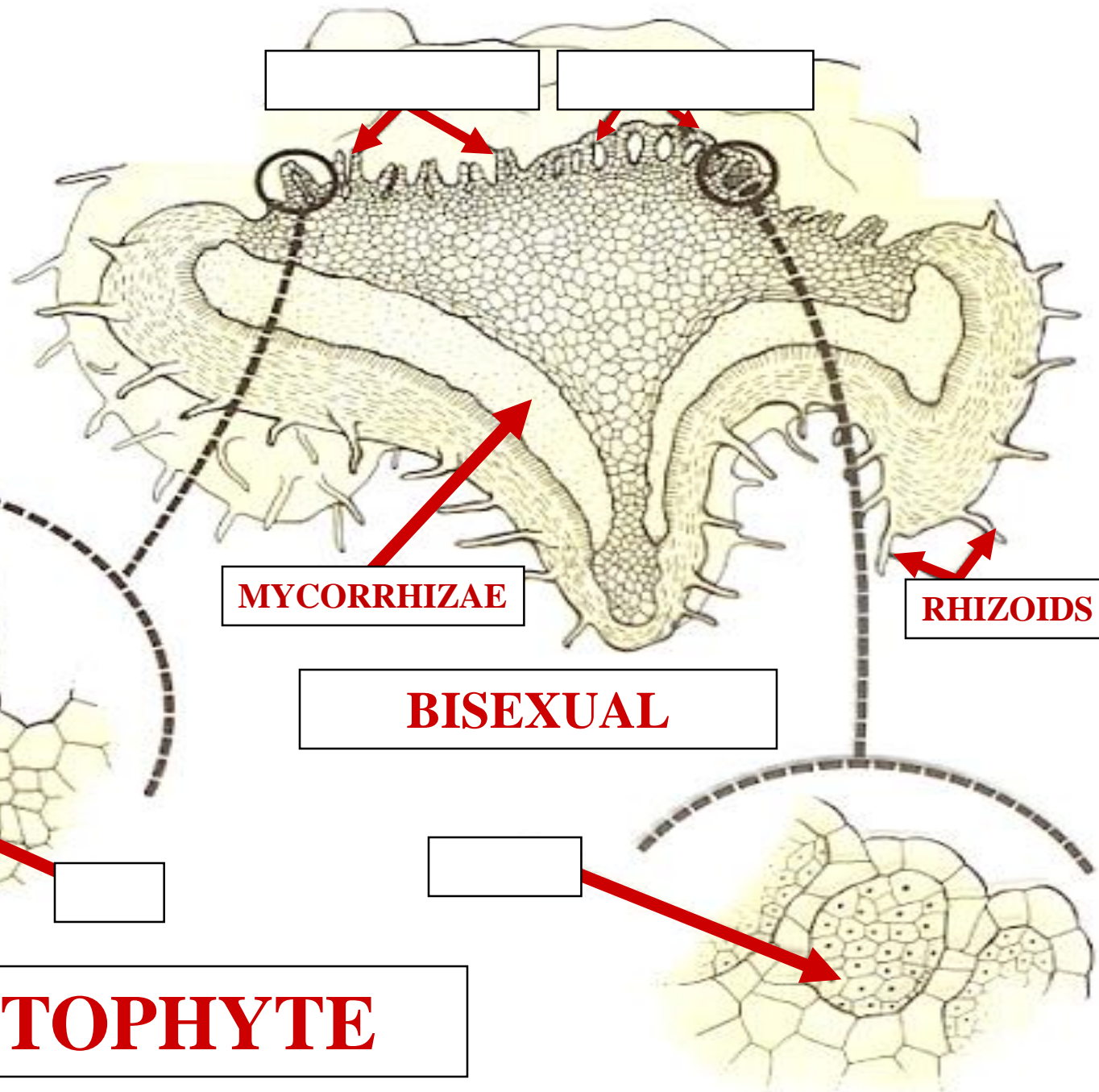


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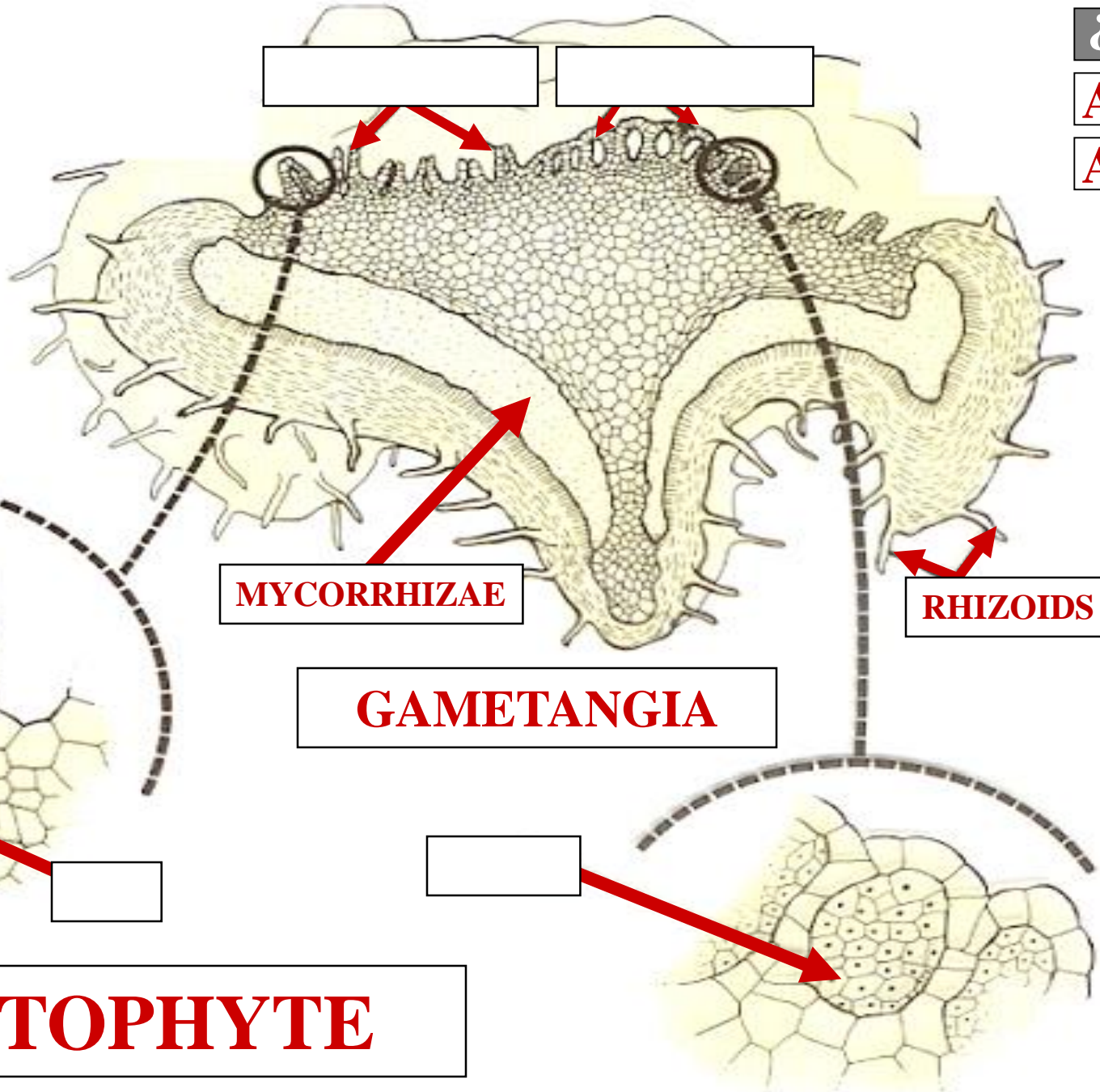


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RHIZOIDS

BISEXUAL

GAMETOPHYTE



MYCORRHIZAE

RHIZOIDS

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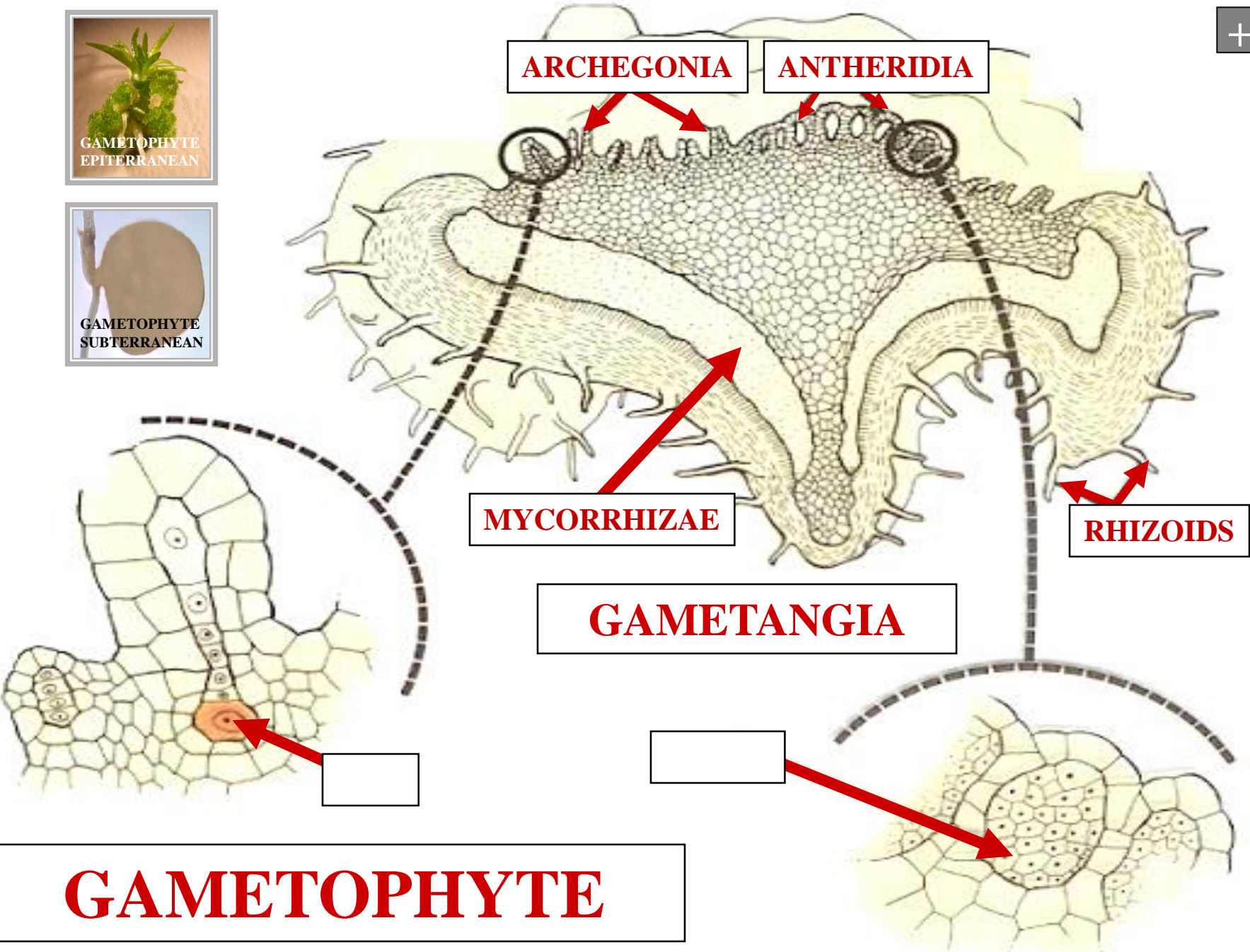
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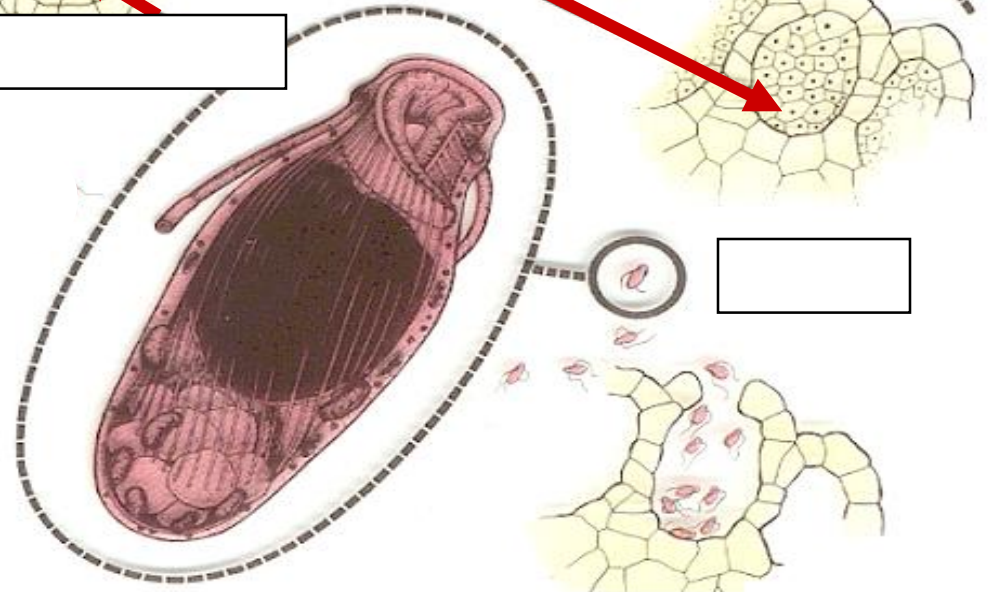
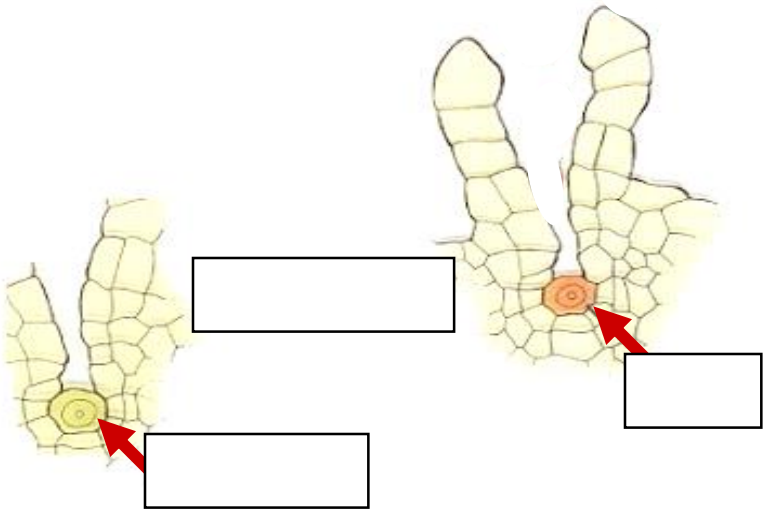
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GAMETOPHYTE

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ANTHERIDIUM



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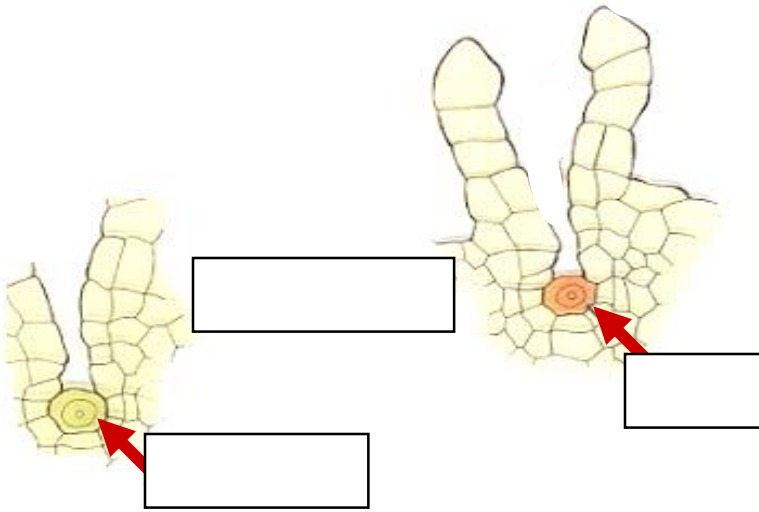
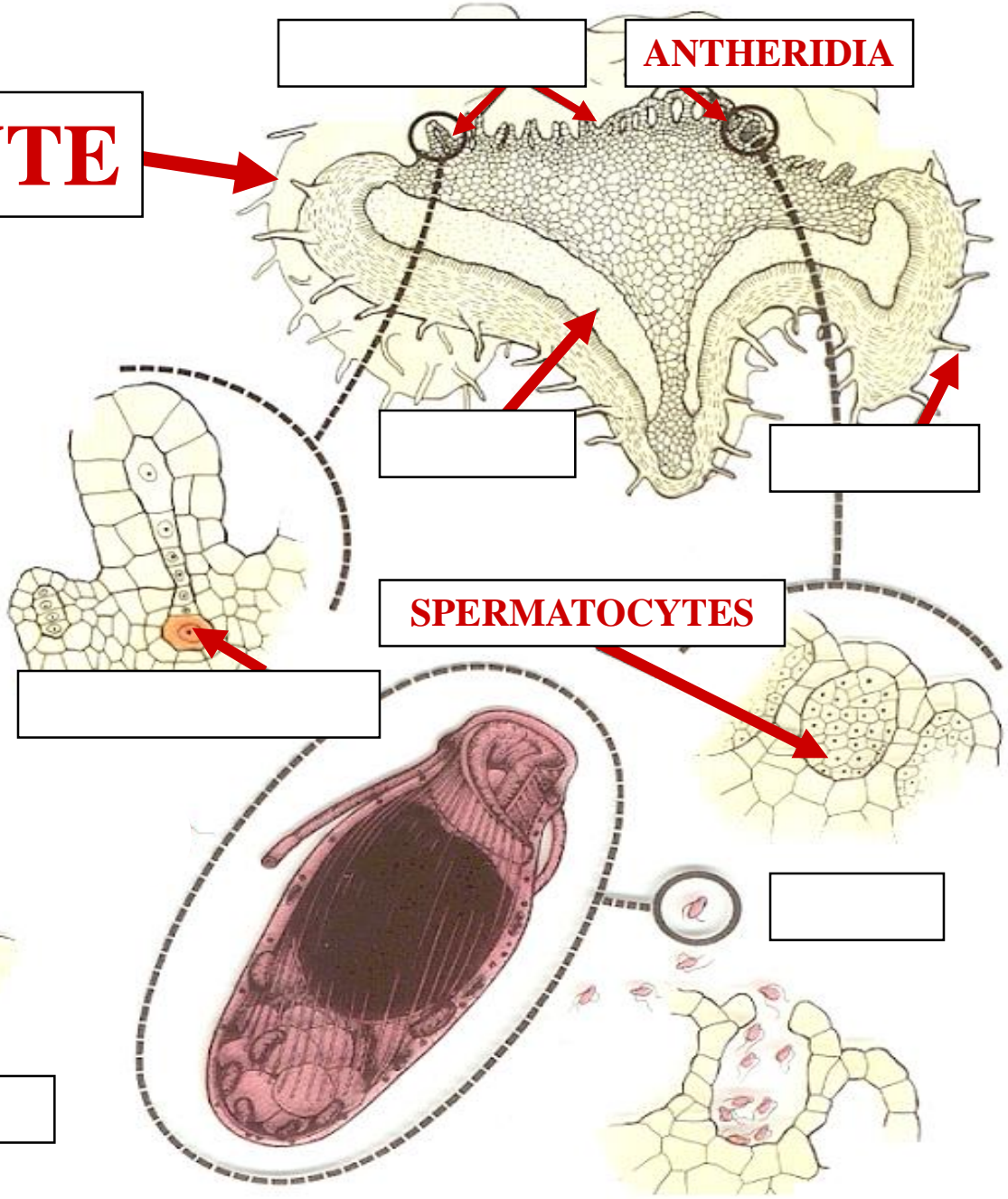
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ANTHERIDIA

SPERMATOCYTES



GAMETOPHYTE

ANTHERIDIA

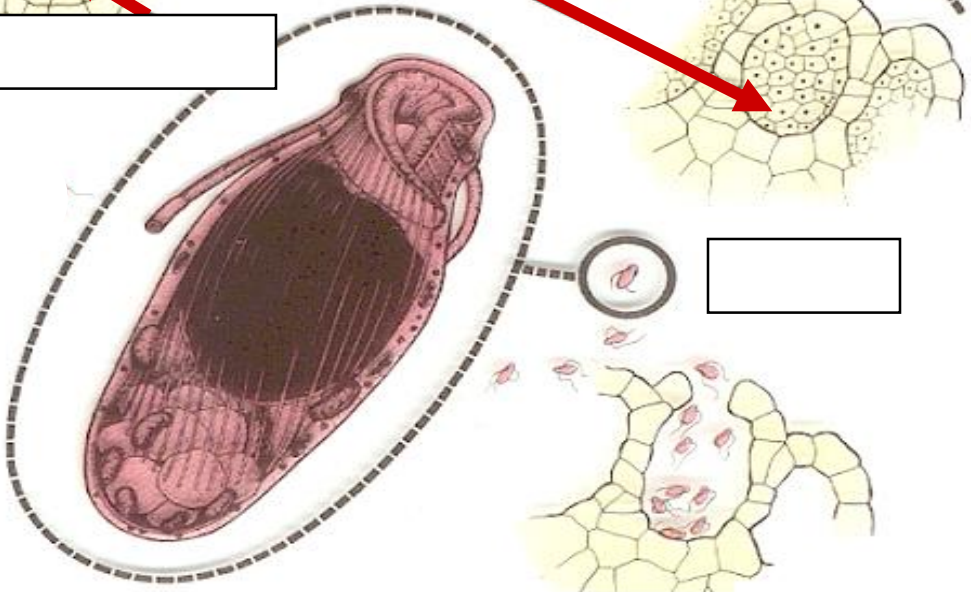
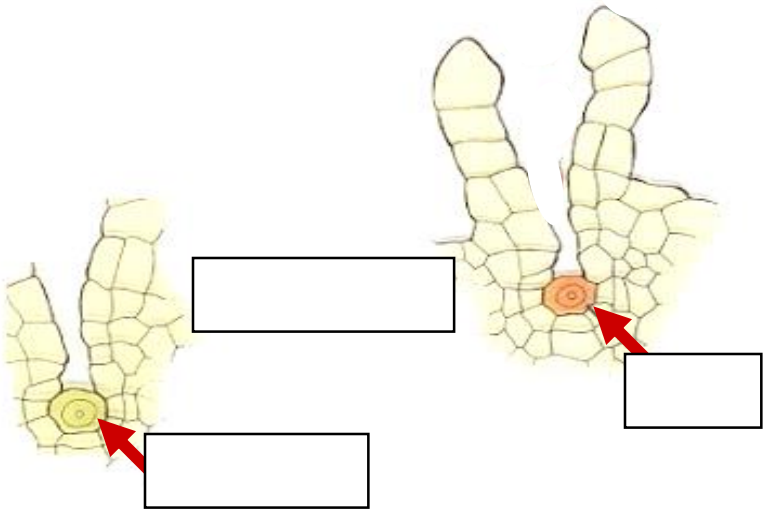
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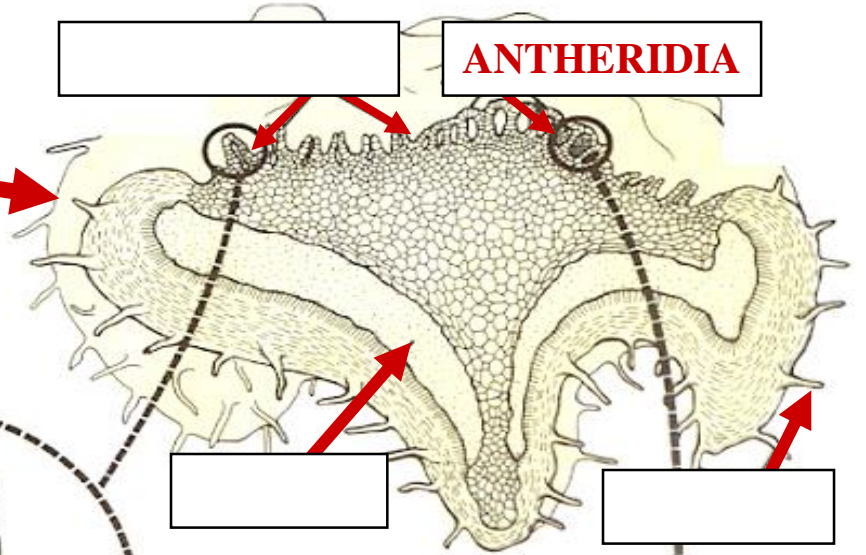
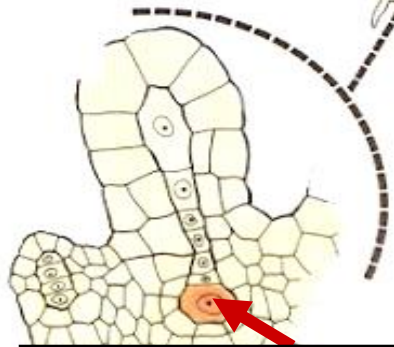
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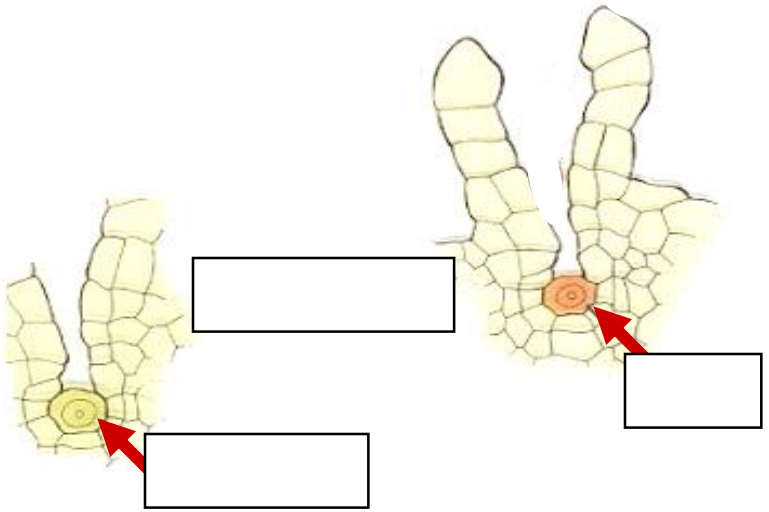
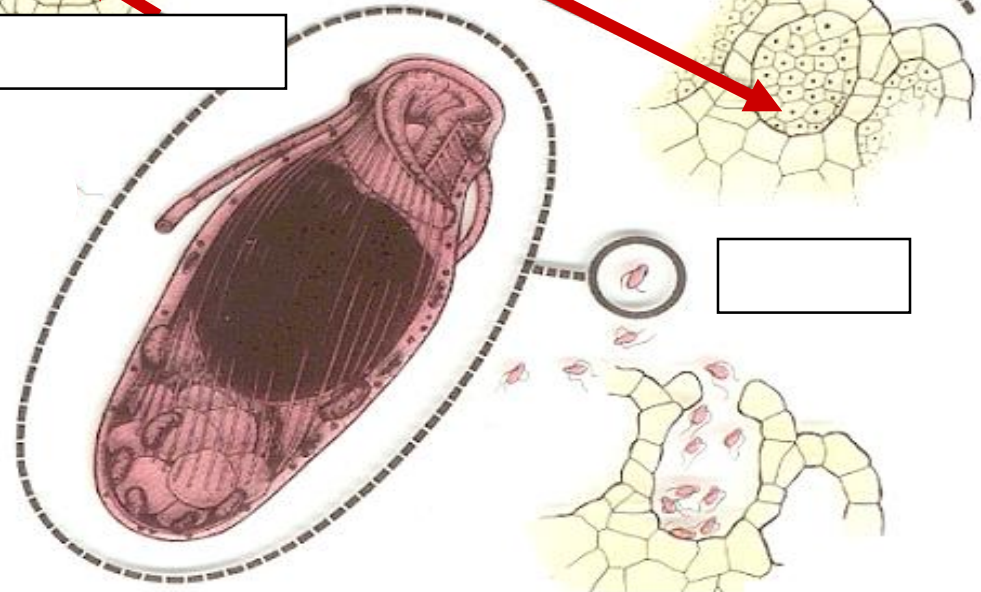


