

# *SELAGINELLA*

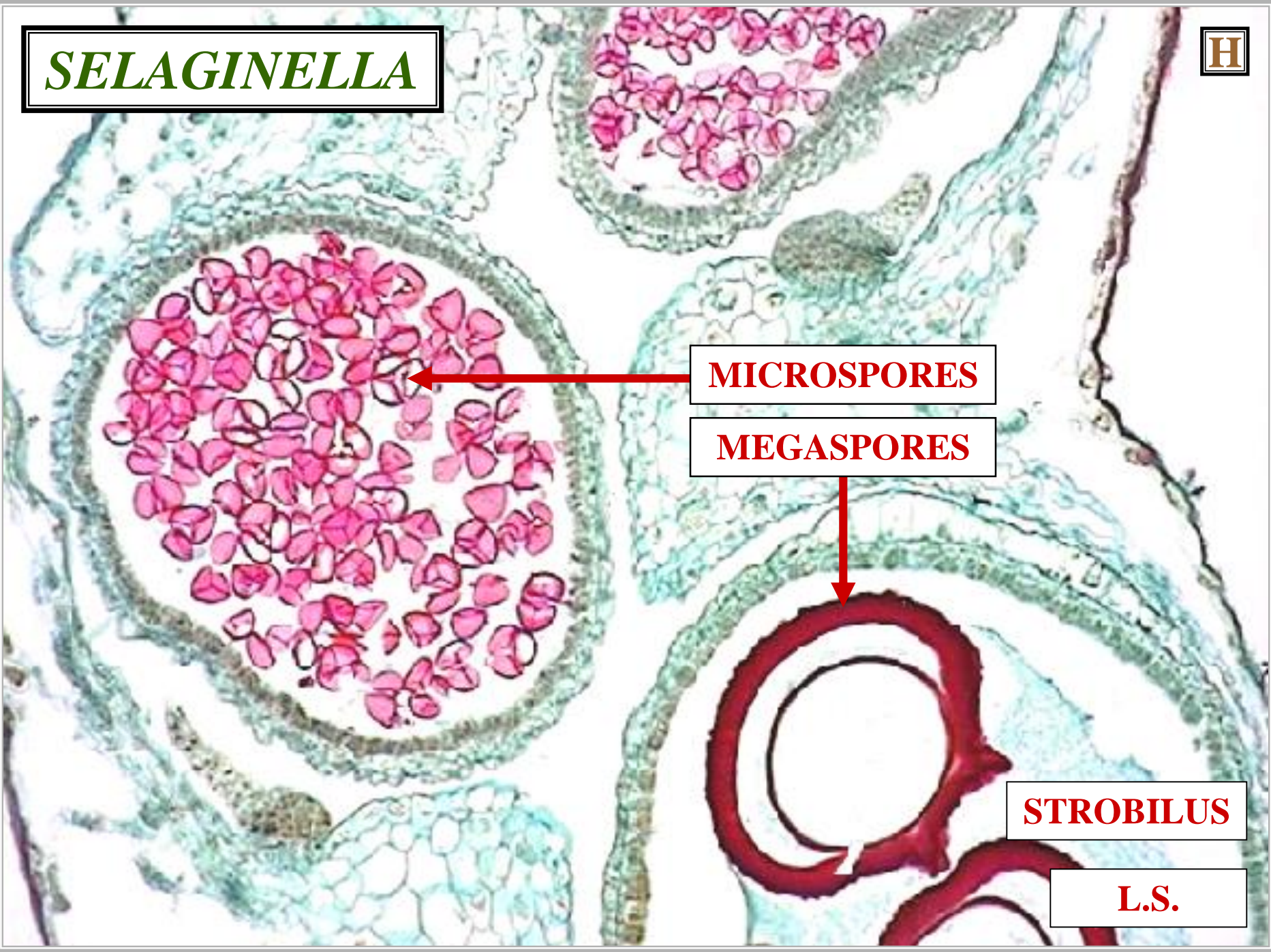
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MICROSPORES

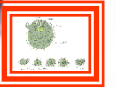
MEGASPORES

STROBILUS

L.S.



