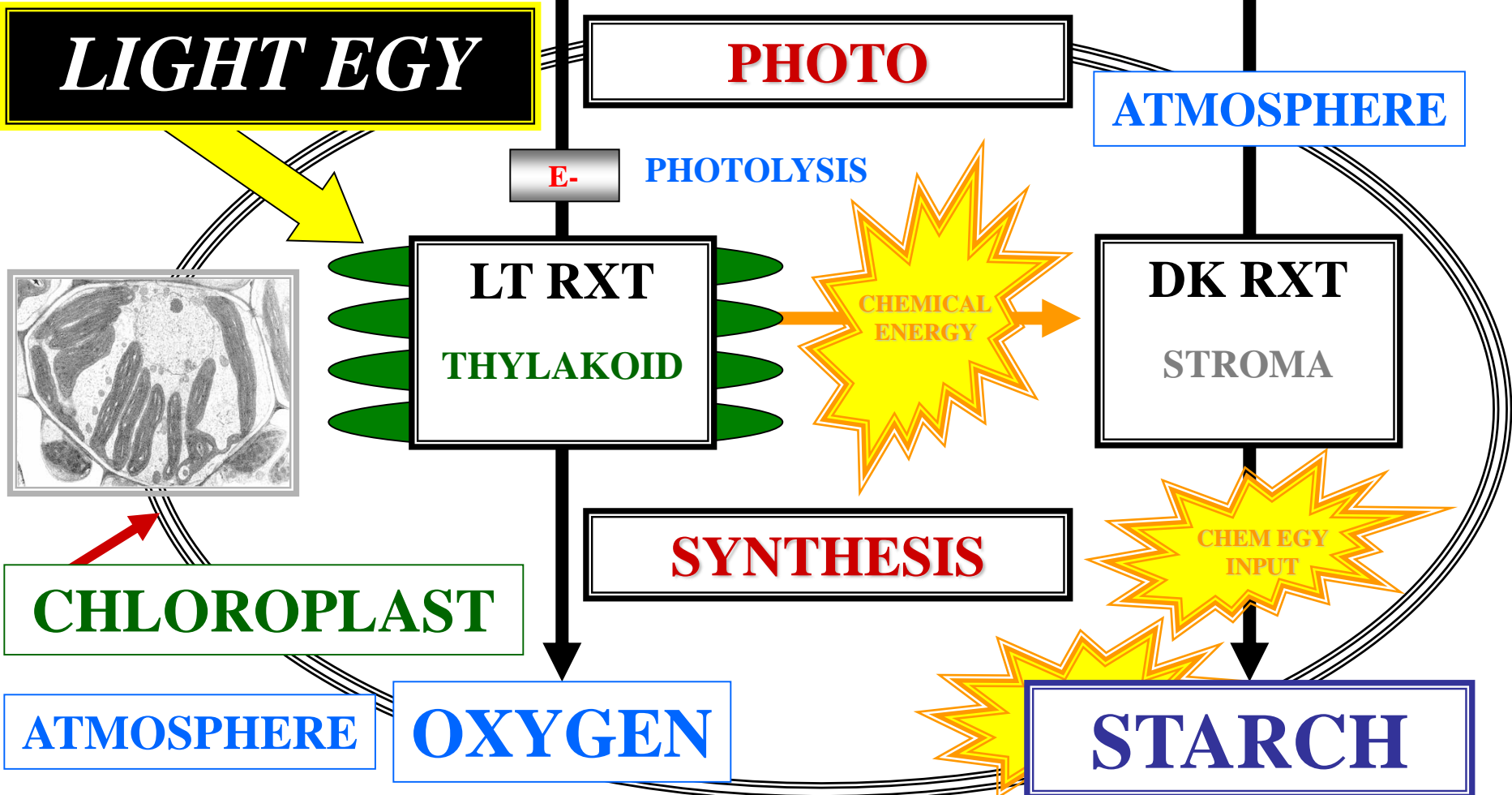
**SYNTHESIS**

CHEMICAL ENERGY INPUT

ATMOSPHERE

OXYGEN

STARCH



A transmission electron micrograph of a plant cell. The cell is roughly rectangular with a thick cell wall. Inside, there are several large, dark, electron-dense granules, which are starch granules. The granules have a somewhat layered or concentric appearance. The cytoplasm is filled with various organelles, including what appears to be a nucleus and some smaller vesicles. The overall structure is typical of a parenchyma cell in a storage organ like a root or tuber.