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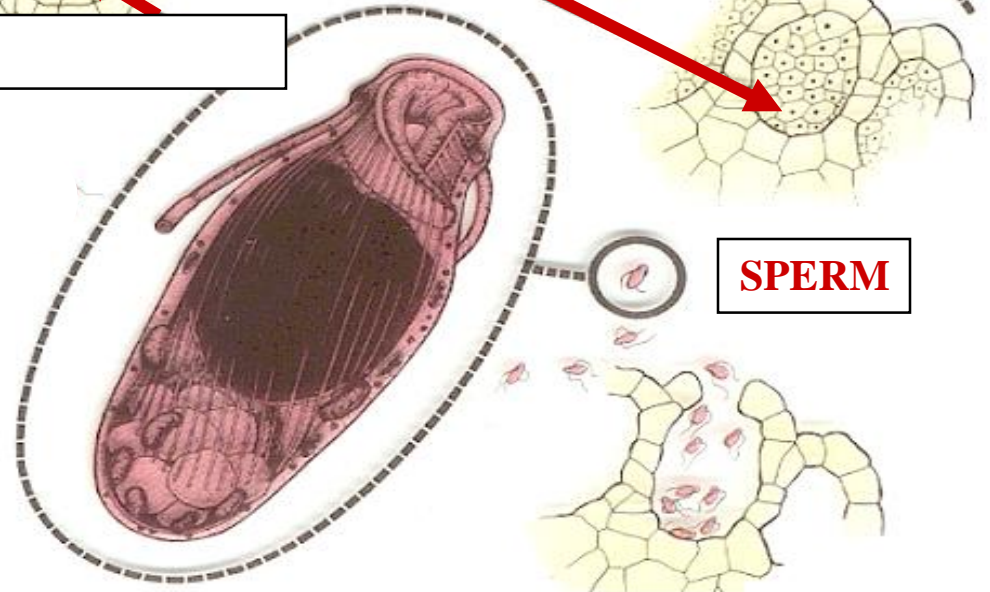
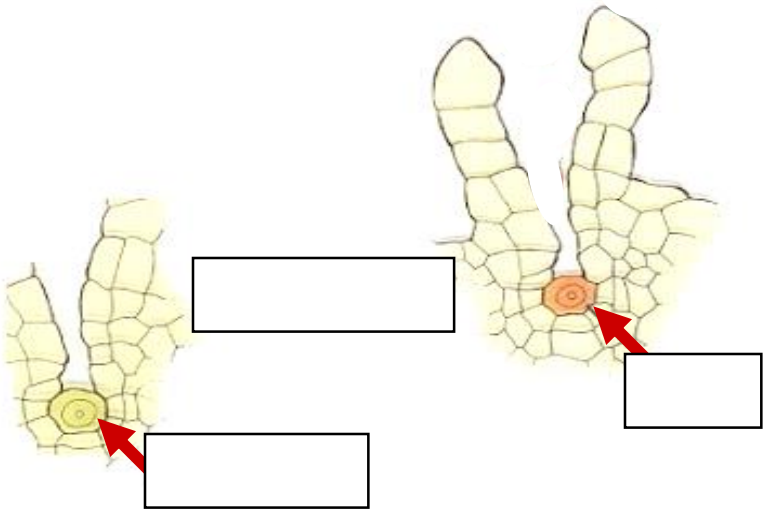
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SPERM

SPERM



GAMETOPHYTE

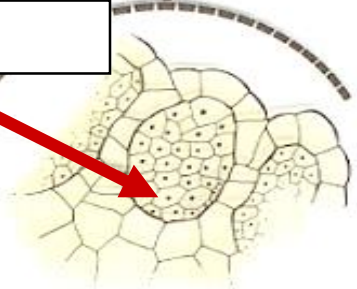
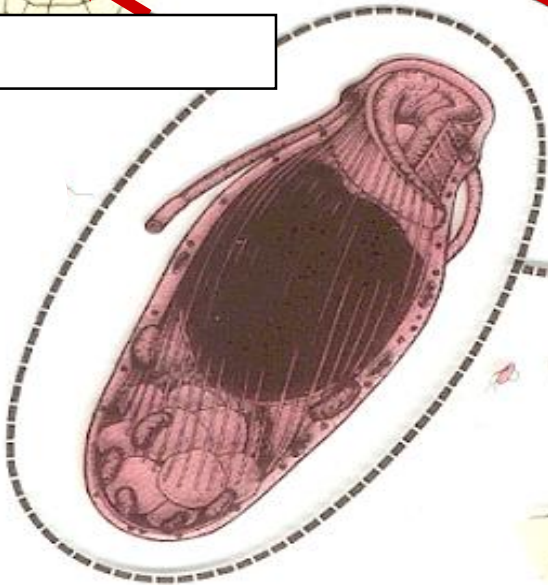
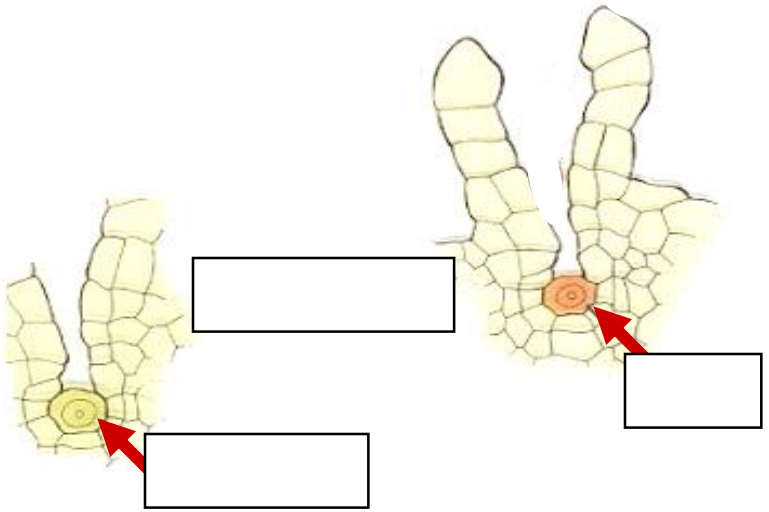
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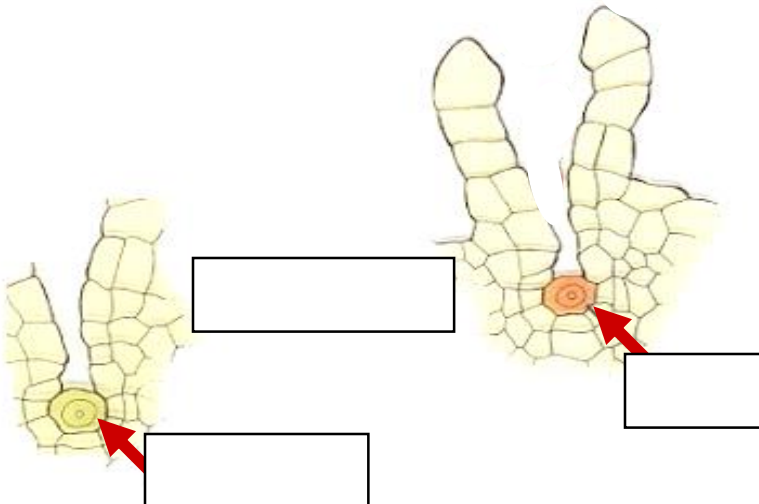
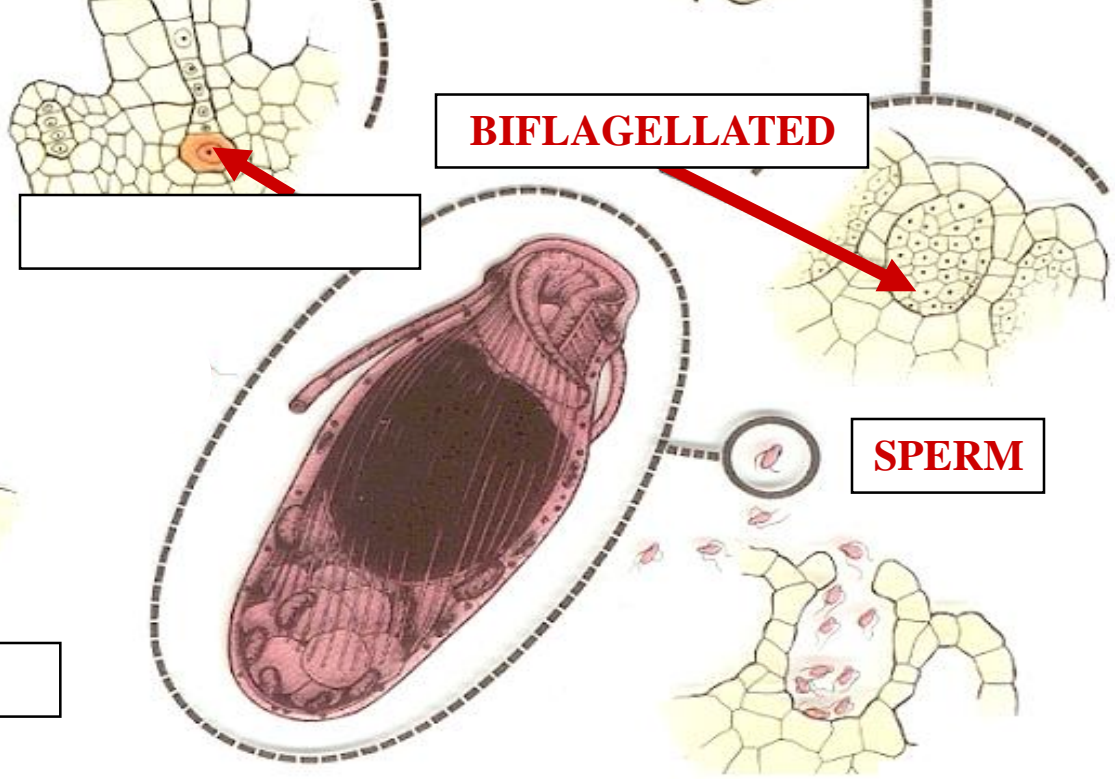
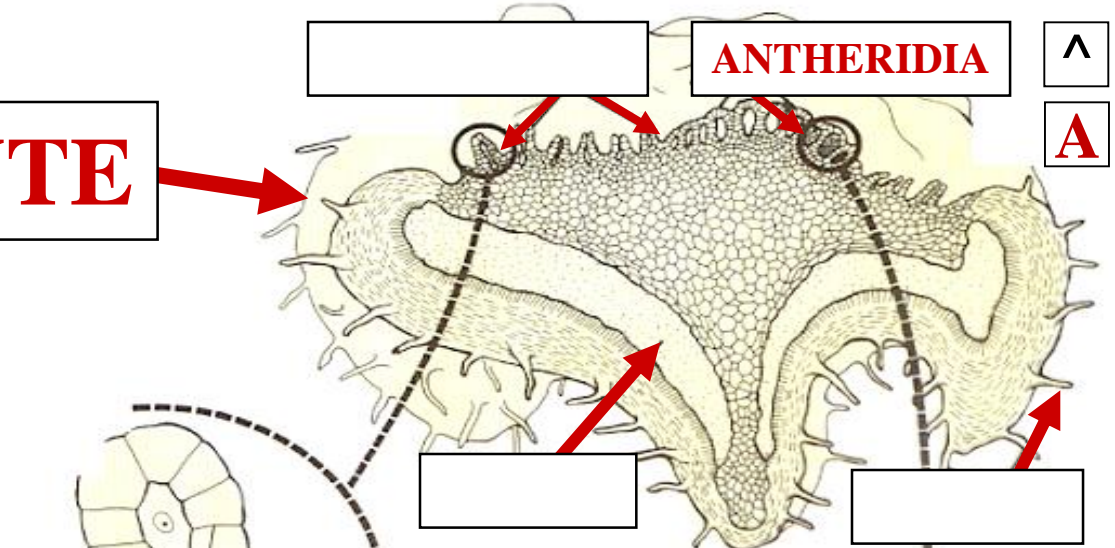
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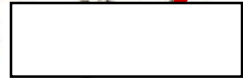
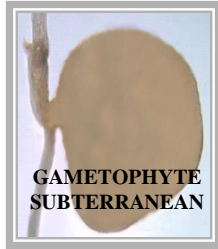
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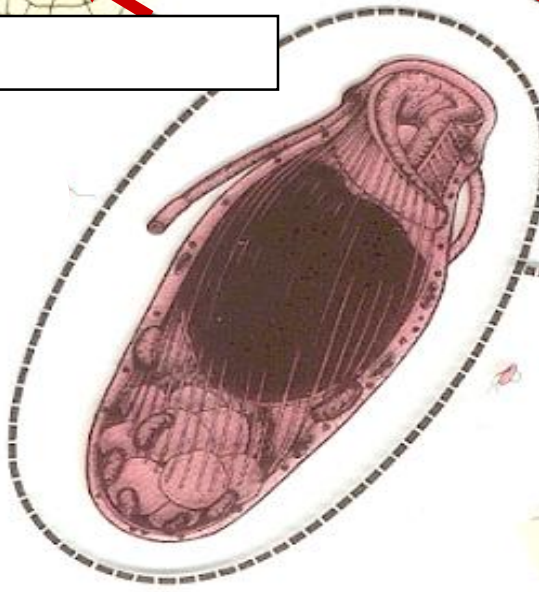
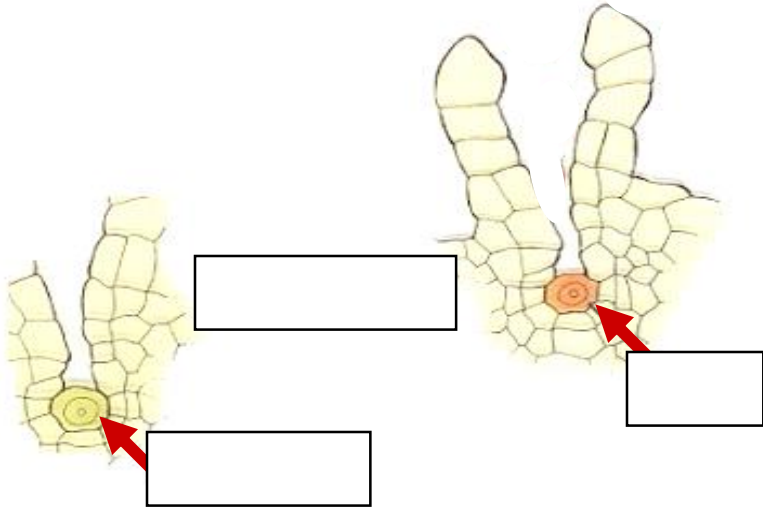
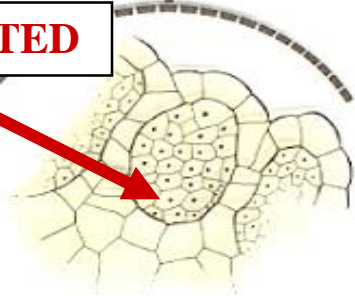
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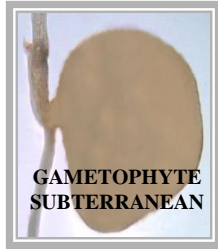
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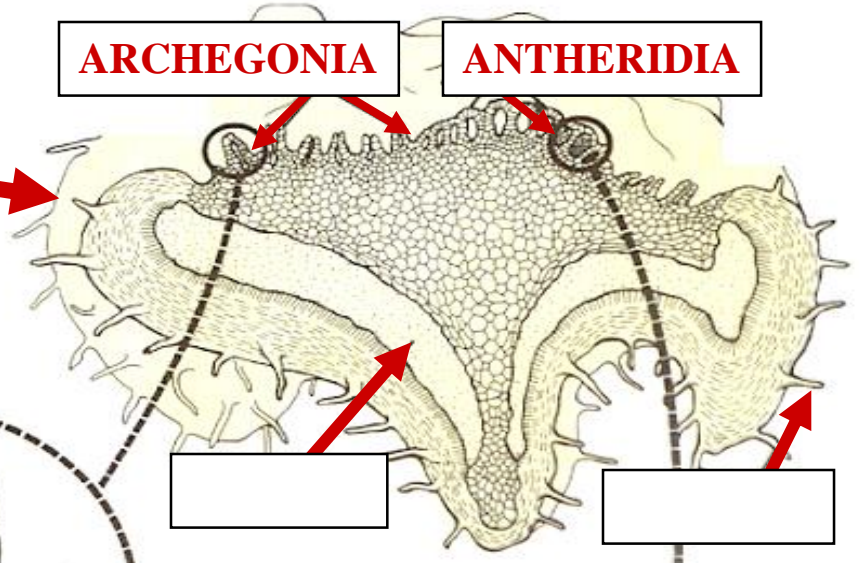
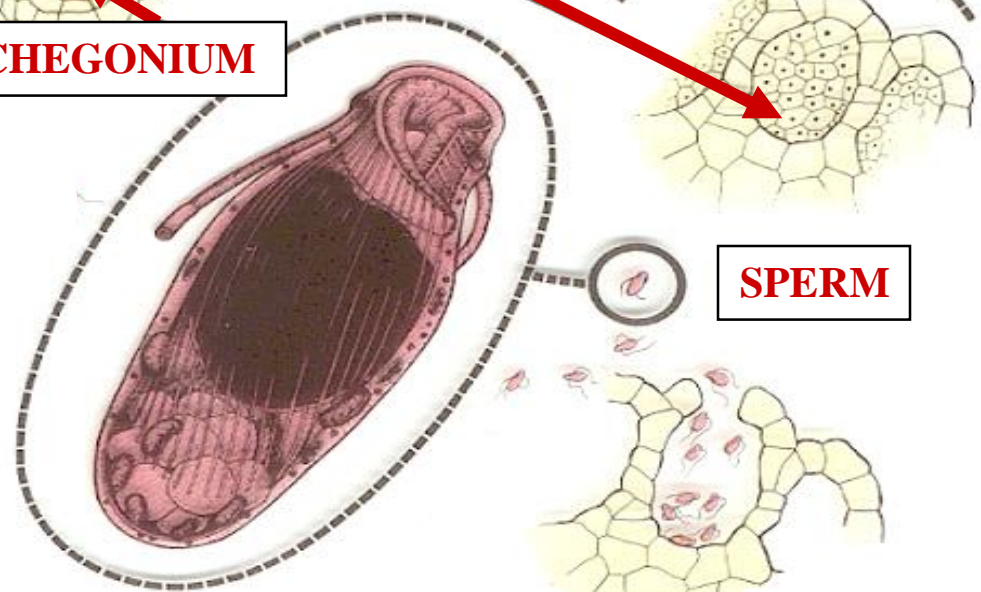
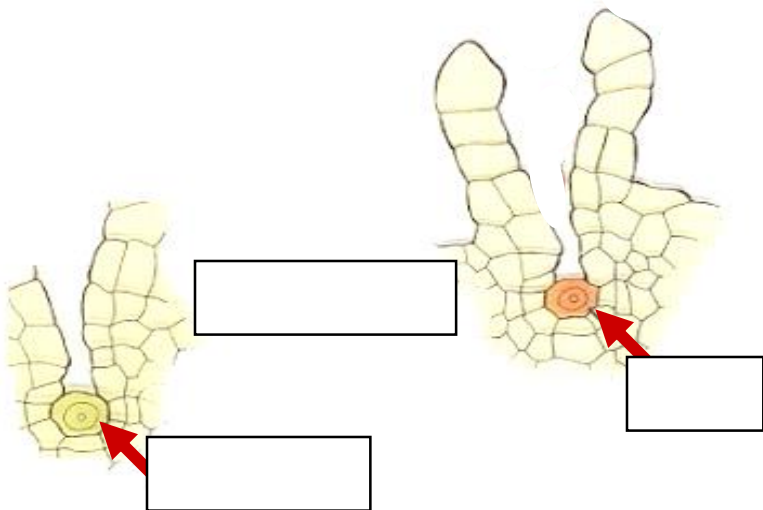
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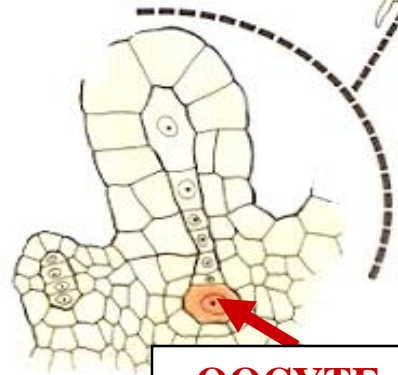
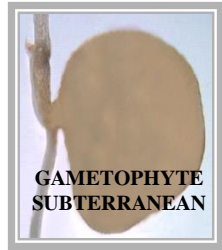
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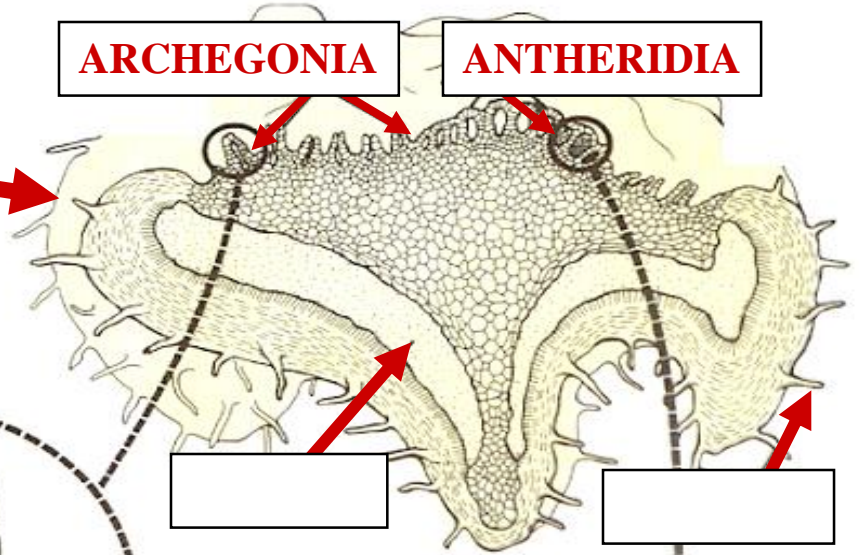
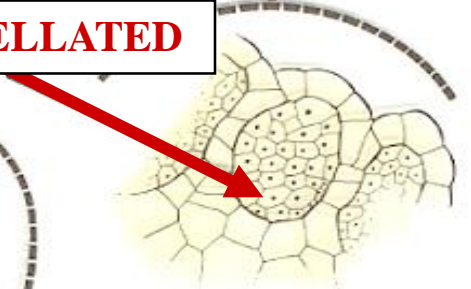
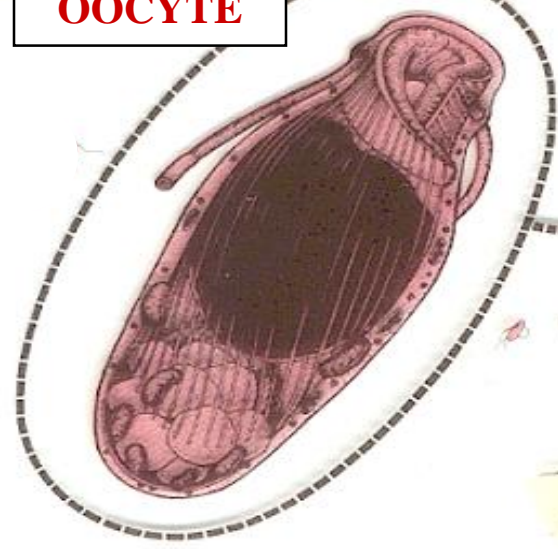
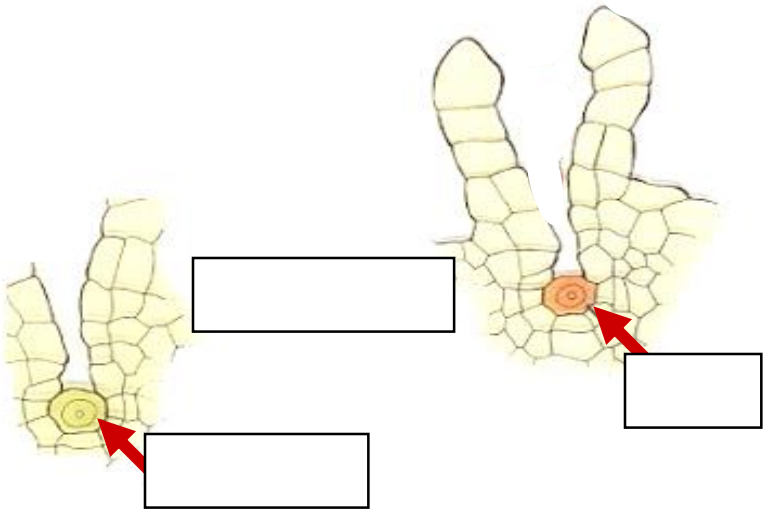
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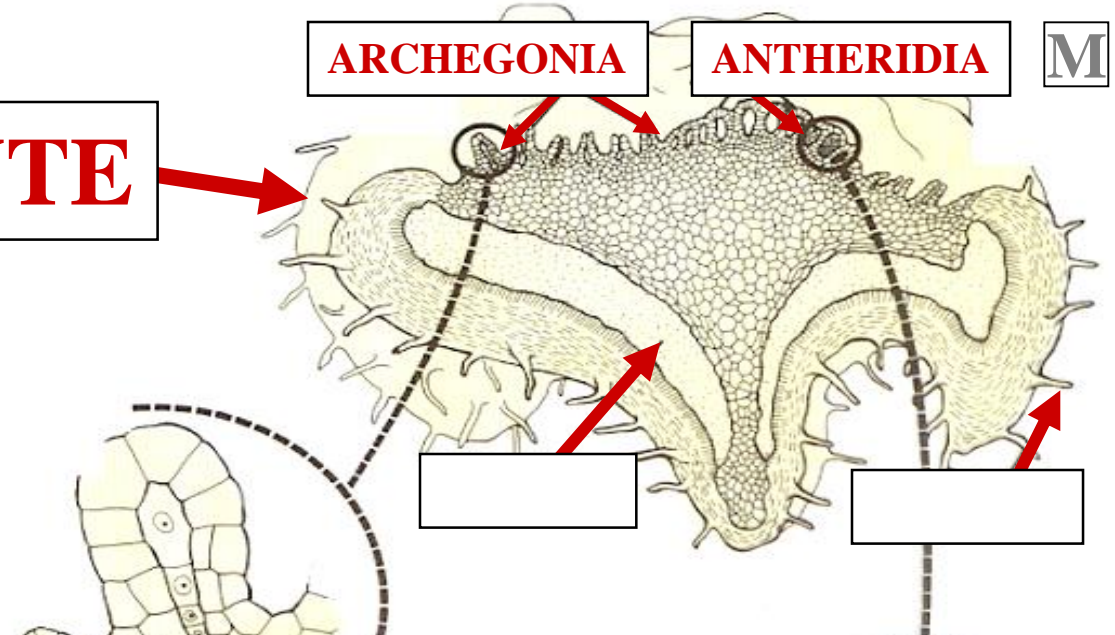