# *SELAGINELLA*



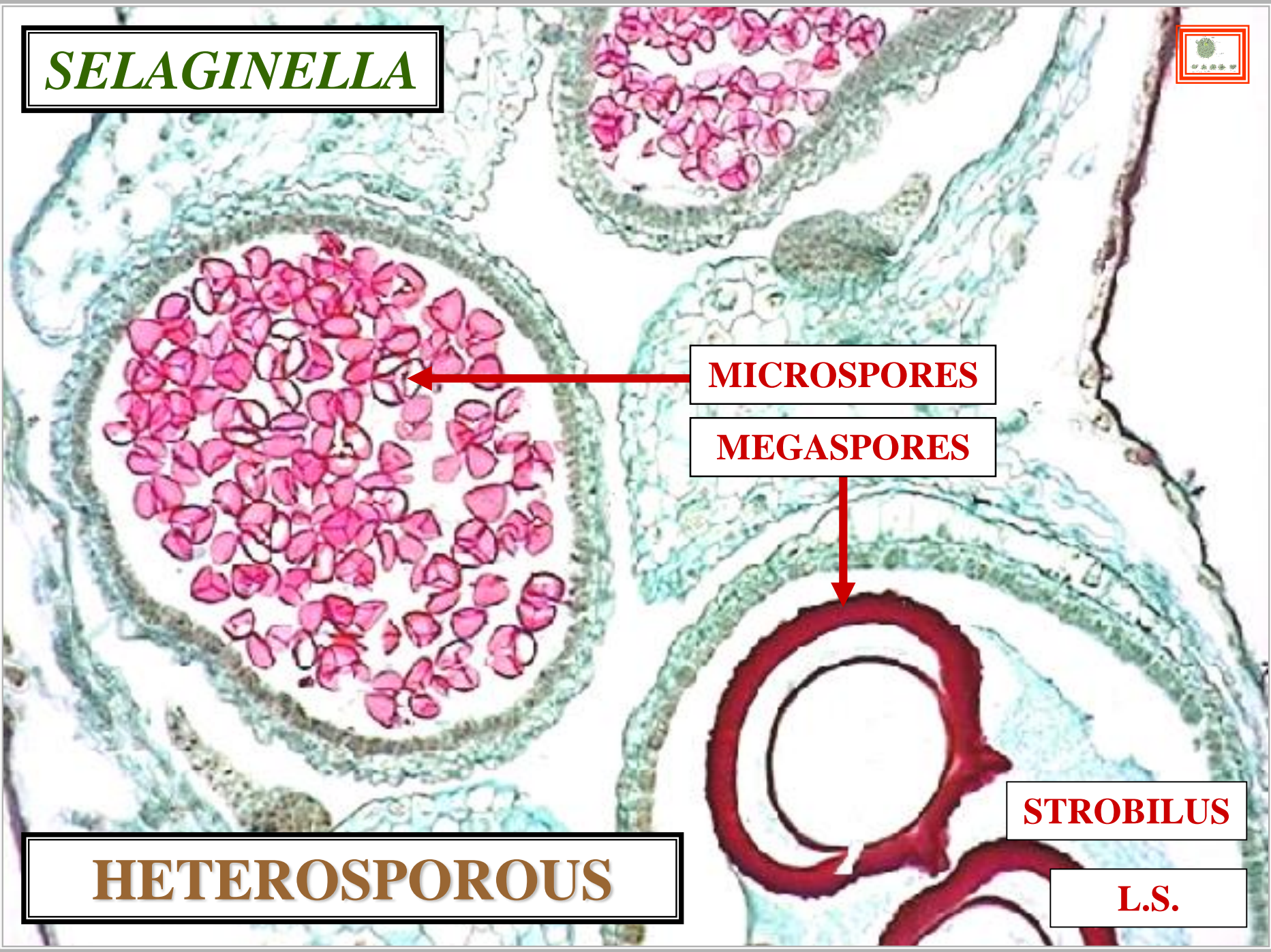
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**MEGASPORES**