**STARCH FOOD RESERVE  
POLYSACCHARIDE**

**STARCH = AMYLOSE**

**STARCH FOOD RESERVE  
POLYSACCHARIDE**

**TRUE PLANT CELL**



# **KINGDOM: PLANTAE**

## **CHARACTERS**

### **SUMMARY**

**PRIMARY PSYN PIGMENTS: CHL A & CHL B**

**SECONDARY PSYN PIGMENTS: CAROTENOIDS**

**CELL WALL COMPOSITION: CELLULOSE**

**FOOD RESERVE: STARCH**

# **KINGDOM: PLANTAE**

## **CHARACTERS**

### **SUMMARY**



# VASCULAR PLANT EVOLUTION



**~900  
MILLION YEARS**



~900 MILLION YEARS AGO



# CHLOROPHYTA EVOLVE

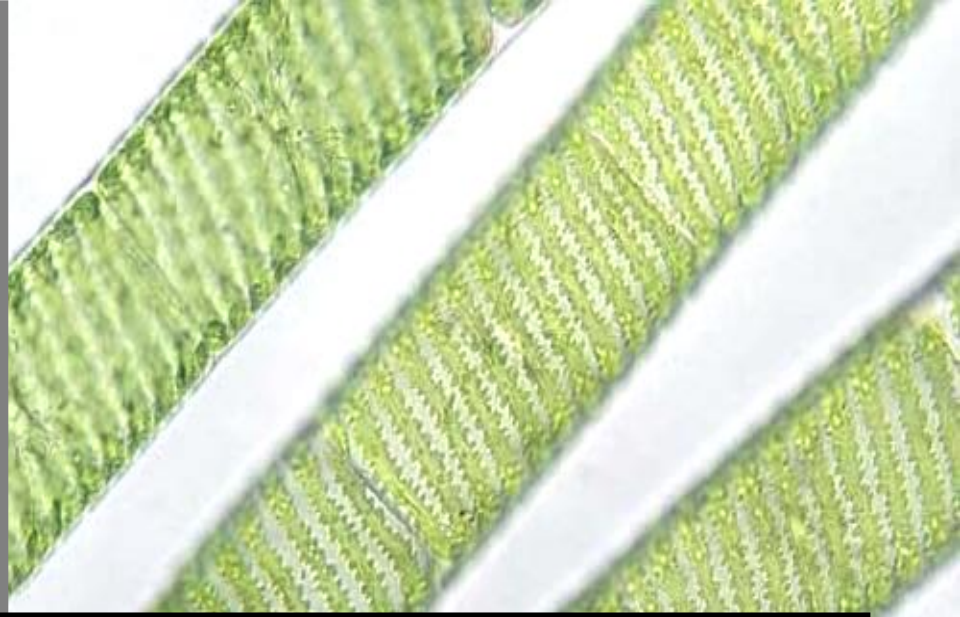
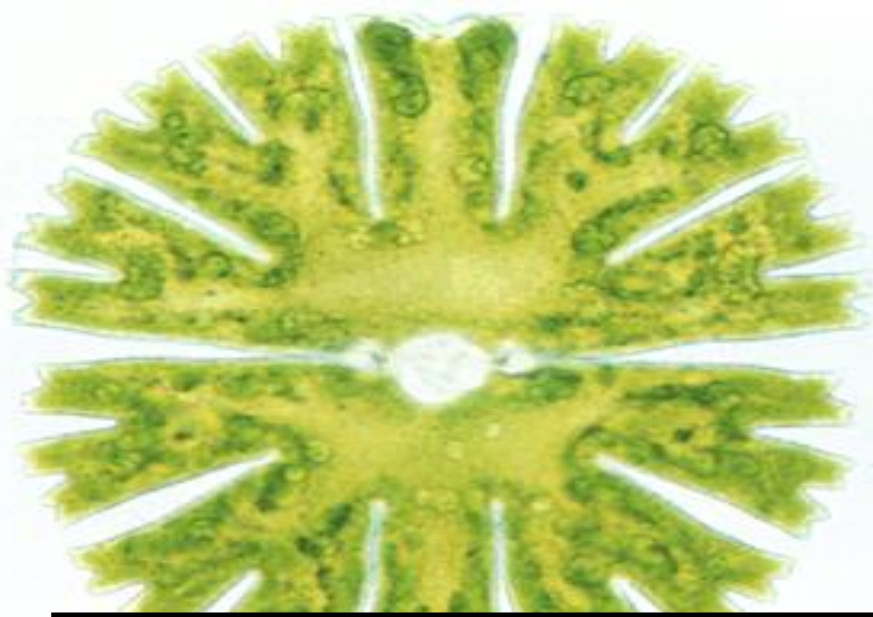




# PHYLUM CHLOROPHYTA

# COMMON NAMES





# CHLOROPHYTES