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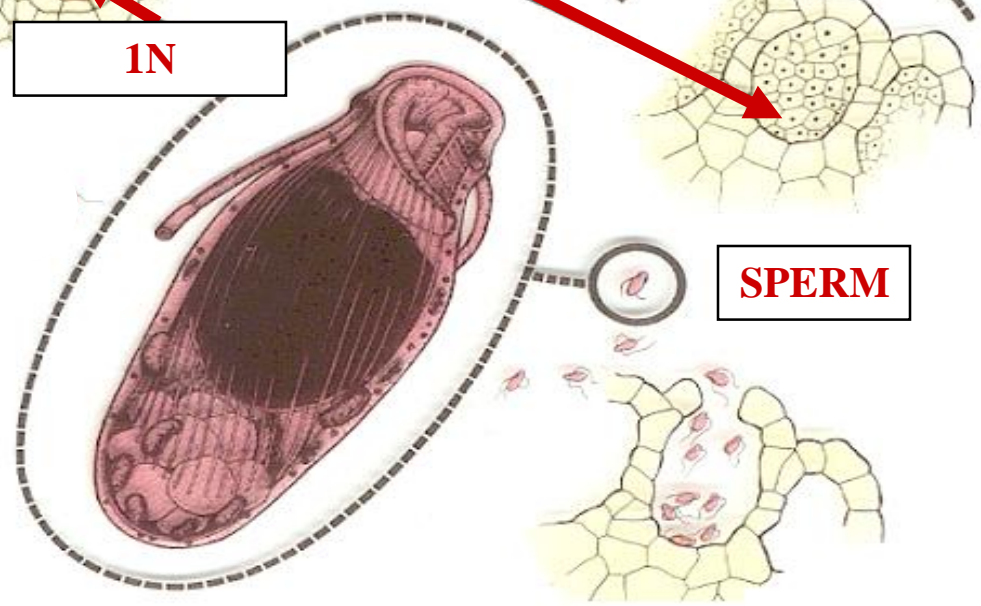
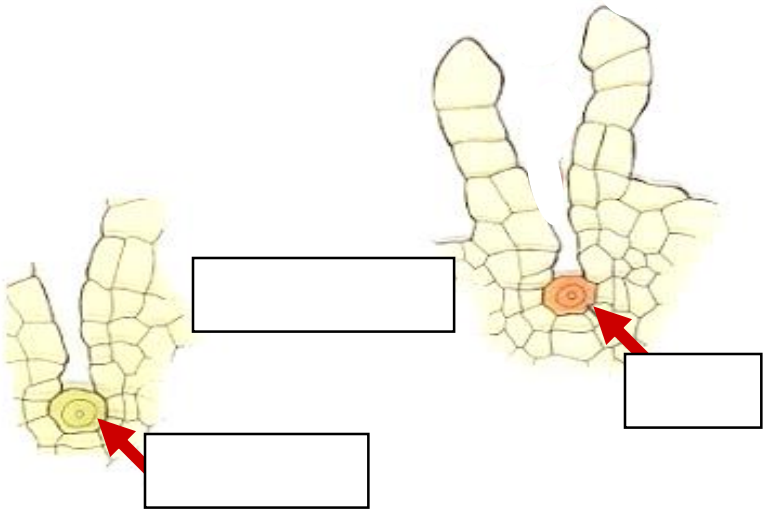
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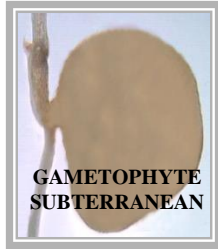
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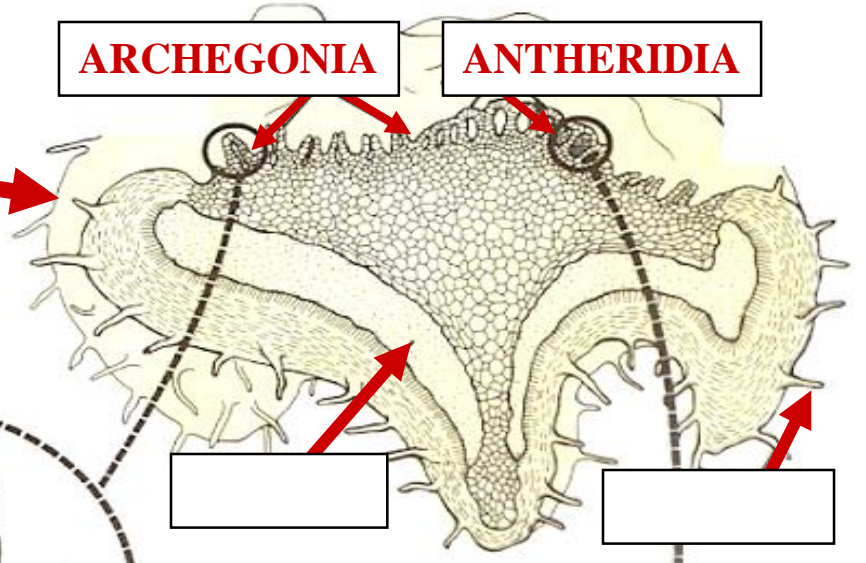
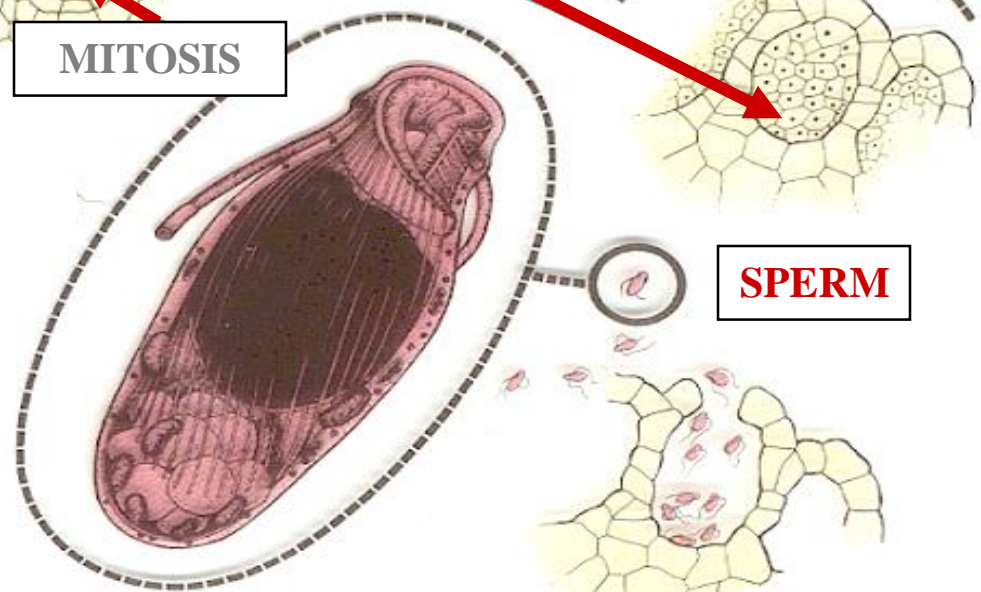
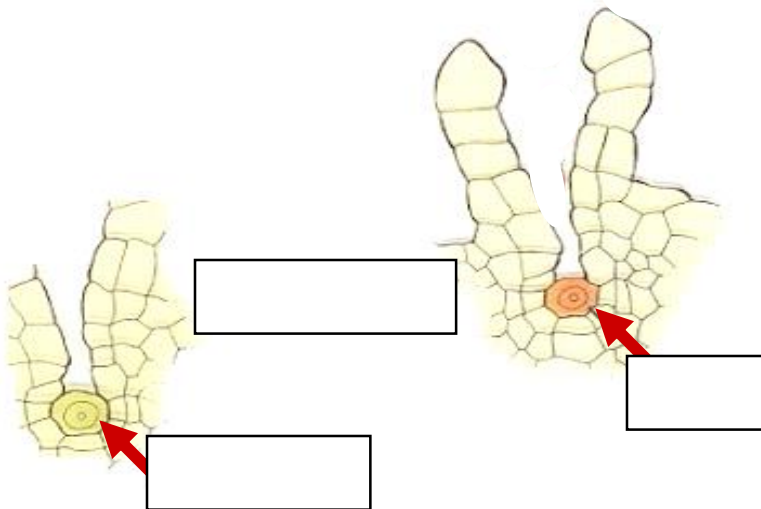
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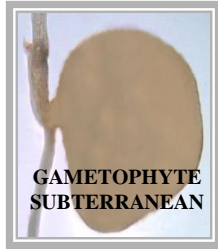
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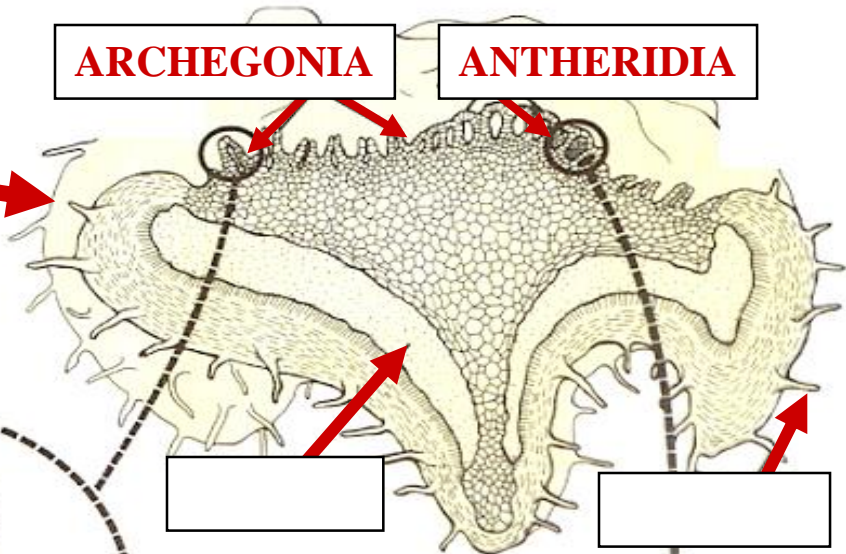
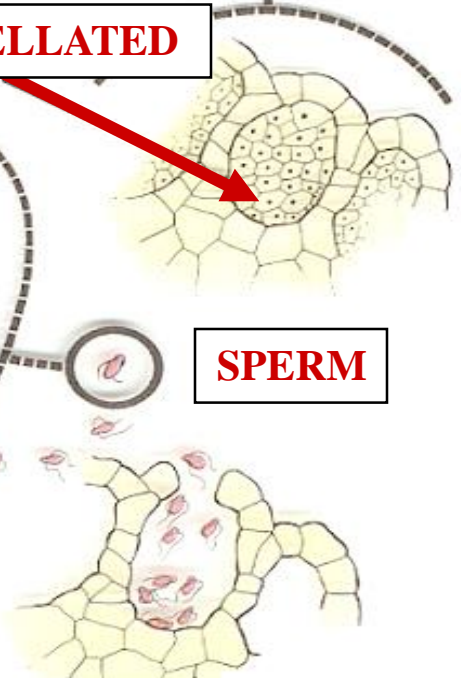
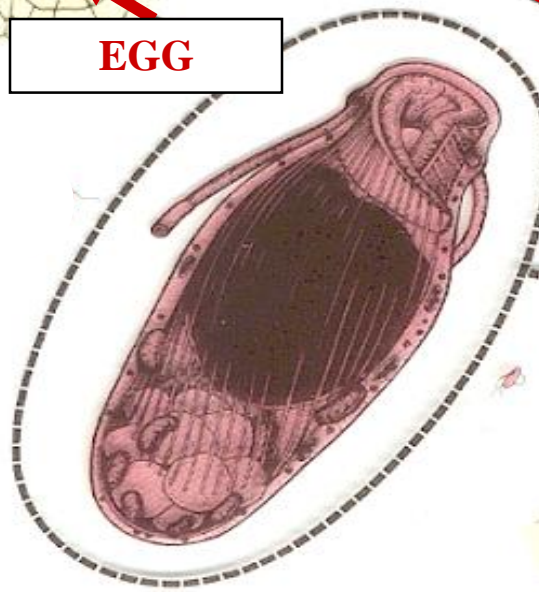
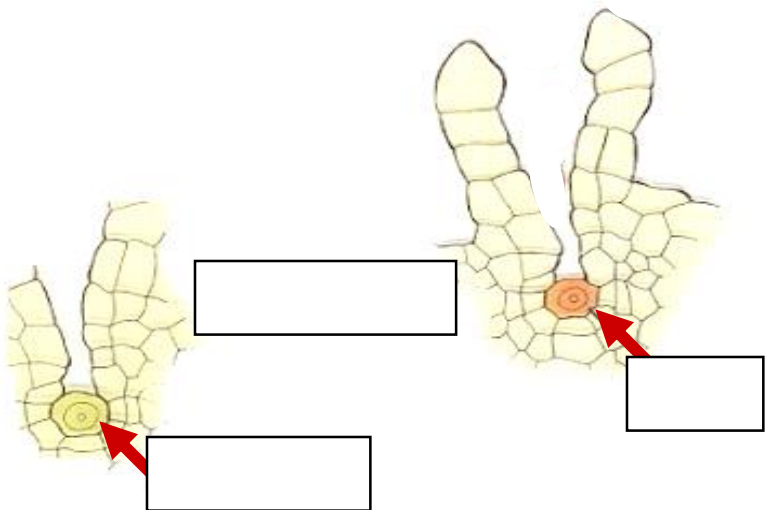


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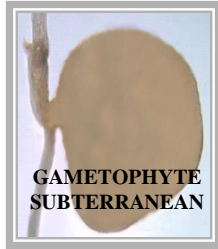


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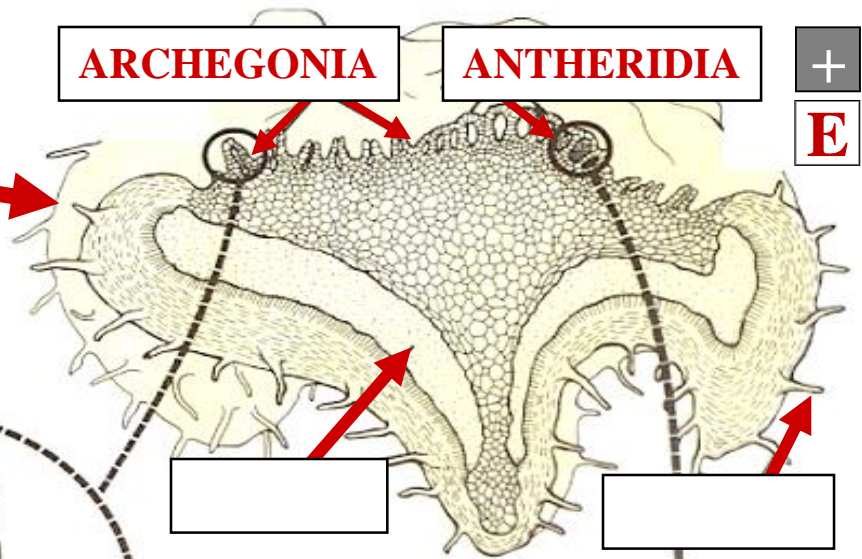
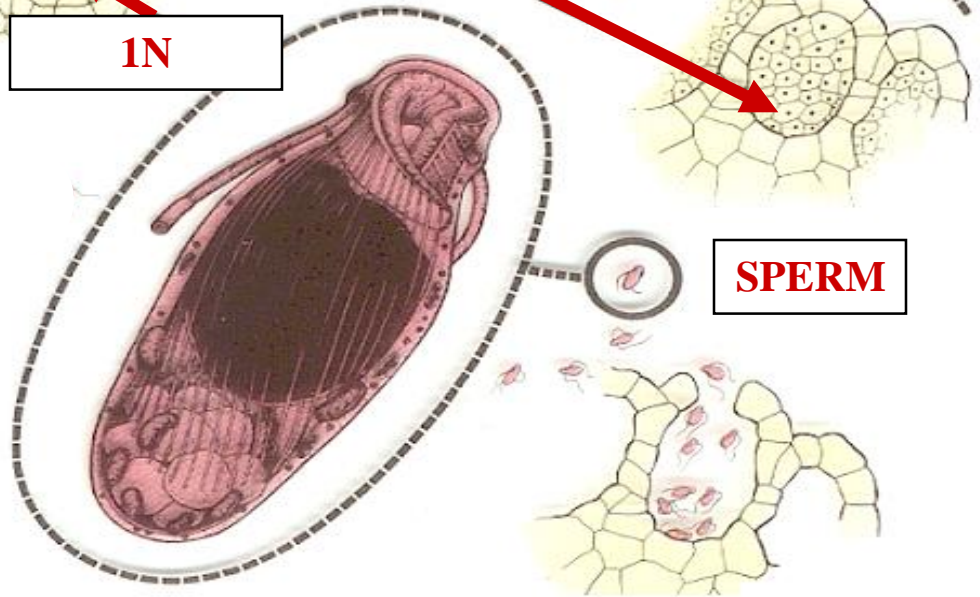
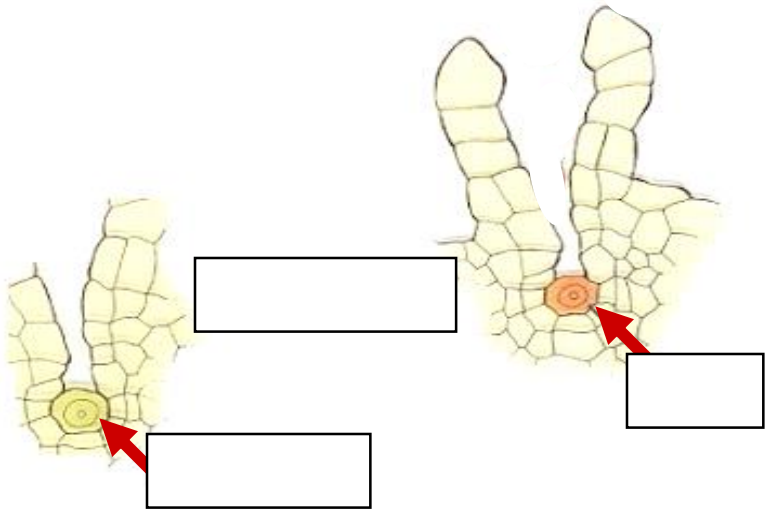
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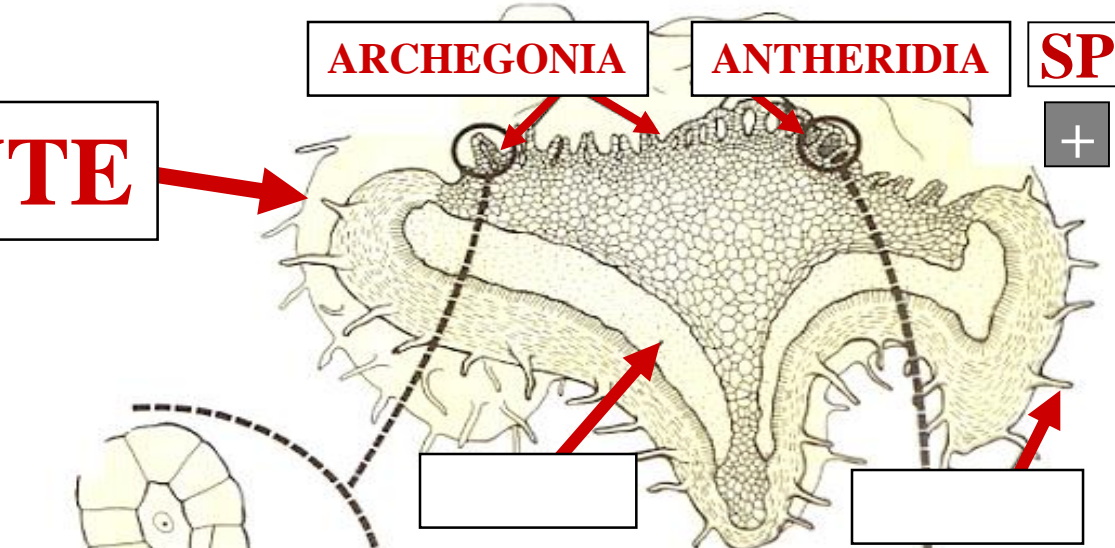
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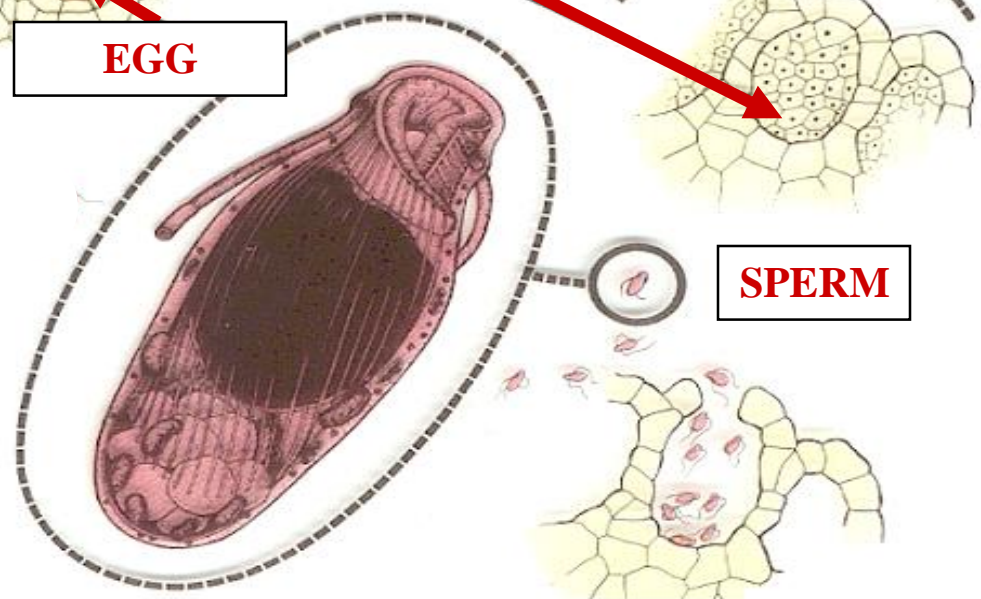
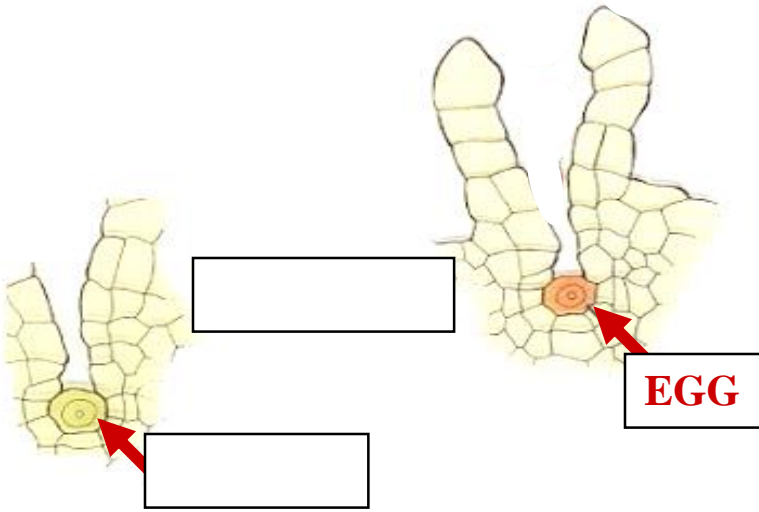
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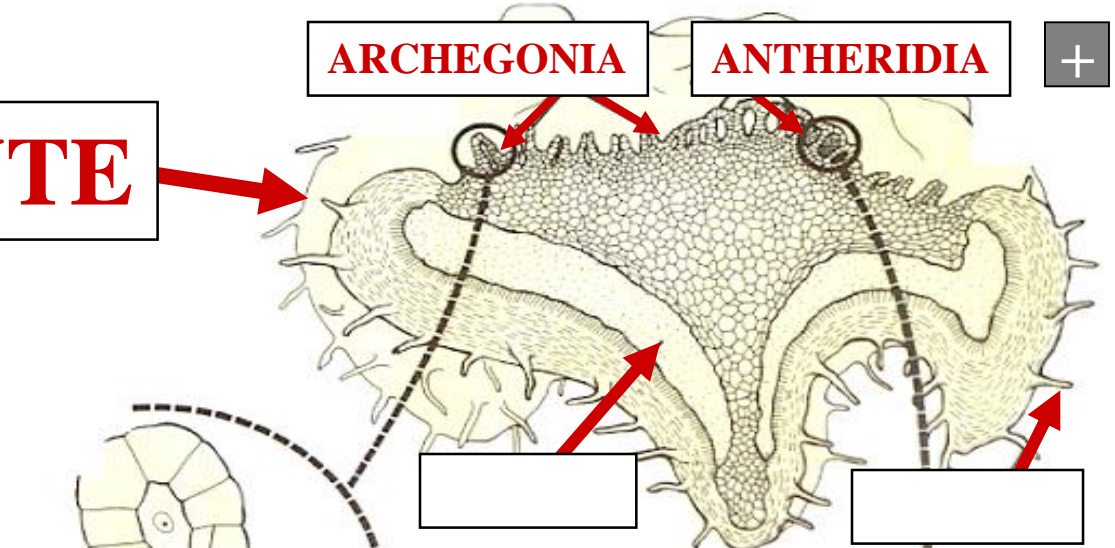
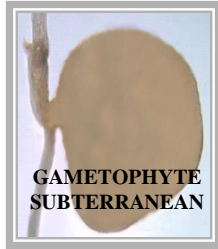
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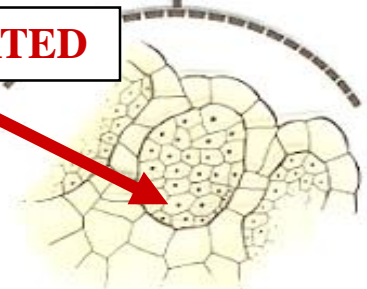
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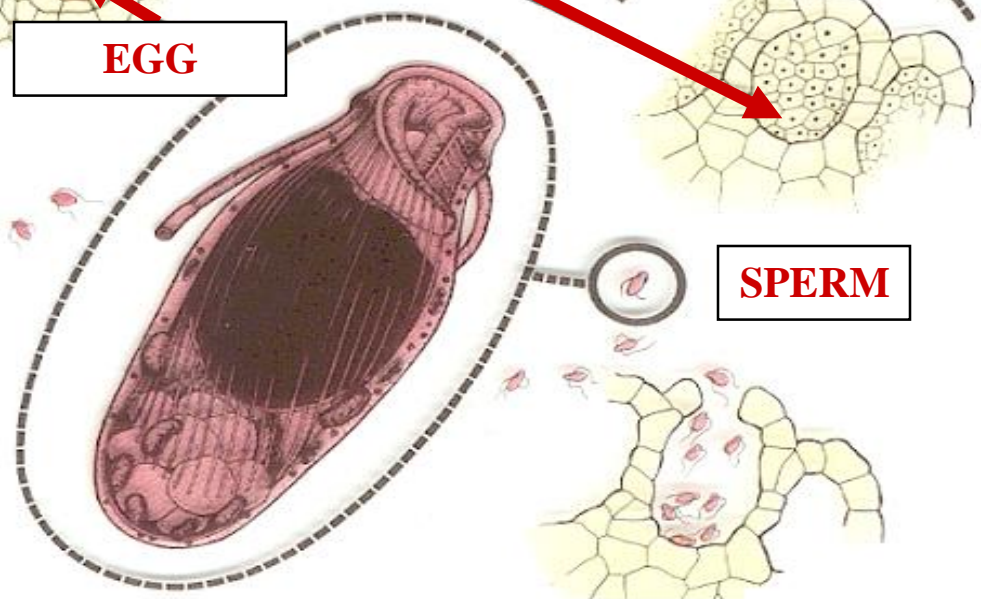
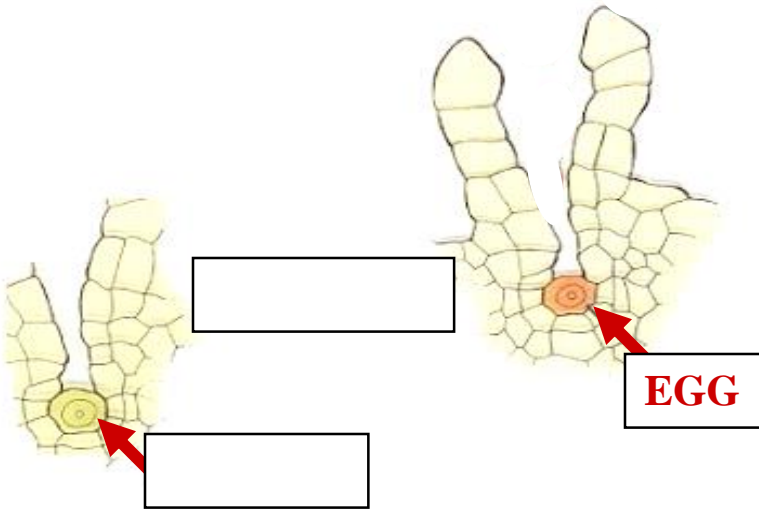