**STROBILUS**

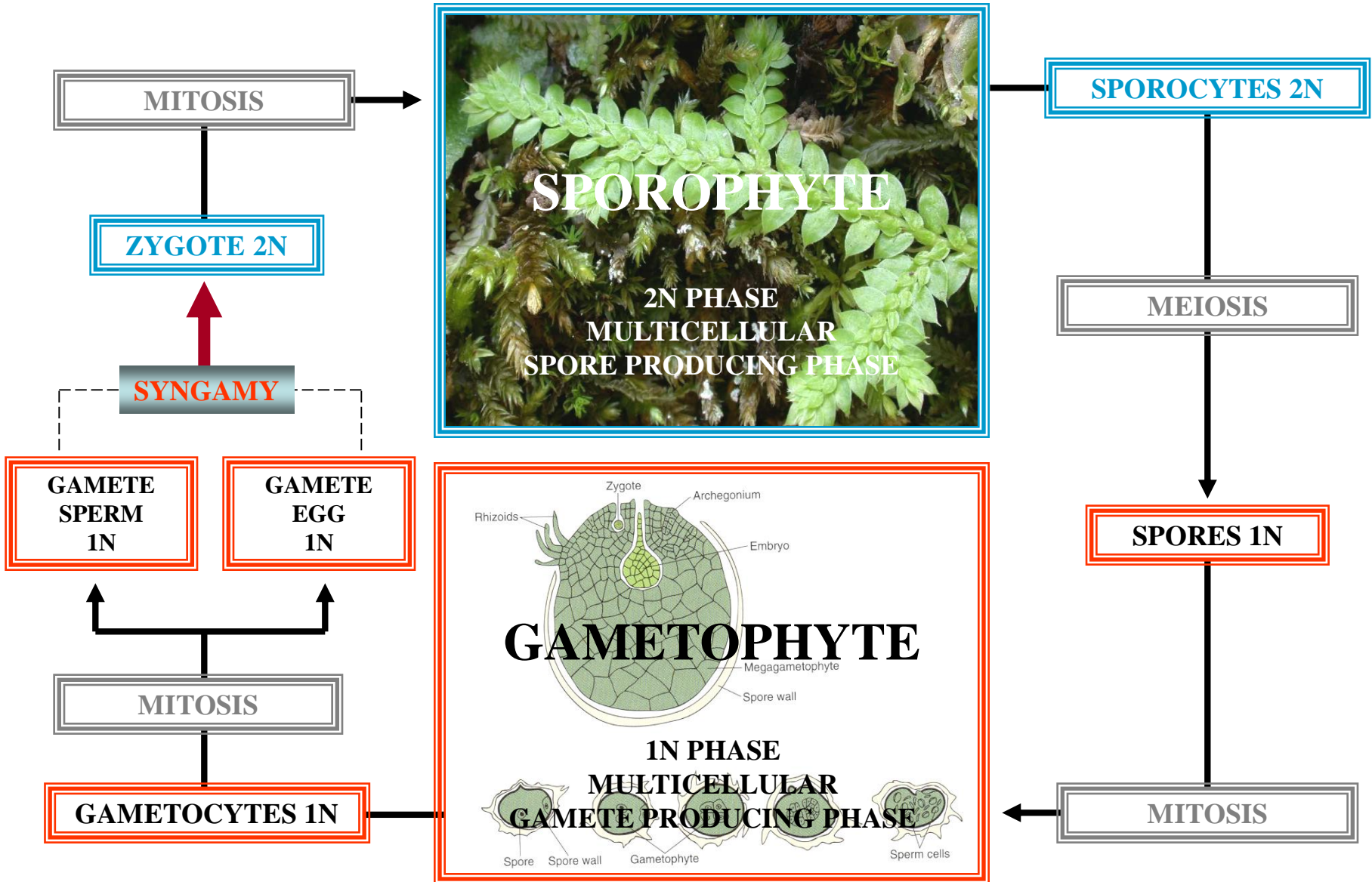
**HETEROSPOROUS**

**L.S.**



# SELAGINALLES

## LIFE CYCLE





# GAMETOPHYTE CHARACTERS

# *SELAGINELLA*



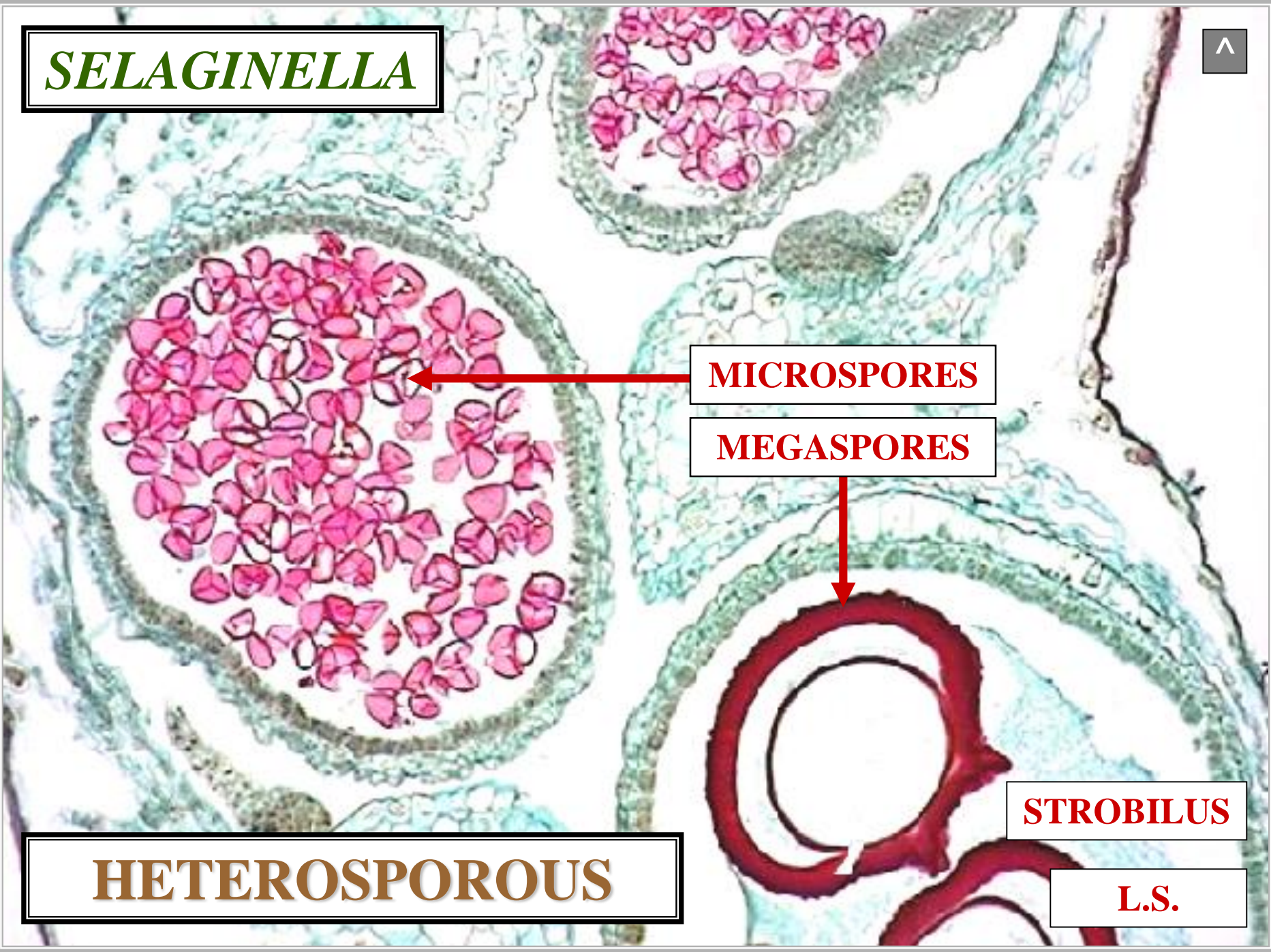