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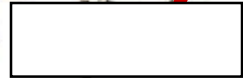
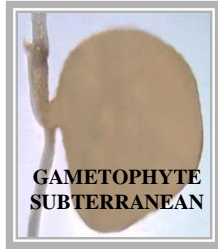
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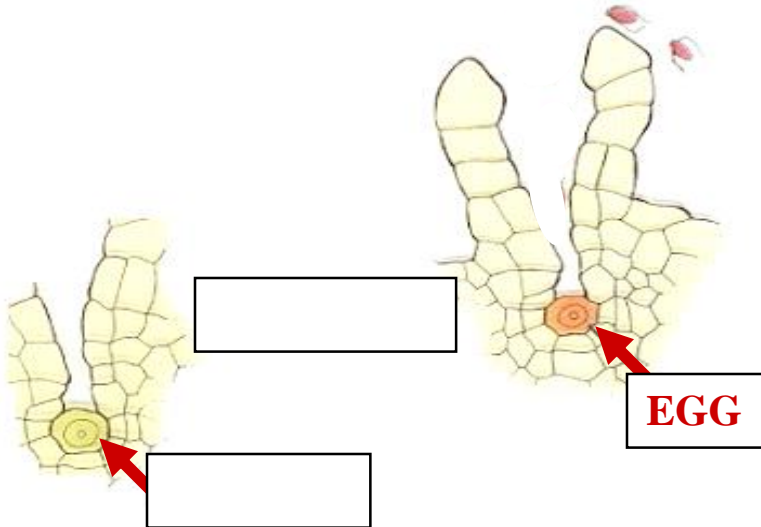
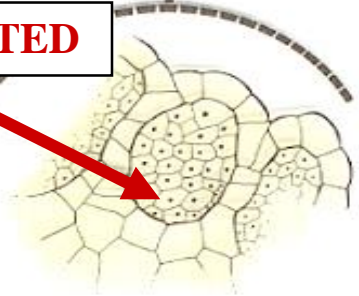
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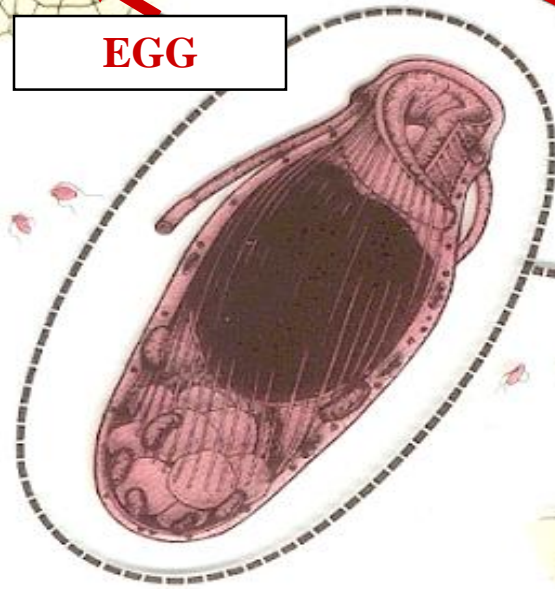


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EGG



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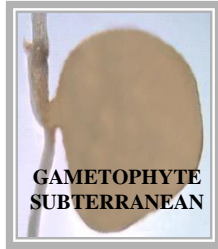
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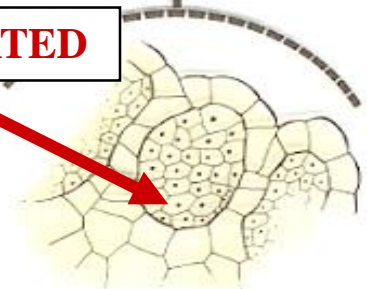


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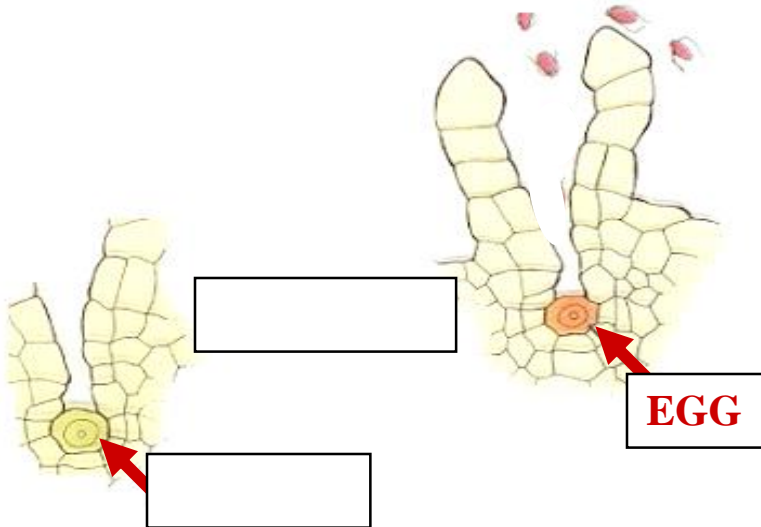


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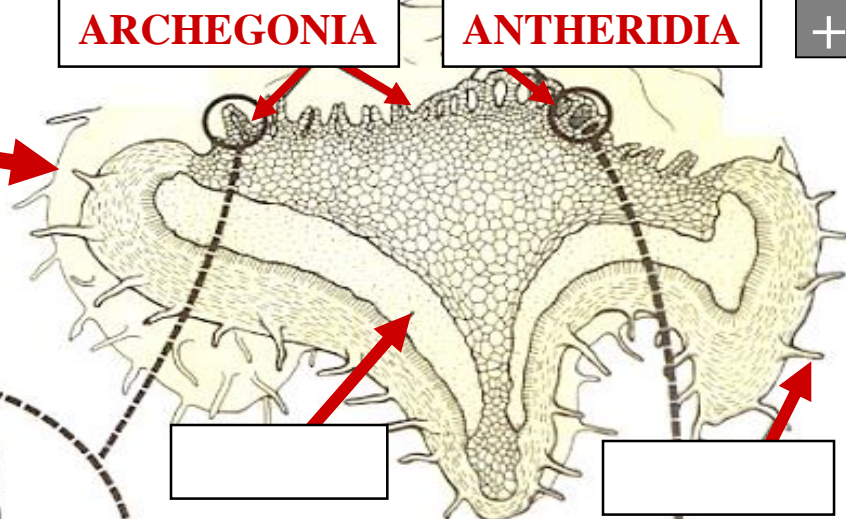
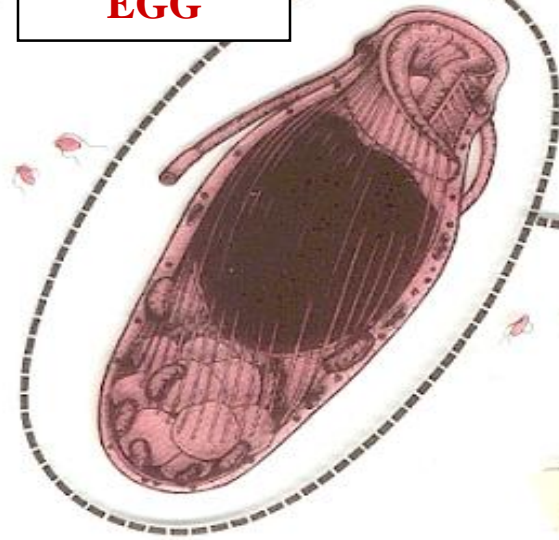
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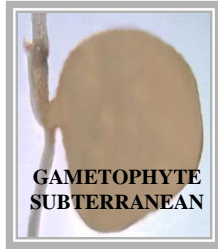
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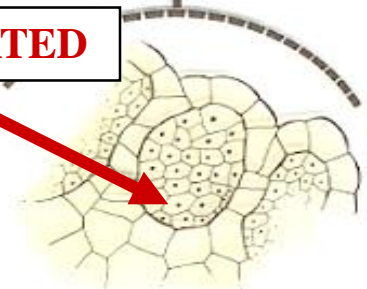


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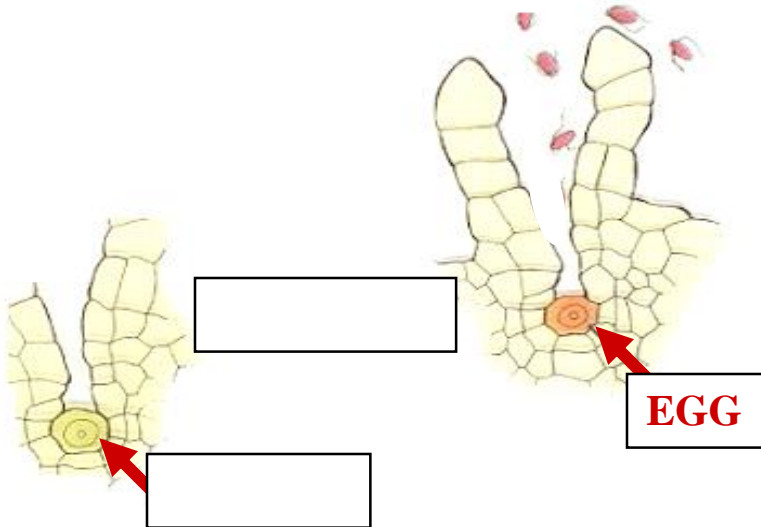


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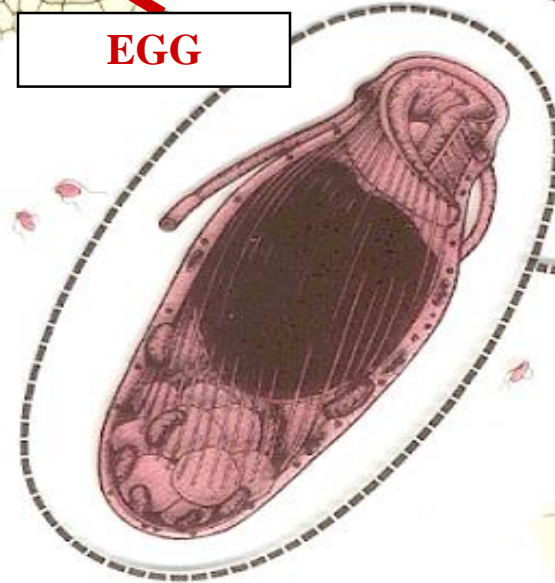
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EGG



EGG

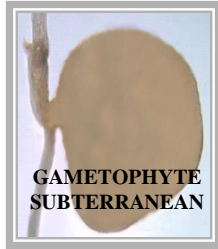
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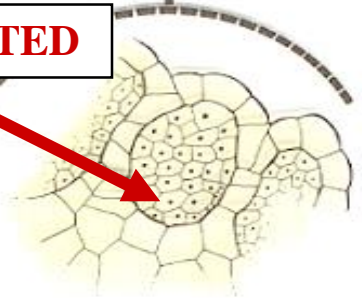
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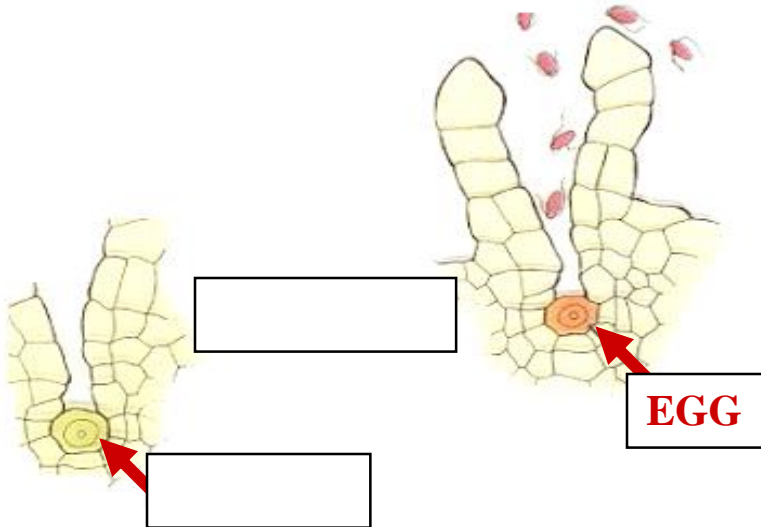
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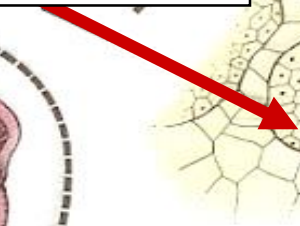
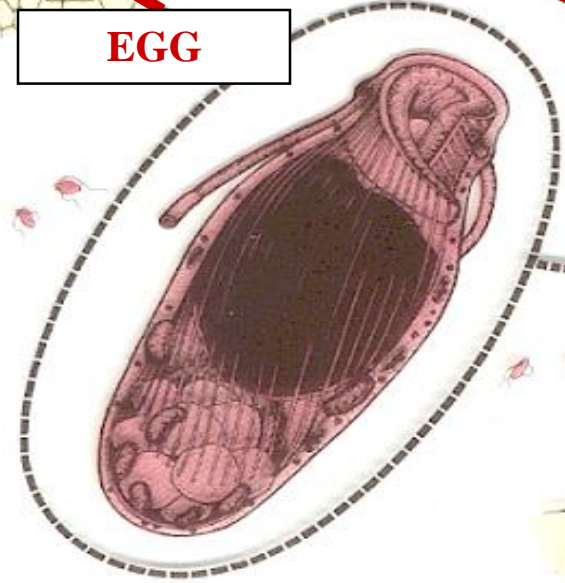
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SPERM



EGG



GAMETOPHYTE

ARCHEGONIA

ANTHERIDIA



GAMETOPHYTE
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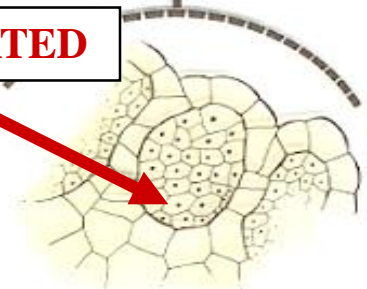


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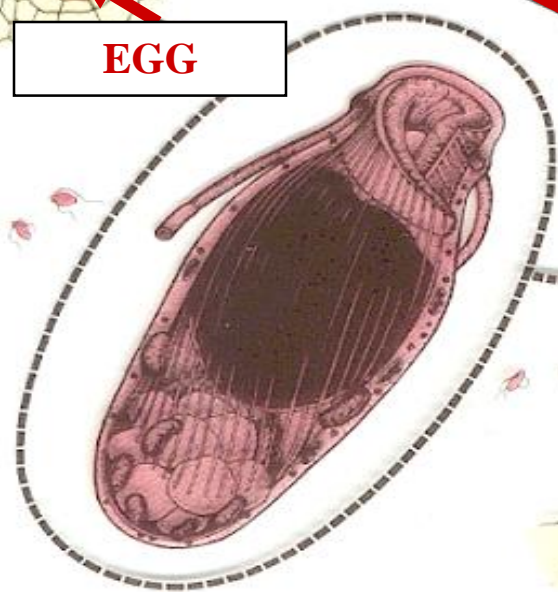


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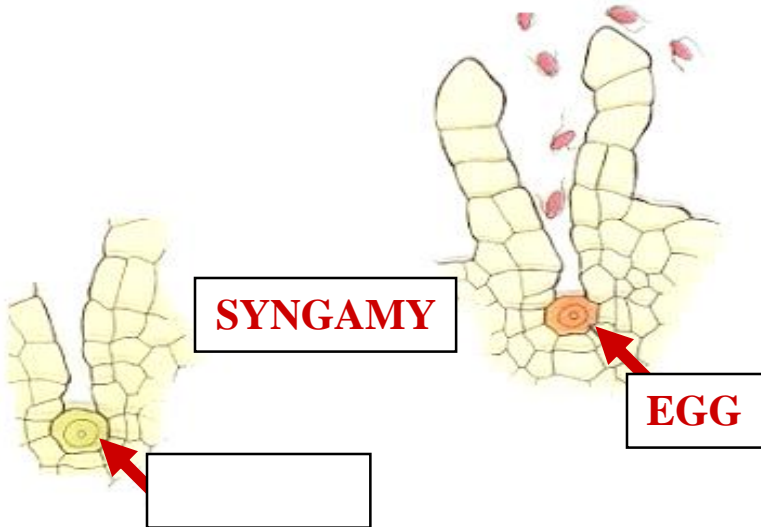
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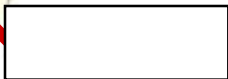
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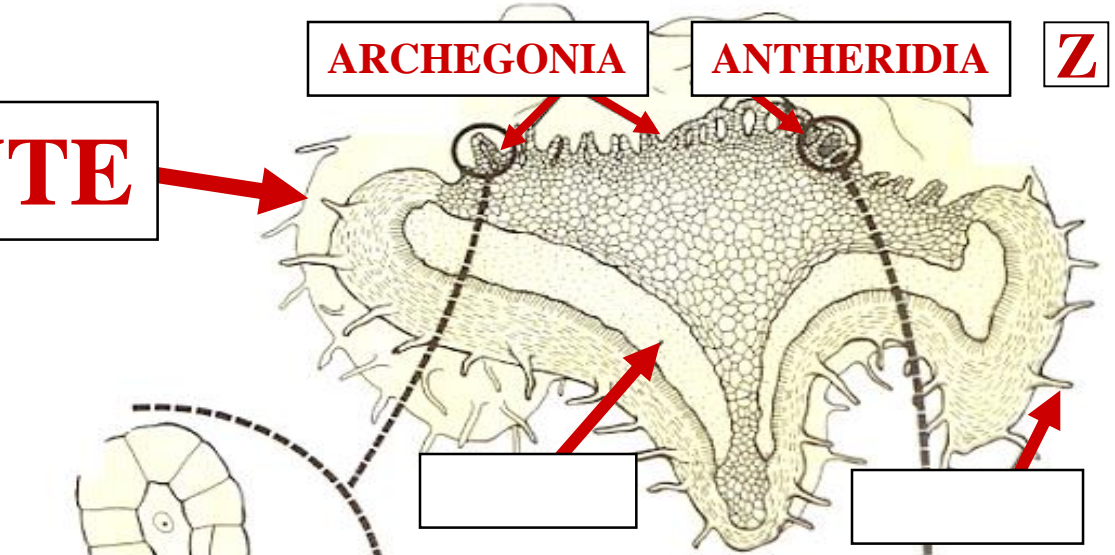


GAMETOPHYTE

ARCHEGONIA

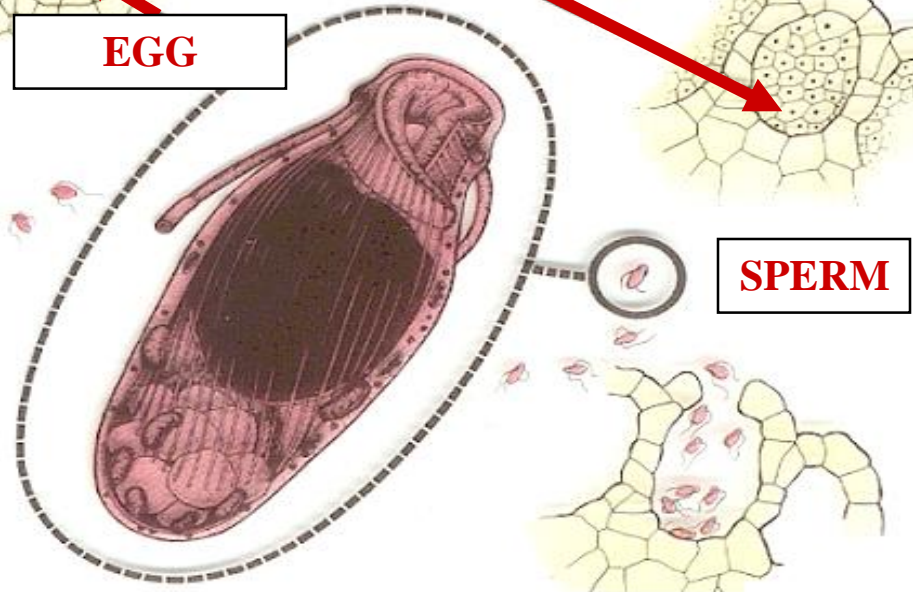
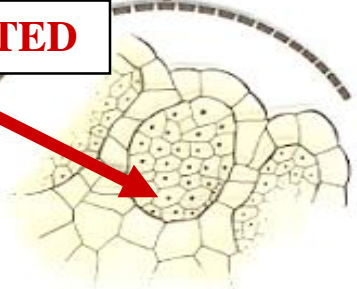
ANTHERIDIA

Z

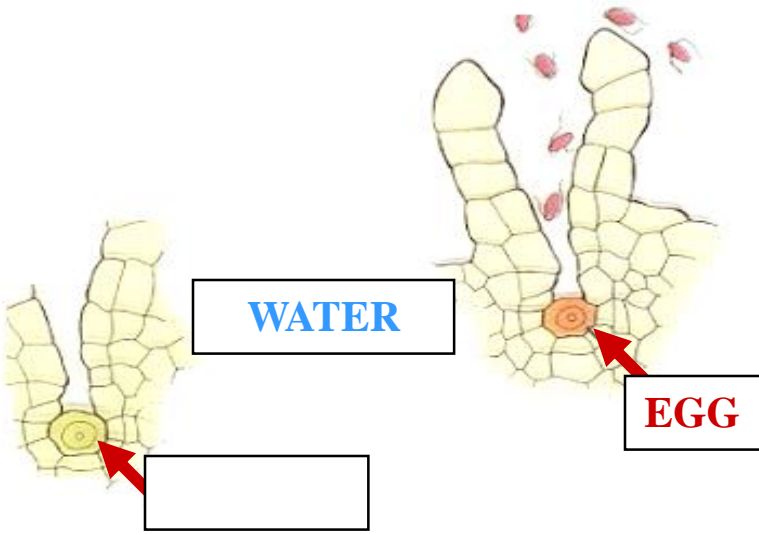


BIFLAGELLATED

EGG



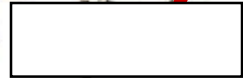
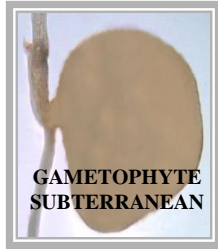
WATER



GAMETOPHYTE

ARCHEGONIA

ANTHERIDIA



BIFLAGELLATED

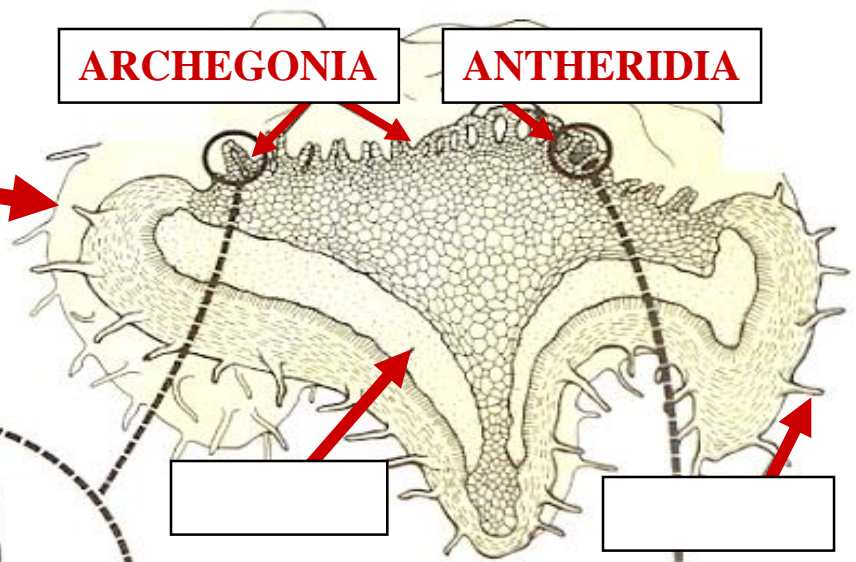
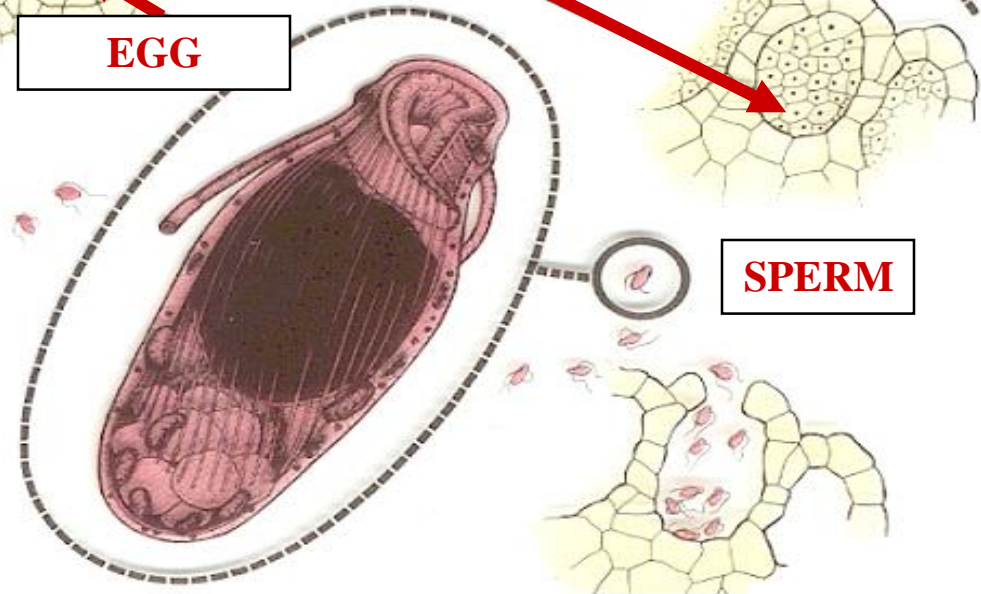
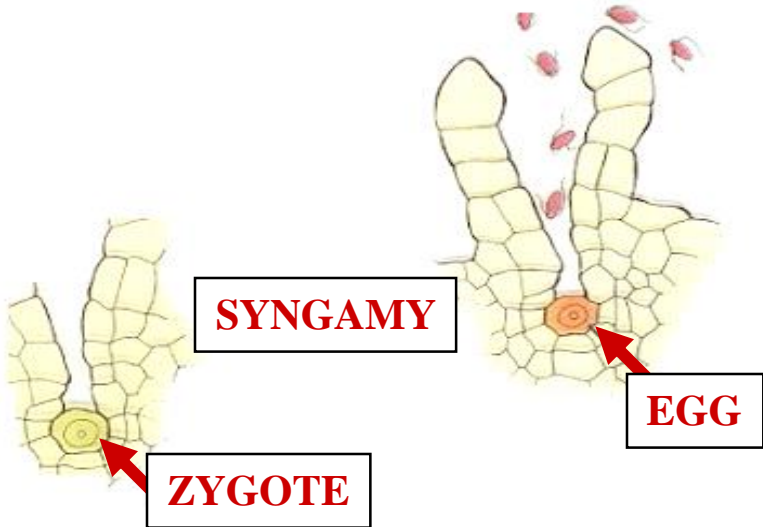
EGG

SPERM

SYNGAMY

EGG

ZYGOTE

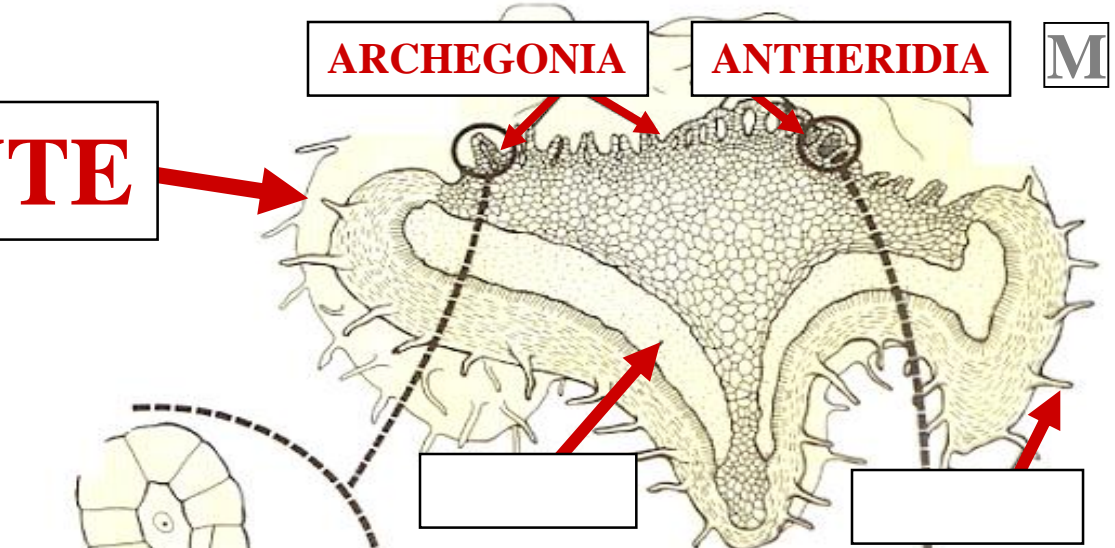
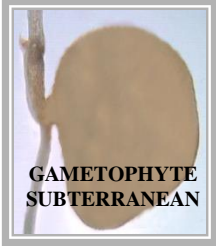


GAMETOPHYTE

ARCHEGONIA

ANTHERIDIA

M



BIFLAGELLATED

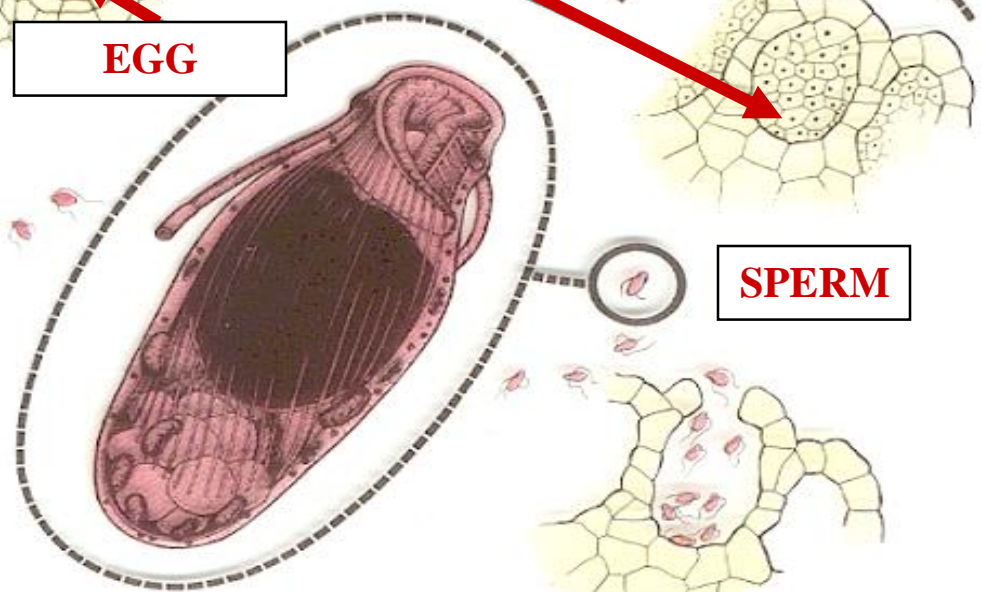
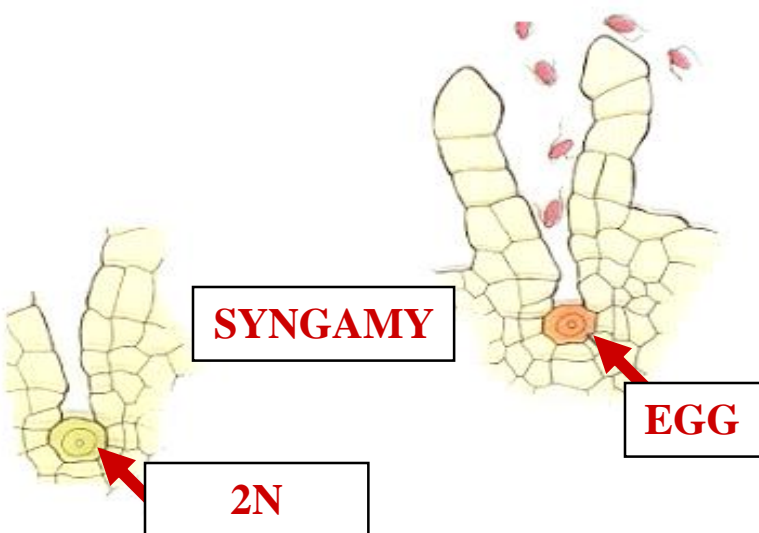
EGG

SPERM

SYNGAMY

EGG

2N



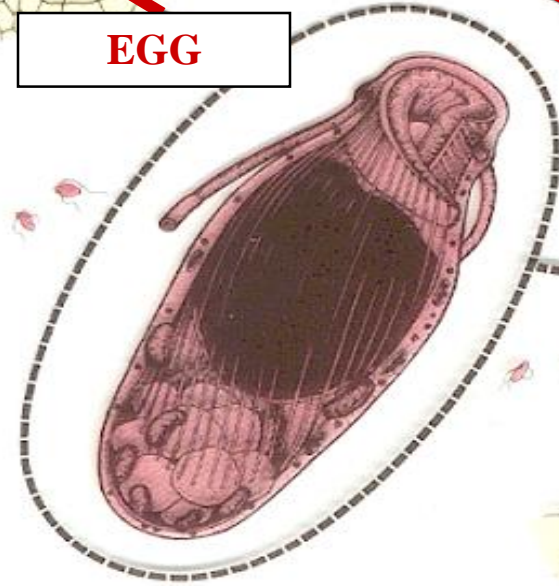
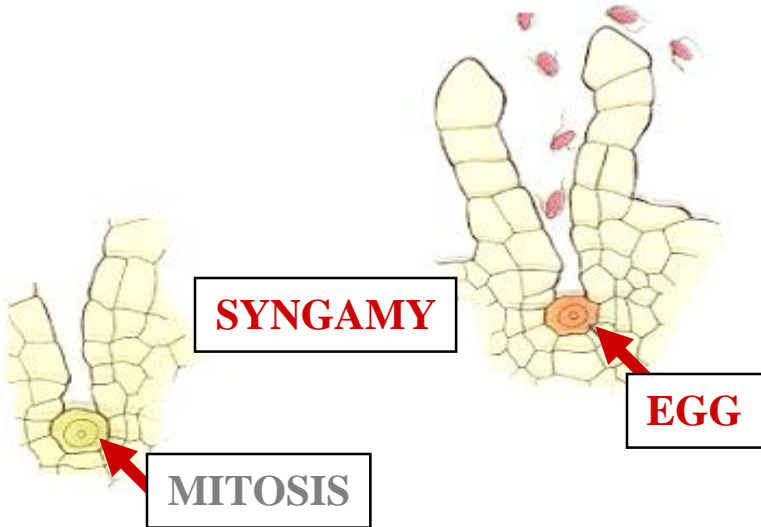
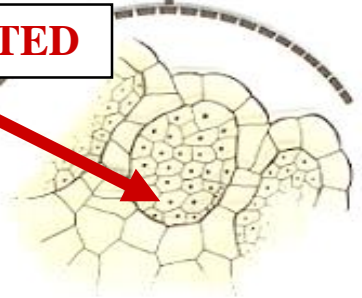
GAMETOPHYTE