**MICROSPORES**

**MEGASPORES**

**STROBILUS**

**HETEROSPOROUS**

**L.S.**

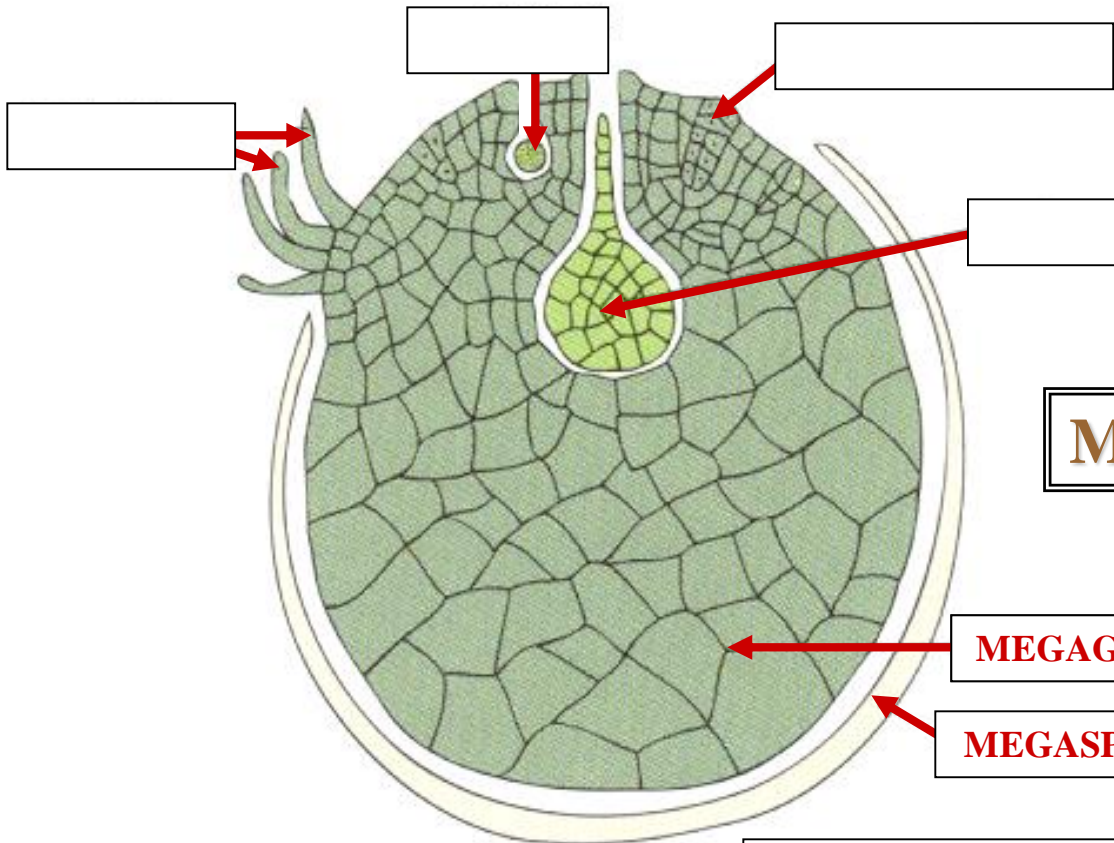




# ENDOSPORIC GAMETOPHYTE

# *SELAGINELLA*

EN