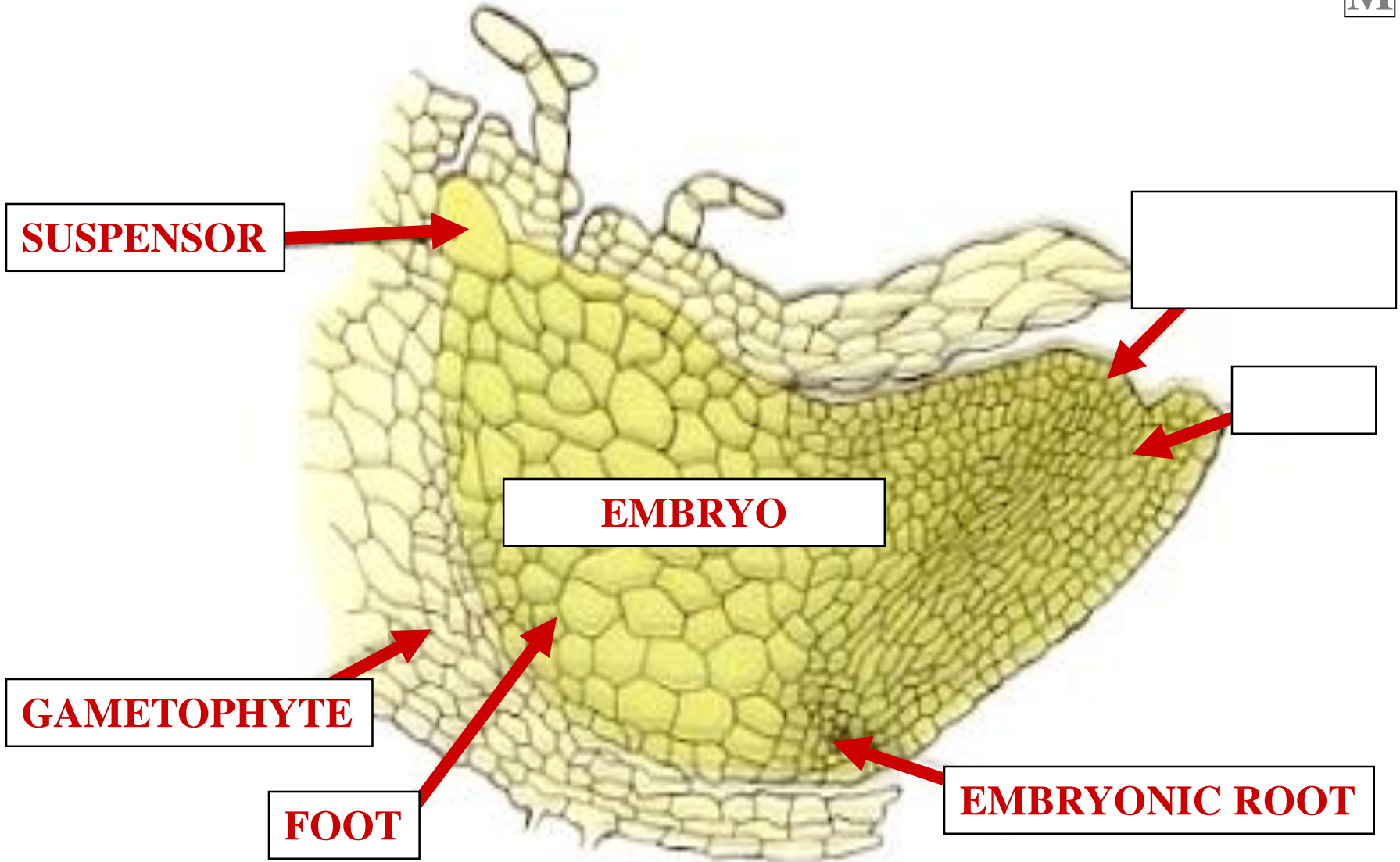
ARCHEGONIA

ANTHERIDIA



BIFLAGELLATED





SUSPENSOR

EMBRYO

GAMETOPHYTE

FOOT

EMBRYONIC ROOT



SUSPENSOR



MITOSIS

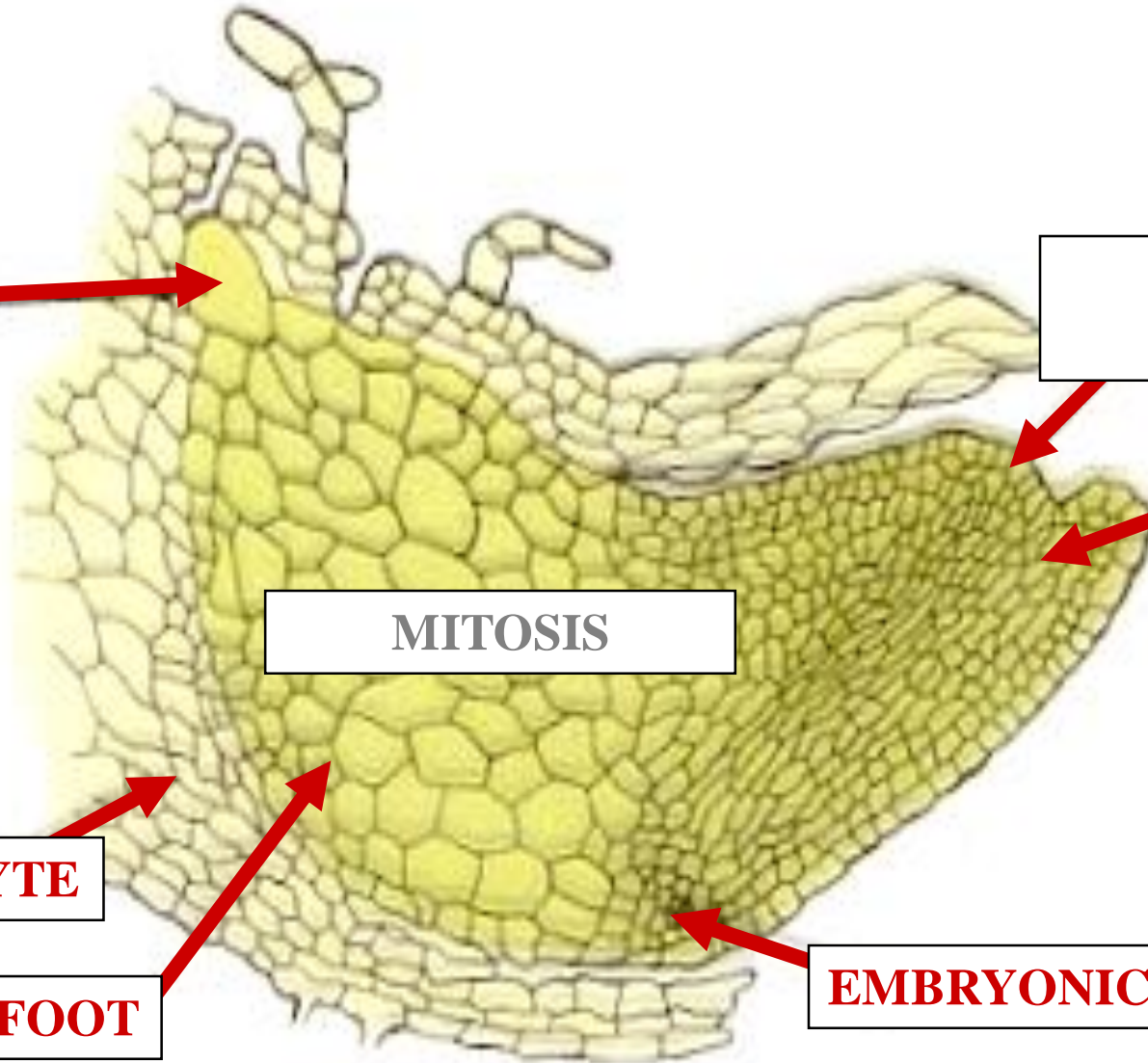
GAMETOPHYTE

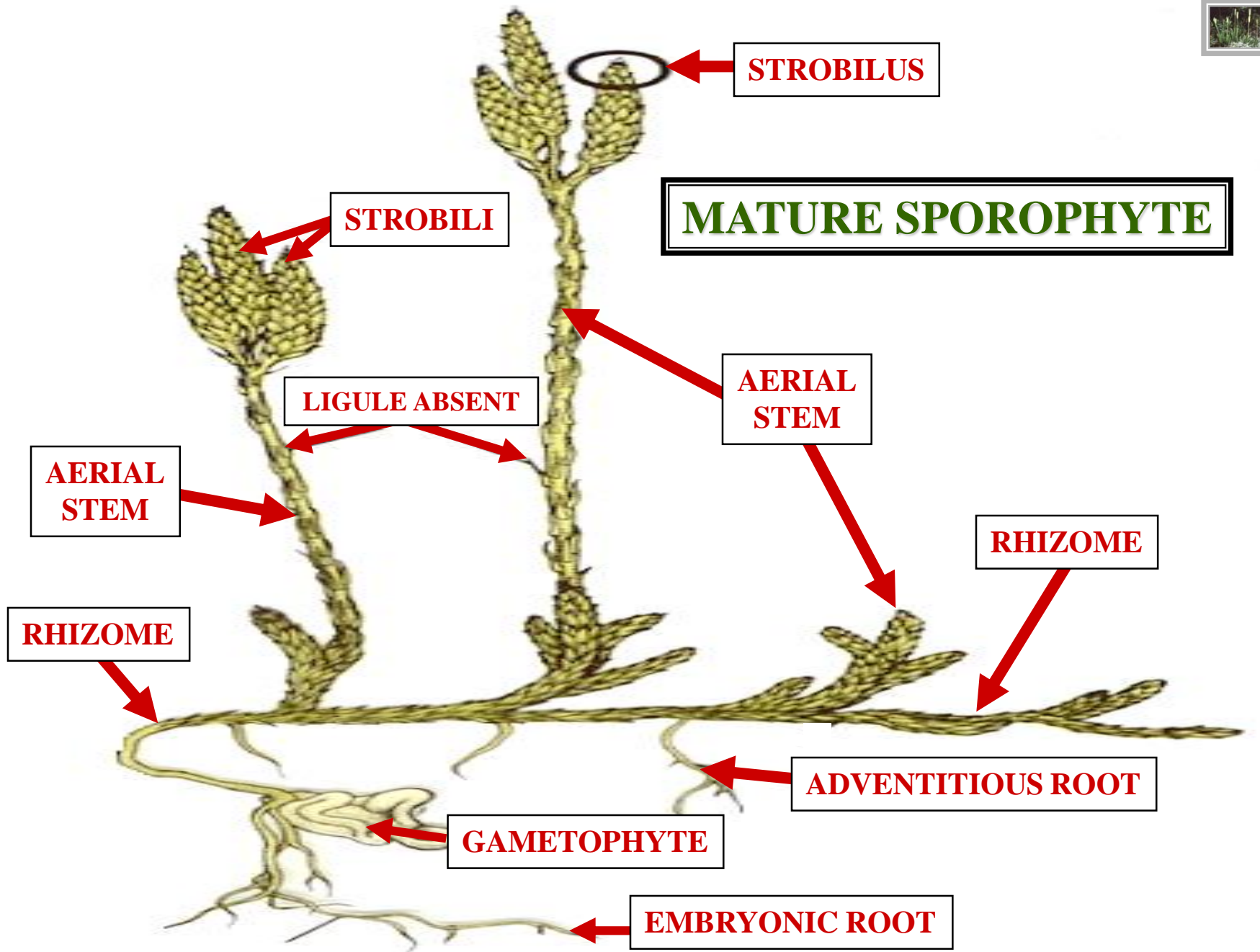


FOOT



EMBRYONIC ROOT





LYCOPODIUM





LYCOPODIOPHYTA CLASSIFICATION

**EXTANT
ORDER**

SELAGINALES

**EXTANT
ORDER**



COMMON NAME

SPIKE-MOSSES

S



SPIKE



SPIKE

M



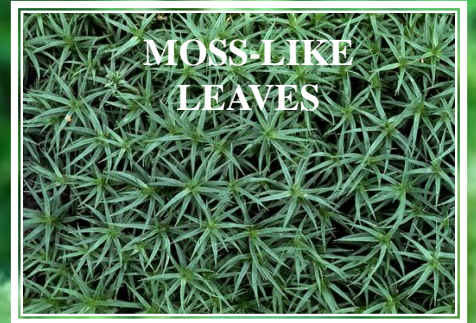
STROBILUS
SPIKE

MOSS



STROBILUS
SPIKE

MOSS



SM

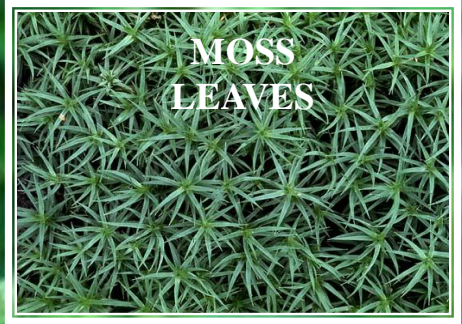


SPIKE-MOSSES

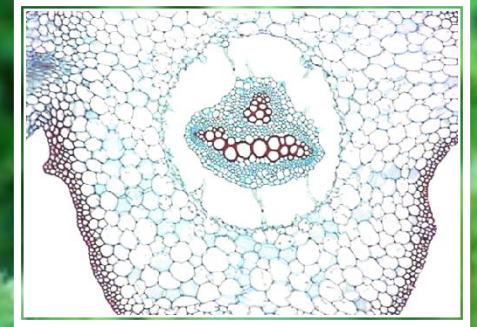
MOSS
LEAVES

XP

STROBILUS
SPIKE



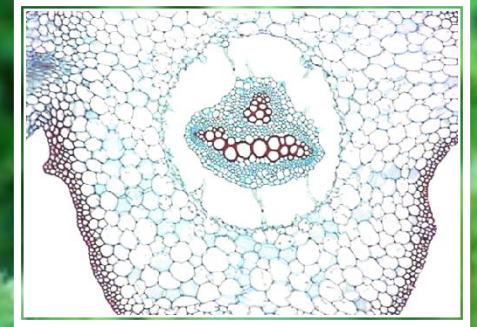
SPIKE-MOSSES



VT

SPIKE-MOSSES XYLEM & PHLOEM

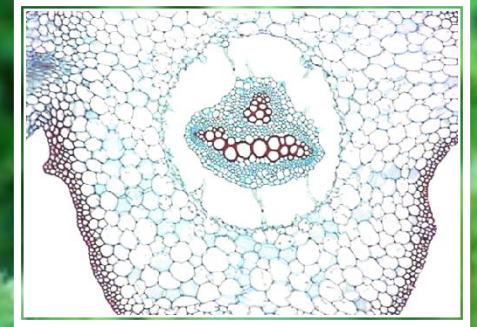
SPIKE-MOSSES



T

SPIKE-MOSSES VASCULAR TISSUE

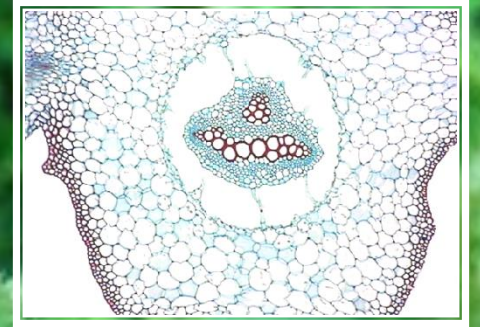
SPIKE-MOSSES



N

SPIKE-MOSSES TRACHEOPHYTE

SPIKE-MOSSES



^

SPIKE-MOSSES
NOT TRUE MOSS

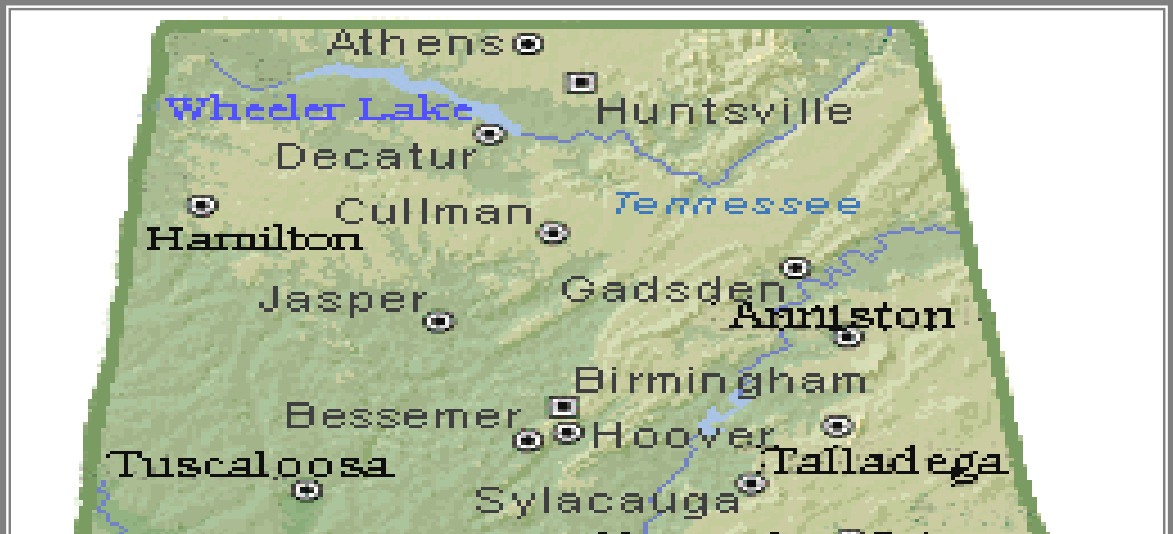


DIVERSITY



~750 SPECIES

EARTH



~4 SPECIES





REPRESENTATIVE GENUS

S

?





SELAGINELLA



HABITAT



ALABAMA FOREST

TEMPERATE DESERTS





S. LEPIDOPHYLLA





S. LEPIDOPHYLLA





S. LEPIDOPHYLLA





S. LEPIDOPHYLLA





RESURRECTION PLANT





S. LEPIDOPHYLLA

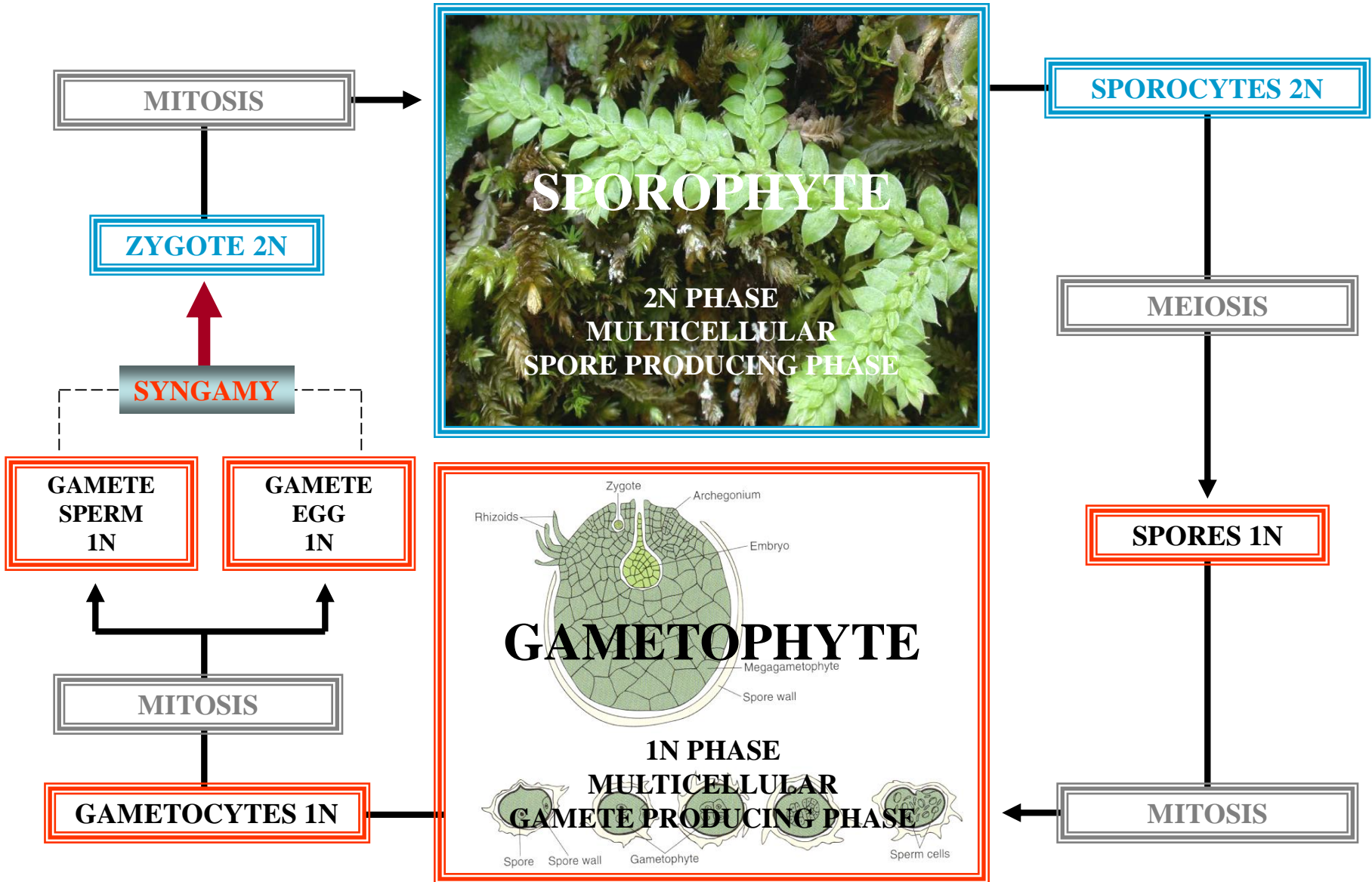




GENERAL CHARACTERS

SELAGINALLES

LIFE CYCLE

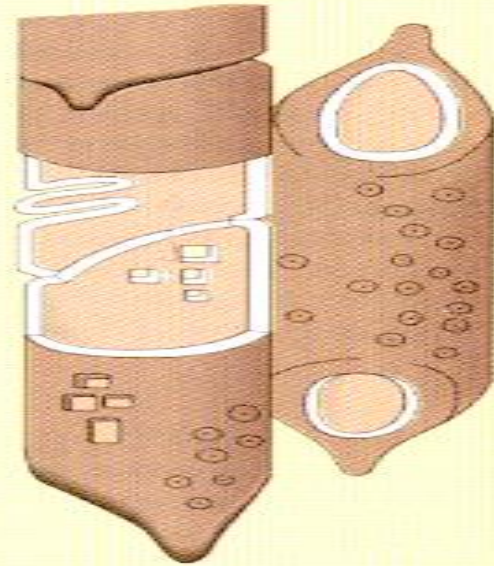
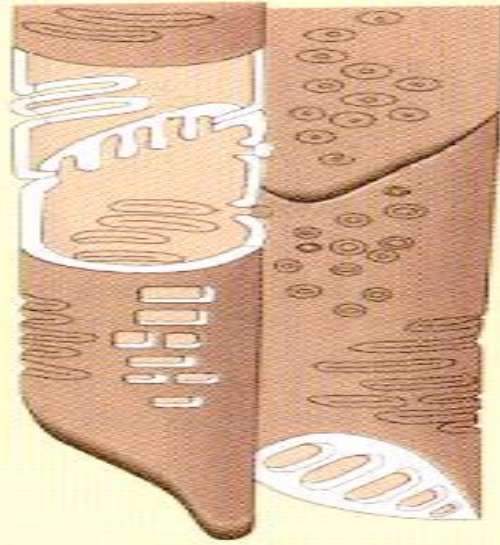
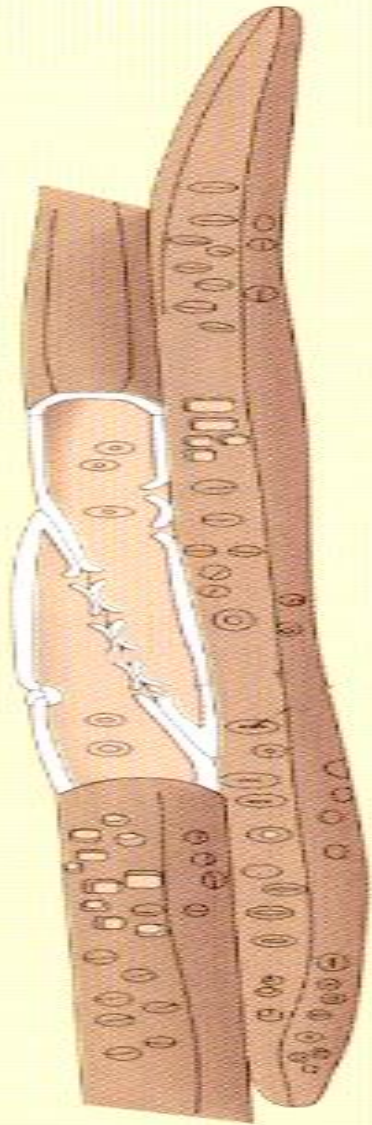




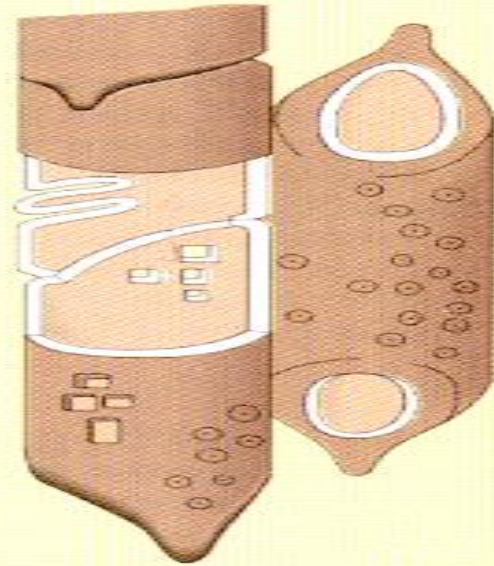
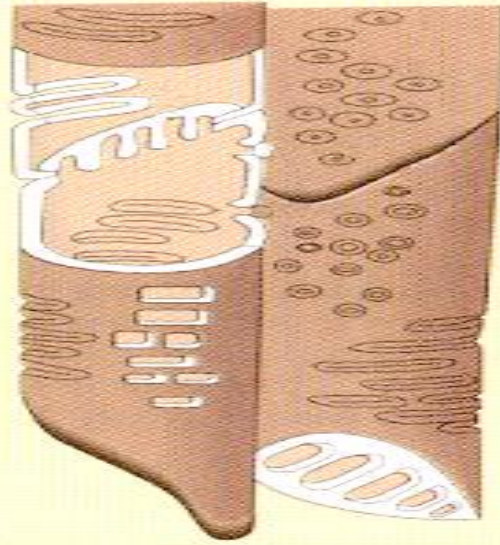
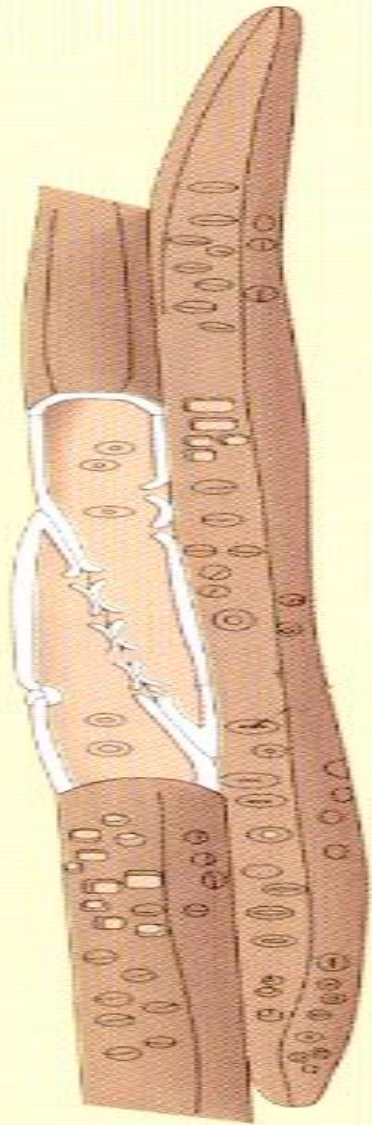
SPOROPHYTE CHARACTERS



XYLEM



XYLEM CELLS



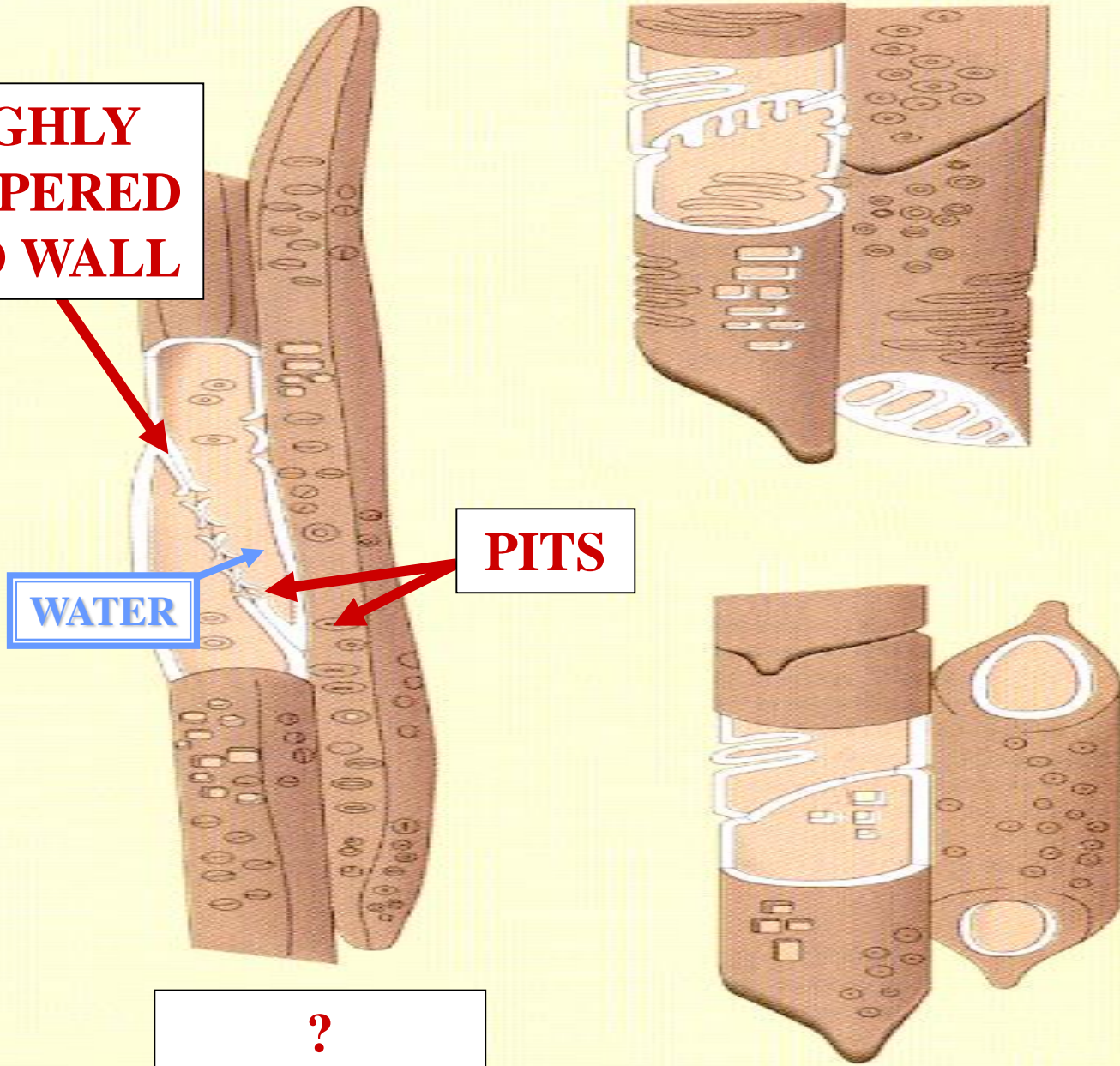
TRACHEARY ELEMENTS

**HIGHLY
TAPPED
END WALL**

WATER

PITS

?

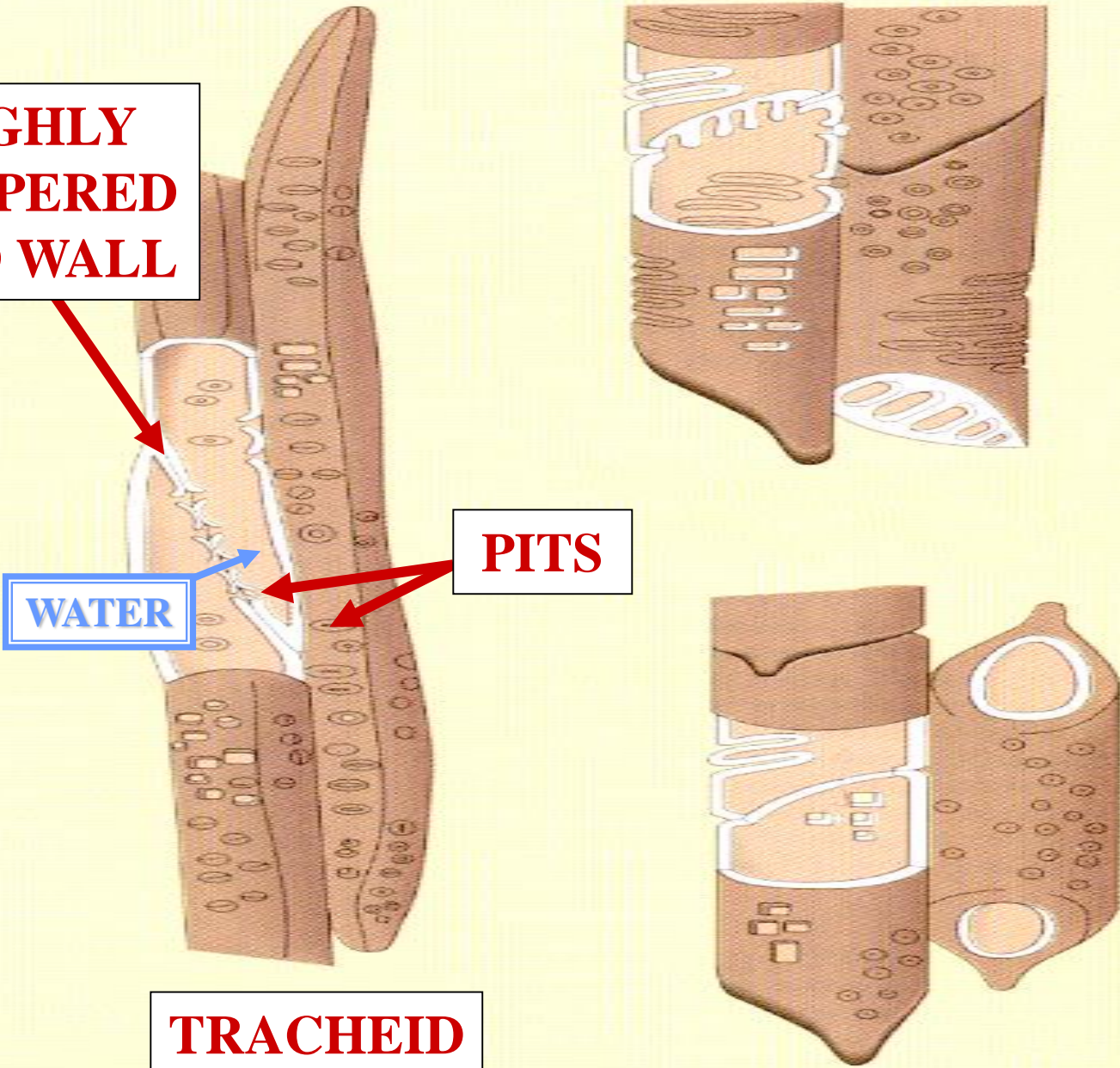


**HIGHLY
TAPPED
END WALL**

WATER

PITS

TRACHEID



VM

**HIGHLY
TAPPED
END WALL**

**LESS
TAPPED
END WALL**

?

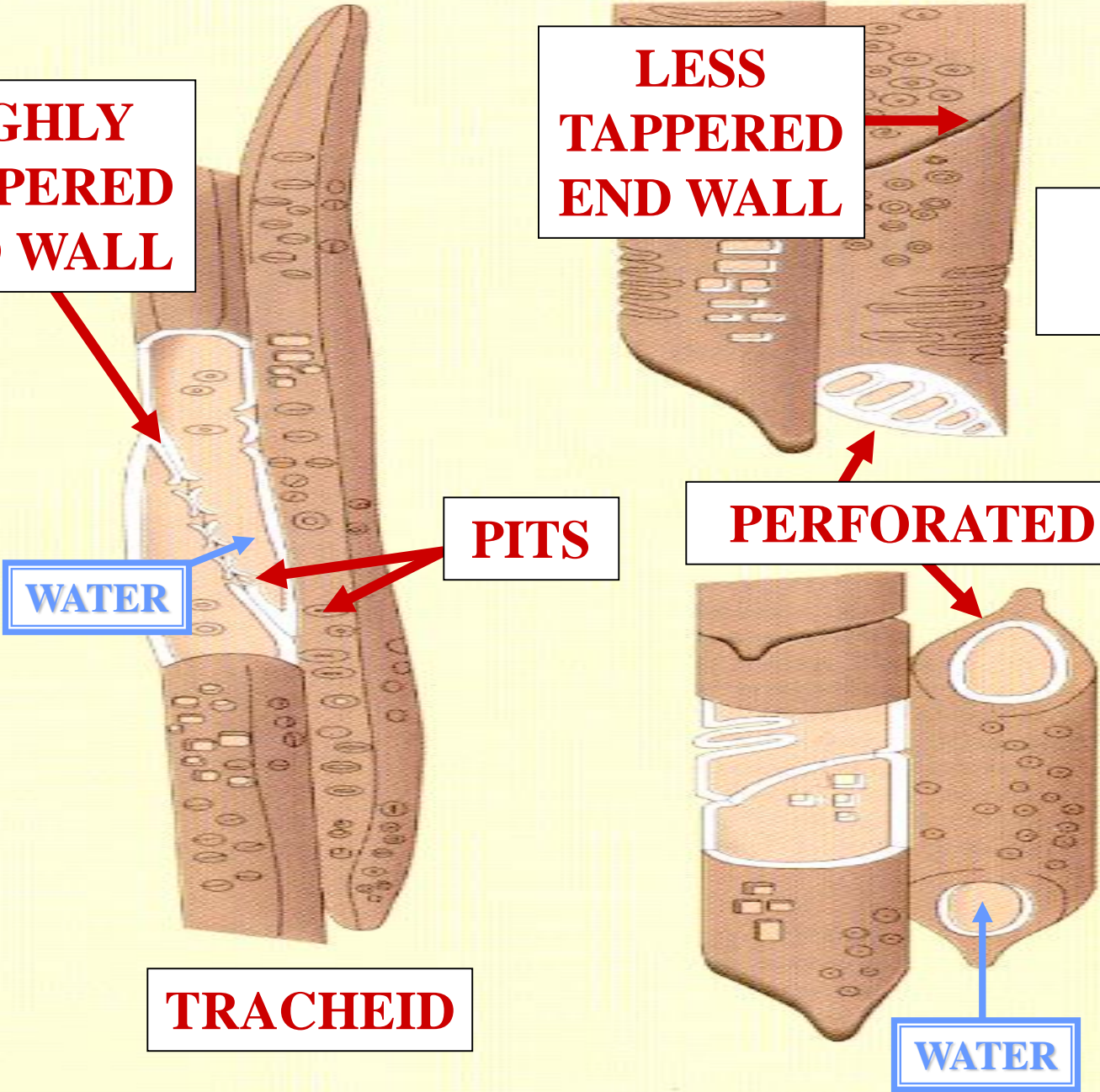
WATER

PITS

PERFORATED PLATE

TRACHEID

WATER





S **T**

**HIGHLY
TAPPERED
END WALL**

**LESS
TAPPERED
END WALL**

**VESSEL
MEMBER**

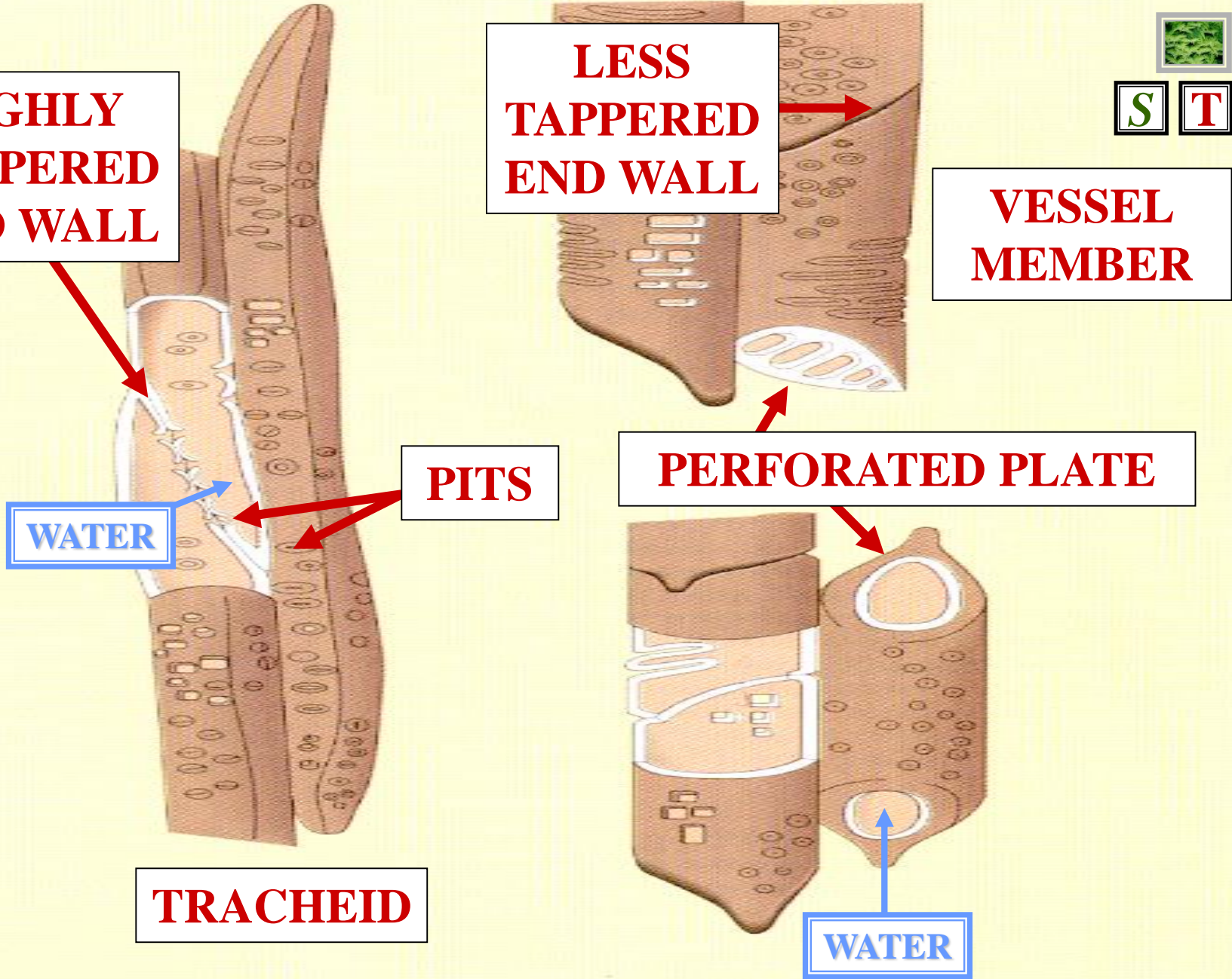
WATER

PITS

PERFORATED PLATE

TRACHEID

WATER





**TRACHEIDS
&
VESSEL MEMBERS**

SELAGINELLA



STEM



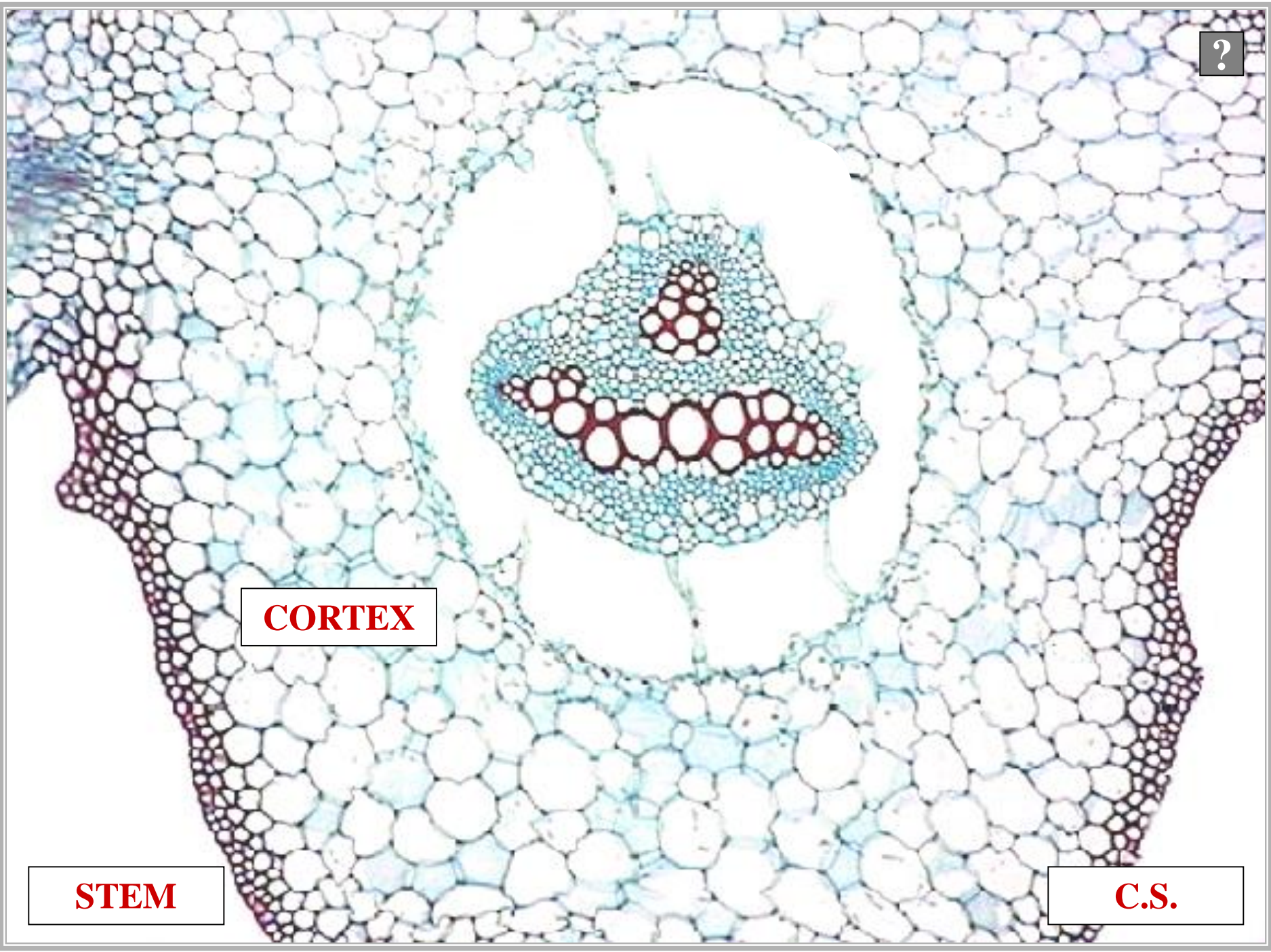
STEM ANATOMY

?

CORTEX

STEM

C.S.



C

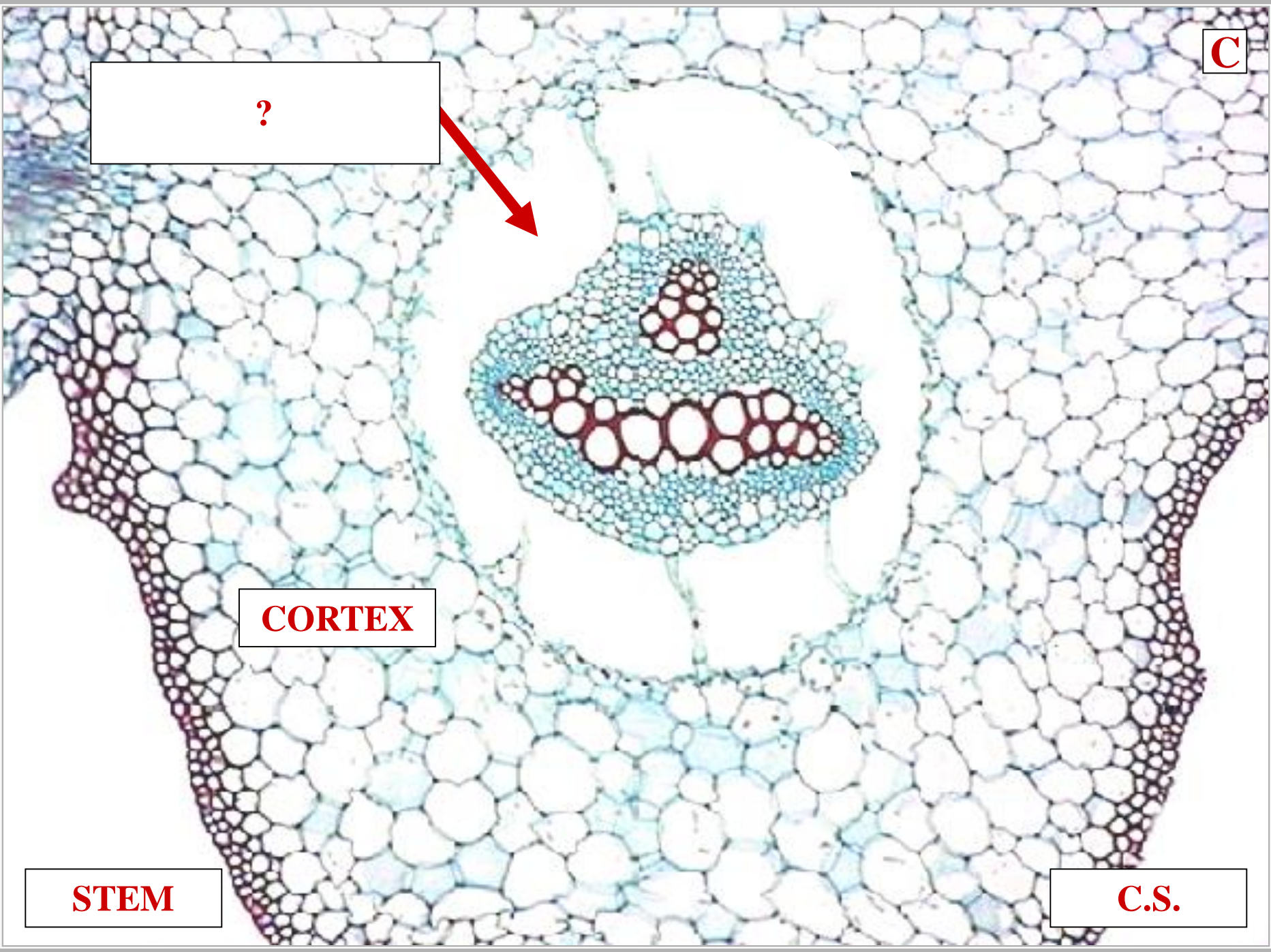
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CORTEX

STEM

C.S.



?

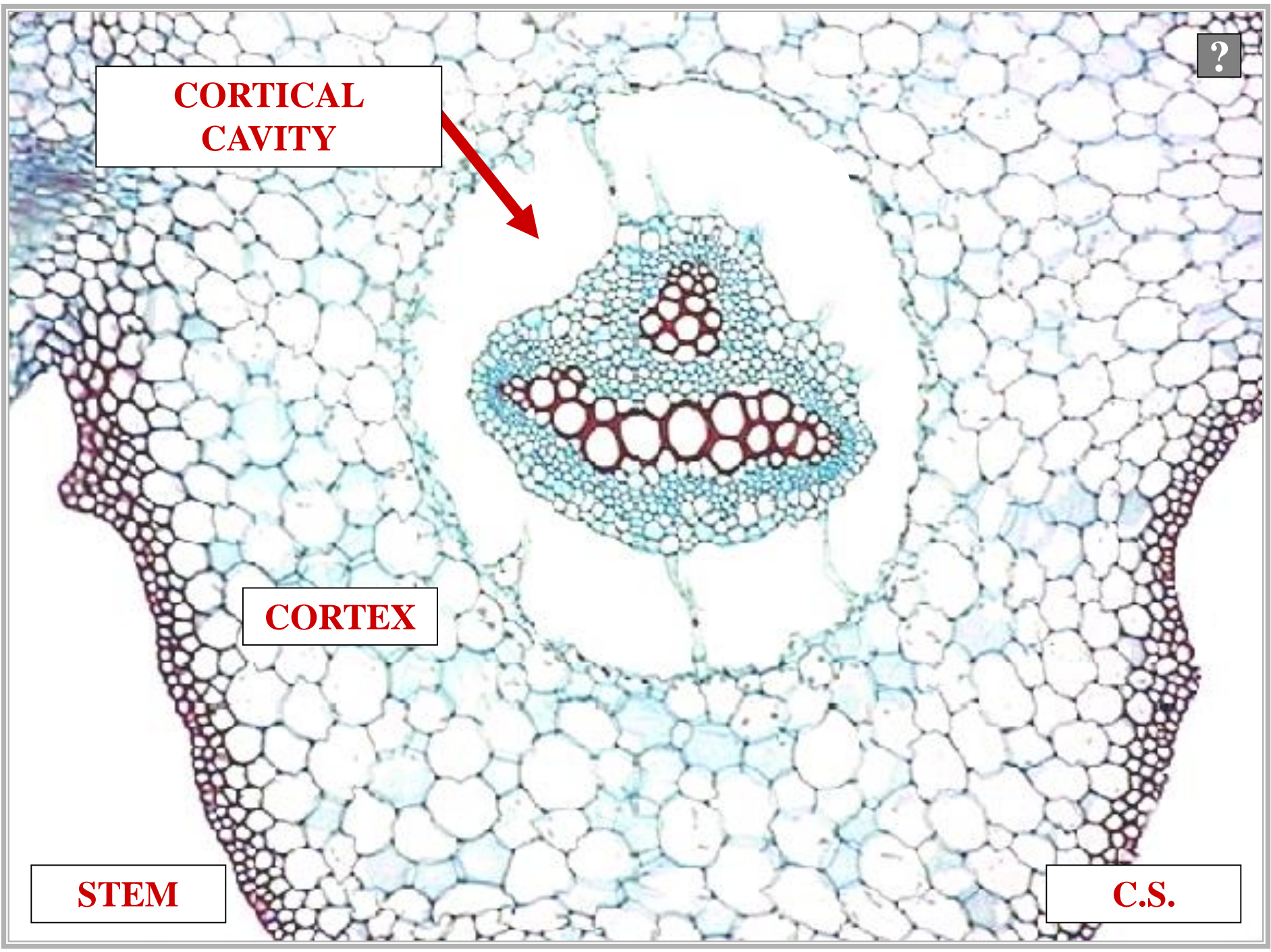
**CORTICAL
CAVITY**



CORTEX

STEM

C.S.



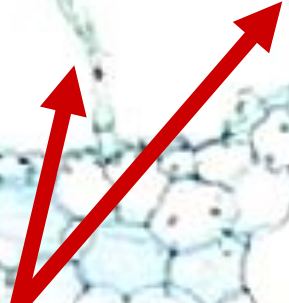
T

**CORTICAL
CAVITY**



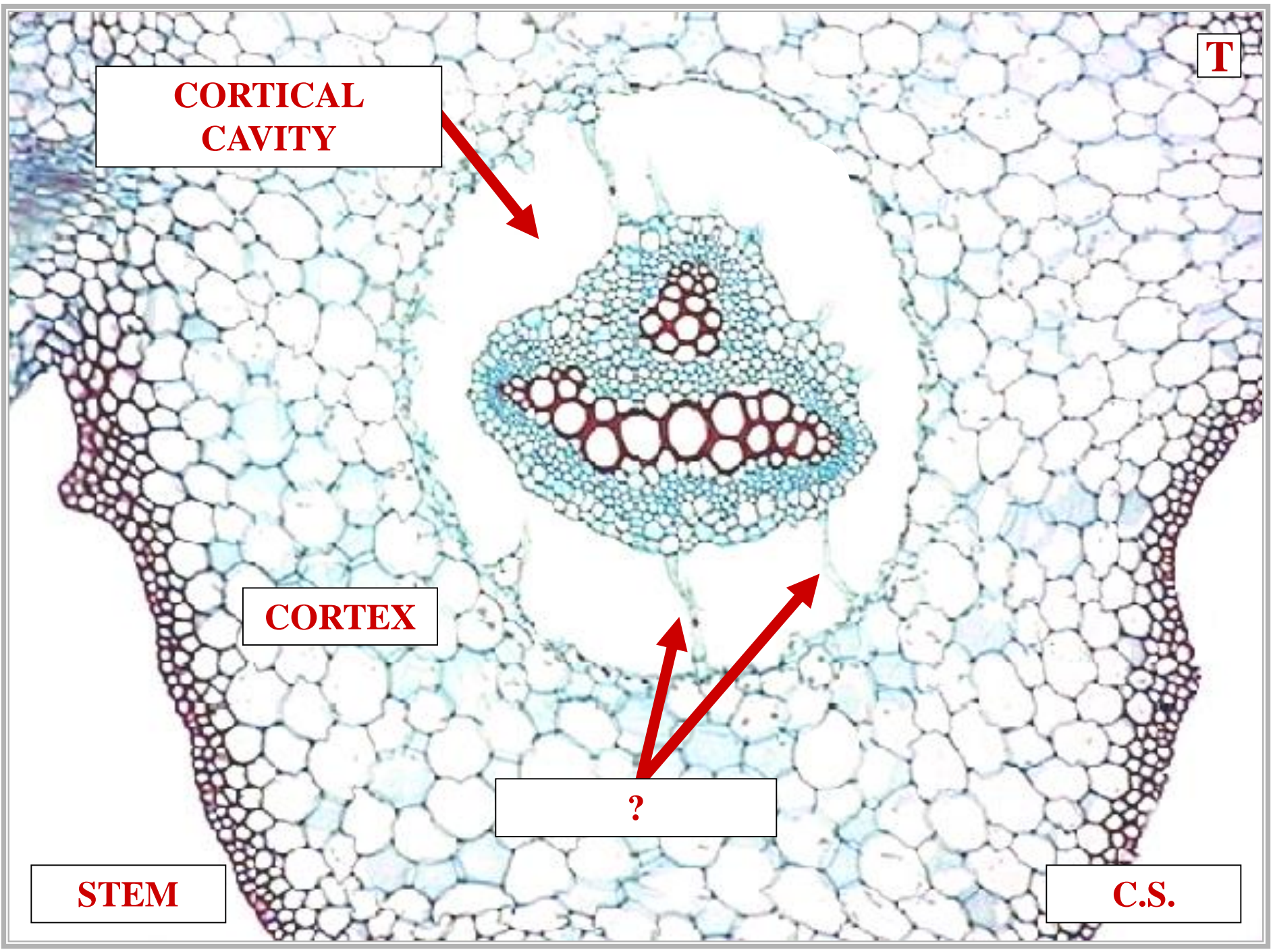
CORTEX

?



STEM

C.S.



**CORTICAL
CAVITY**

P

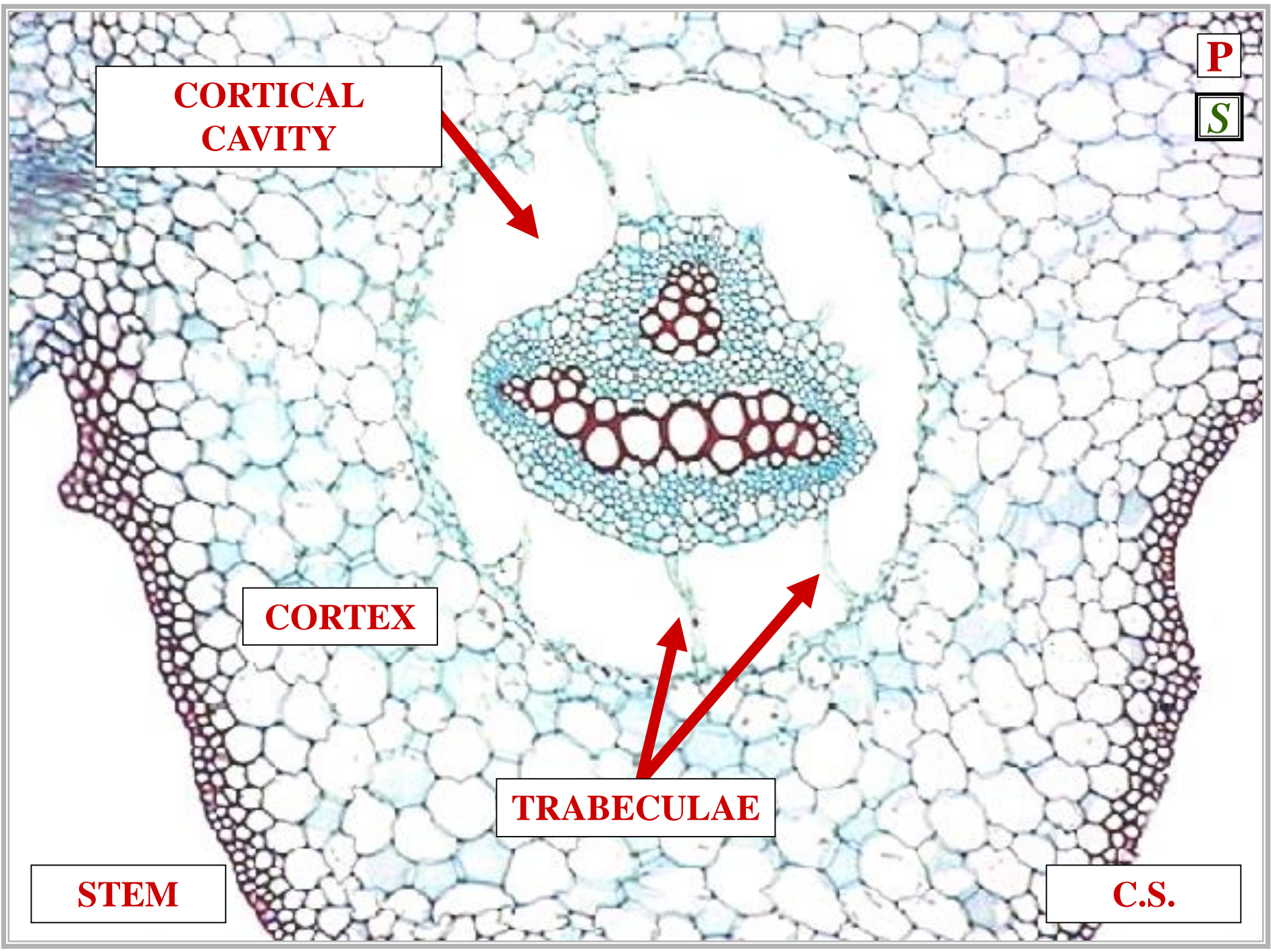
S

CORTEX

TRABECULAE

STEM

C.S.



**CORTICAL
CAVITY
PRESENT**

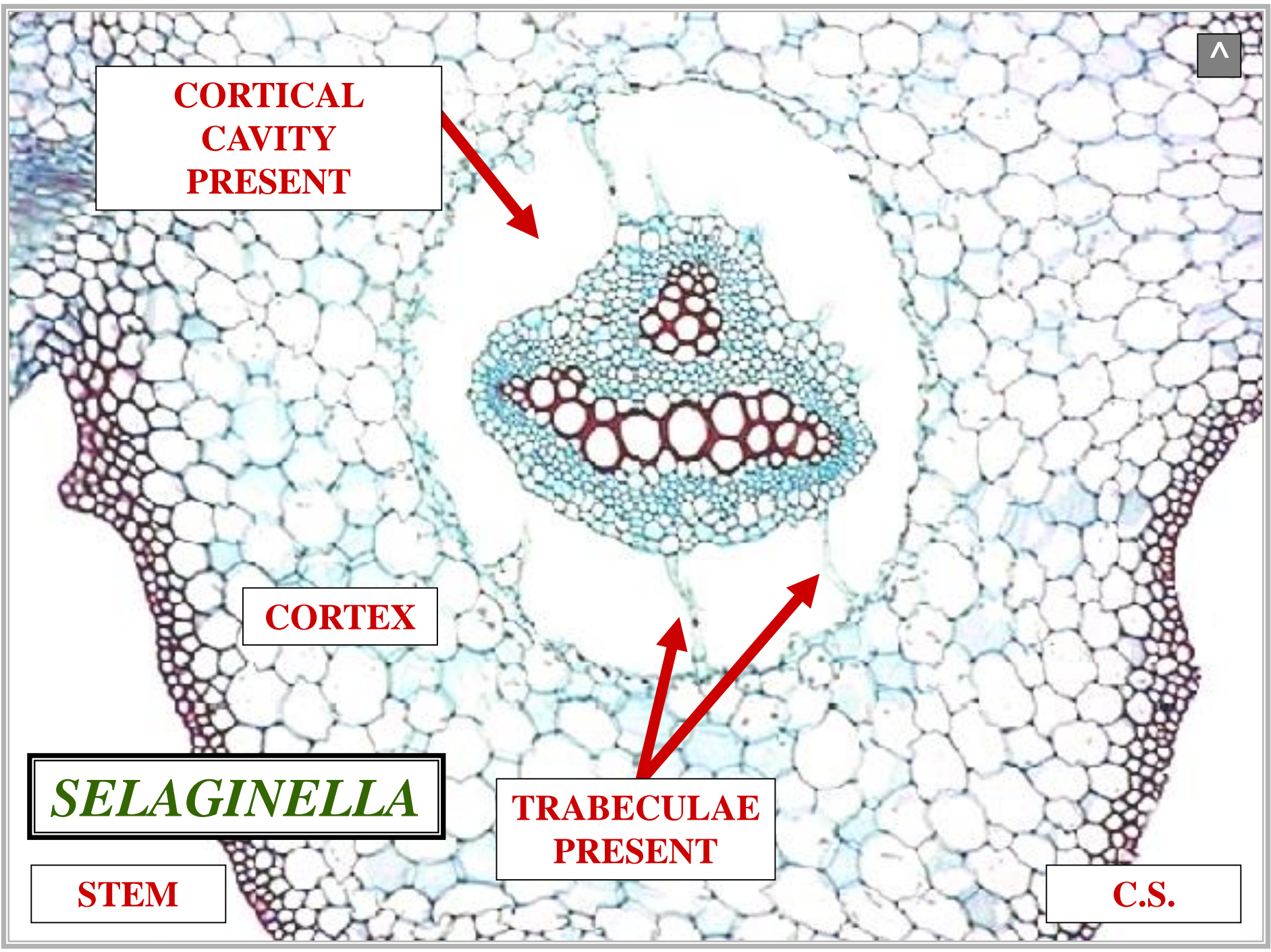
CORTEX

SELAGINELLA

STEM

**TRABECULAE
PRESENT**

C.S.

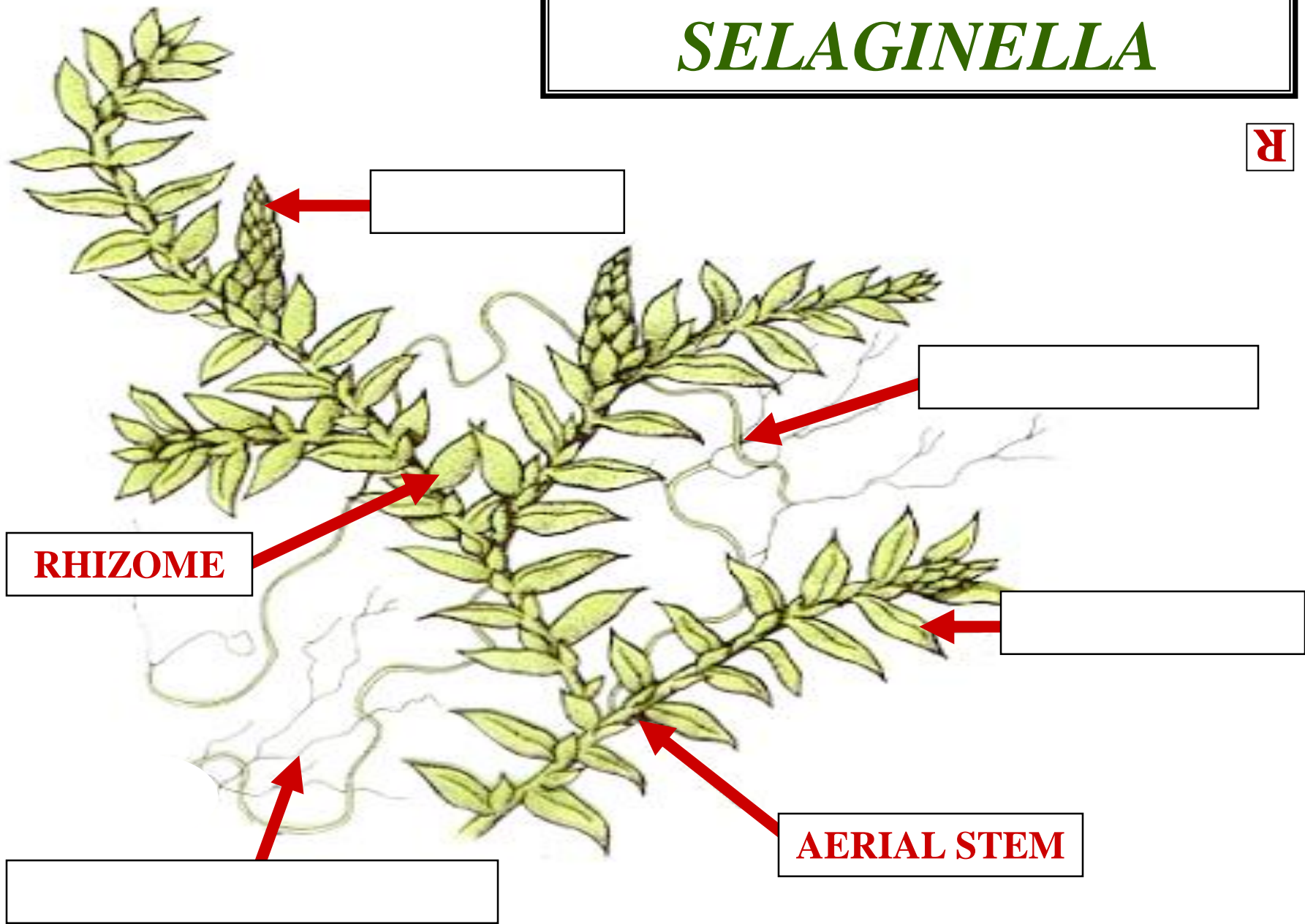




RHIZOME

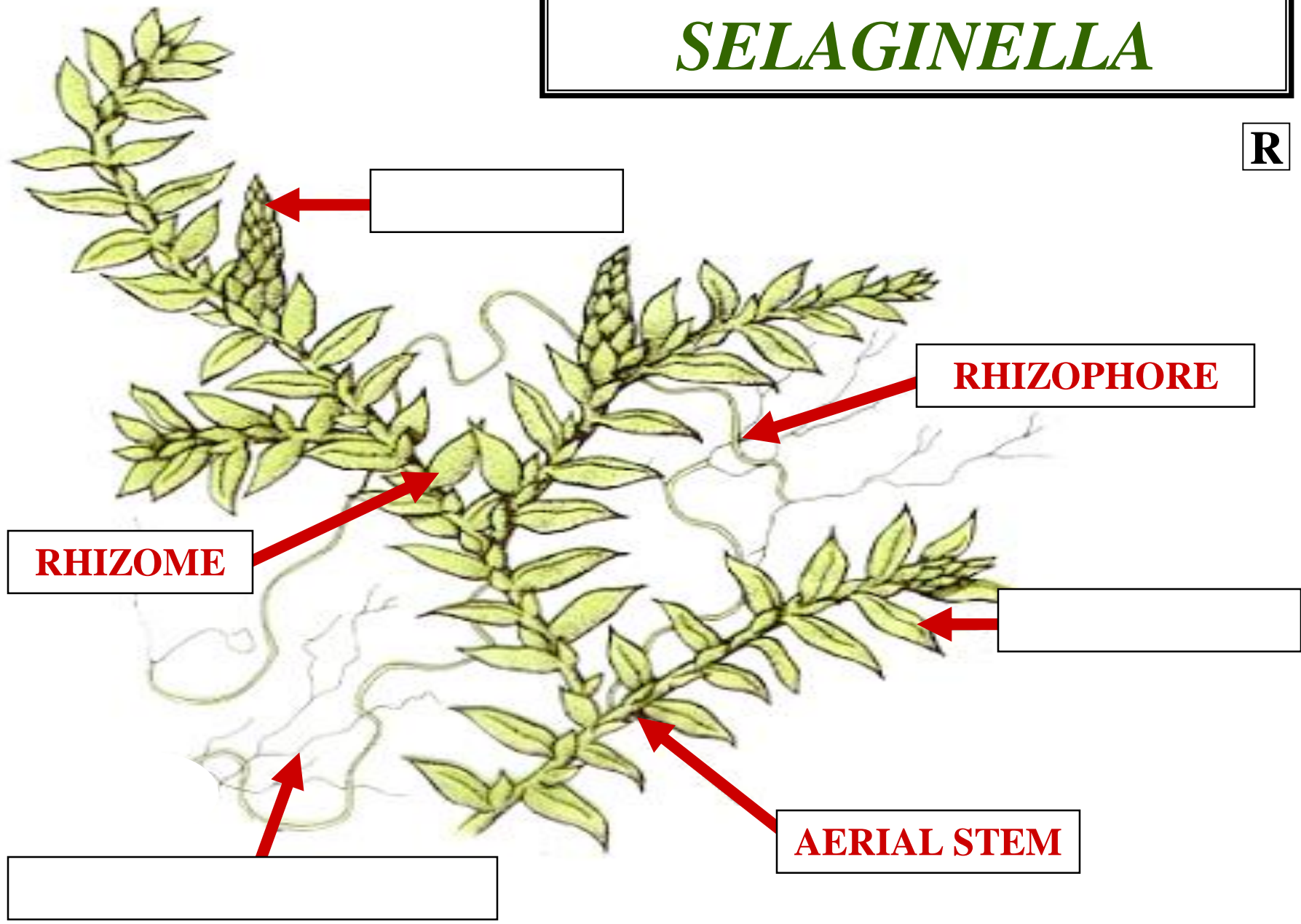
SELAGINELLA

R



SELAGINELLA

R



RHIZOPHORE

RHIZOME

AERIAL STEM

[Empty box]

[Empty box]

[Empty box]

RHIZOPHORE



SELAGINELLA
RHIZOPHORE

**POSITIVELY GEOTROPIC
STEM**

SELAGINELLA
RHIZOPHORE



SELAGINELLA

RHIZOPHORE

**POSITIVELY GEOTROPIC
STEM**

**DERIVES ADVENTITIOUS
ROOTS**

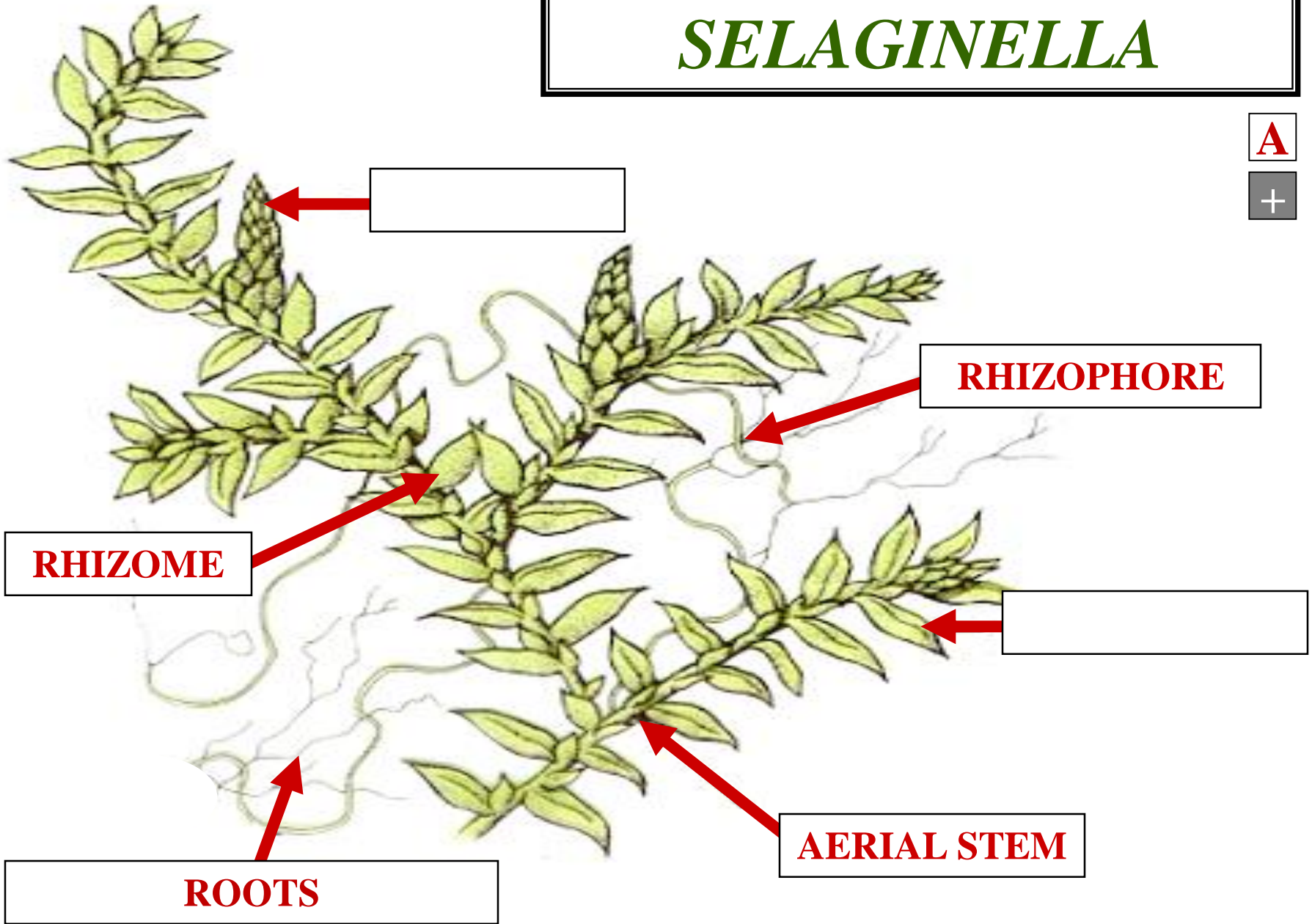
SELAGINELLA

RHIZOPHORE

SELAGINELLA

A

+



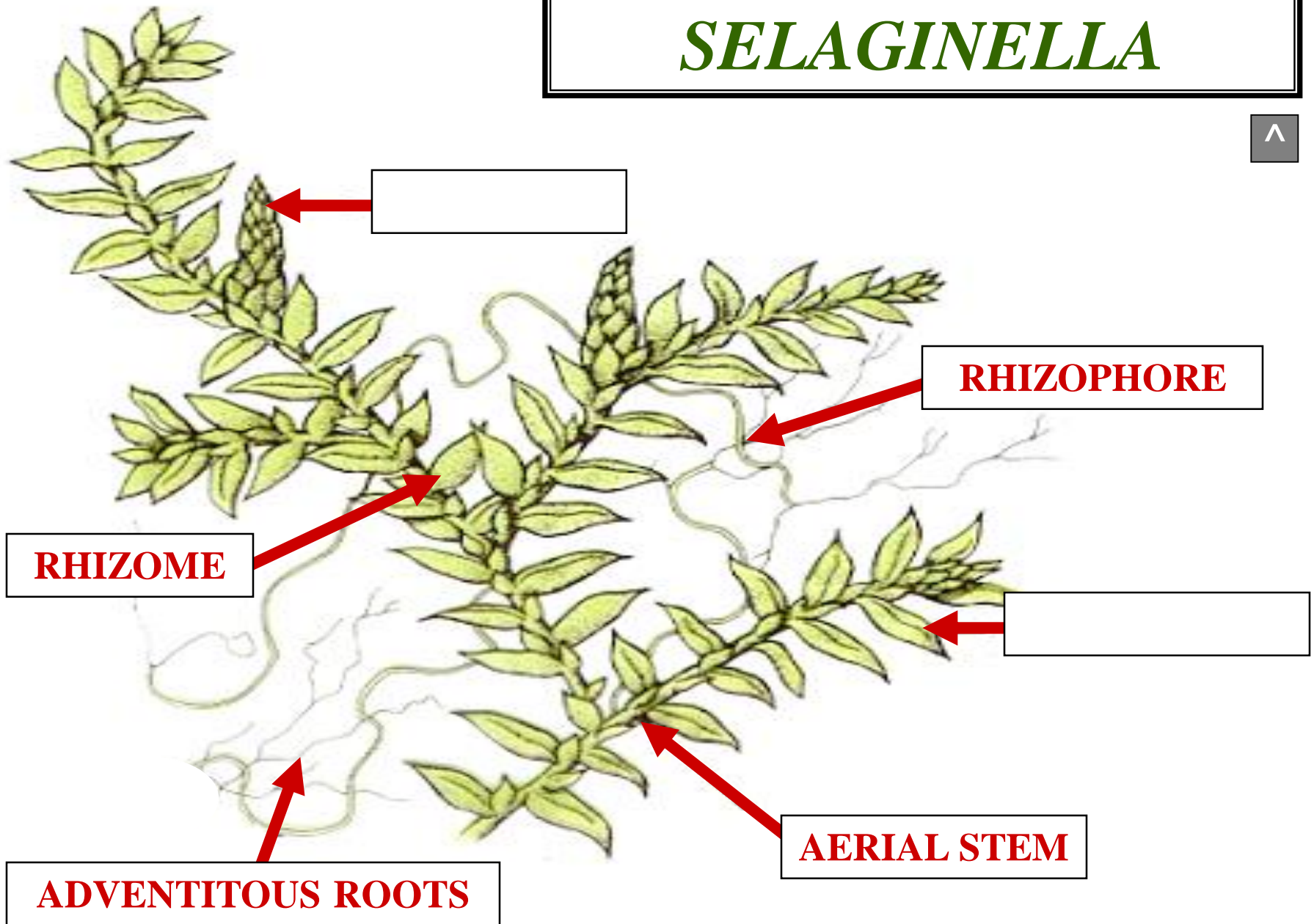
RHIZOPHORE

RHIZOME

AERIAL STEM

ROOTS

SELAGINELLA



RHIZOME

RHIZOPHORE

ADVENTITIOUS ROOTS

AERIAL STEM



LEAF



LEAF MORPHOLOGY



SELAGINELLA

SELAGINELLA

MICROPHYLL





LARGE LEAF

SELAGINELLA

MICROPHYLL



LARGE LEAF

SMALL LEAF

SELAGINELLA

MICROPHYLL



LARGE LEAF

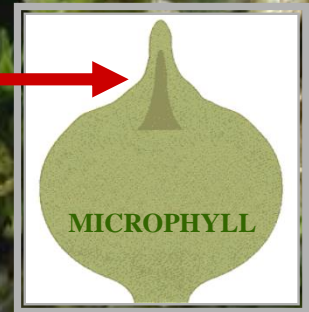


SMALL LEAF

SELAGINELLA

ANISOPHYLLOUS

LIGULE

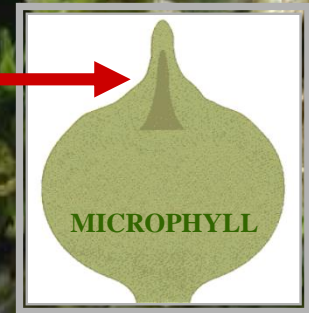


MICROPHYLL

SELAGINELLA

ANISOPHYLLOUS

LIGULE PRESENT



SELAGINELLA

ANISOPHYLLOUS

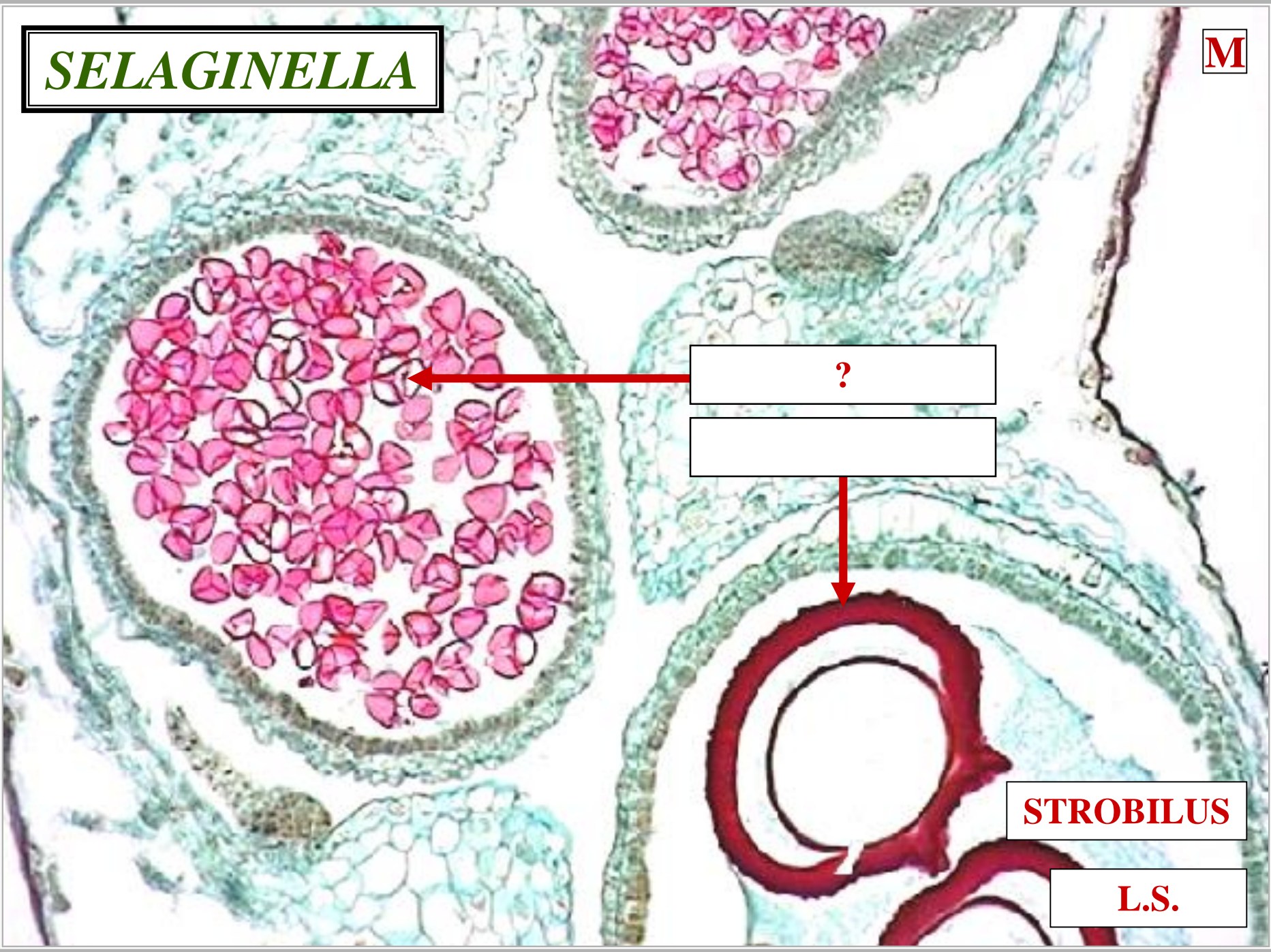
LIGULE PRESENT



SPORE HABIT

SELAGINELLA

M



?

STROBILUS

L.S.

SELAGINELLA

M

MICROSPORES

?

STROBILUS

L.S.