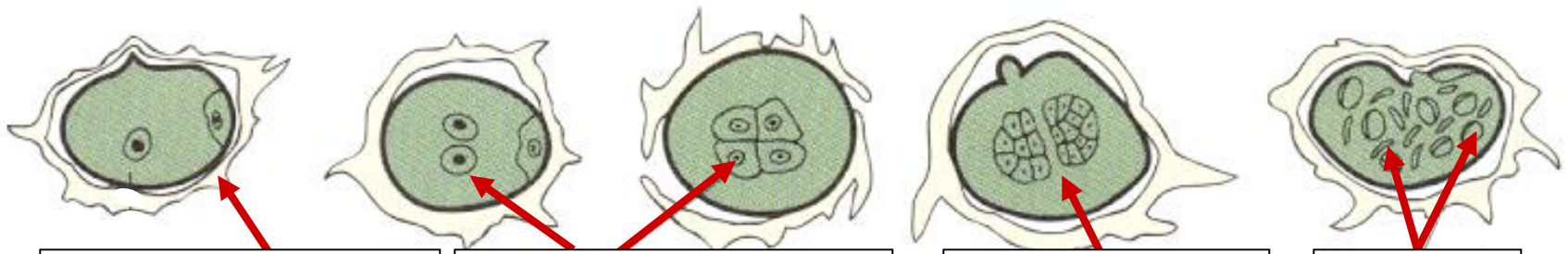
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**MEGAGAMETOPHYTE**

**MEGASPORE WALL**

**MICROSPORE**

**GAMETOPHYTE**



**MICROSPORE WALL**

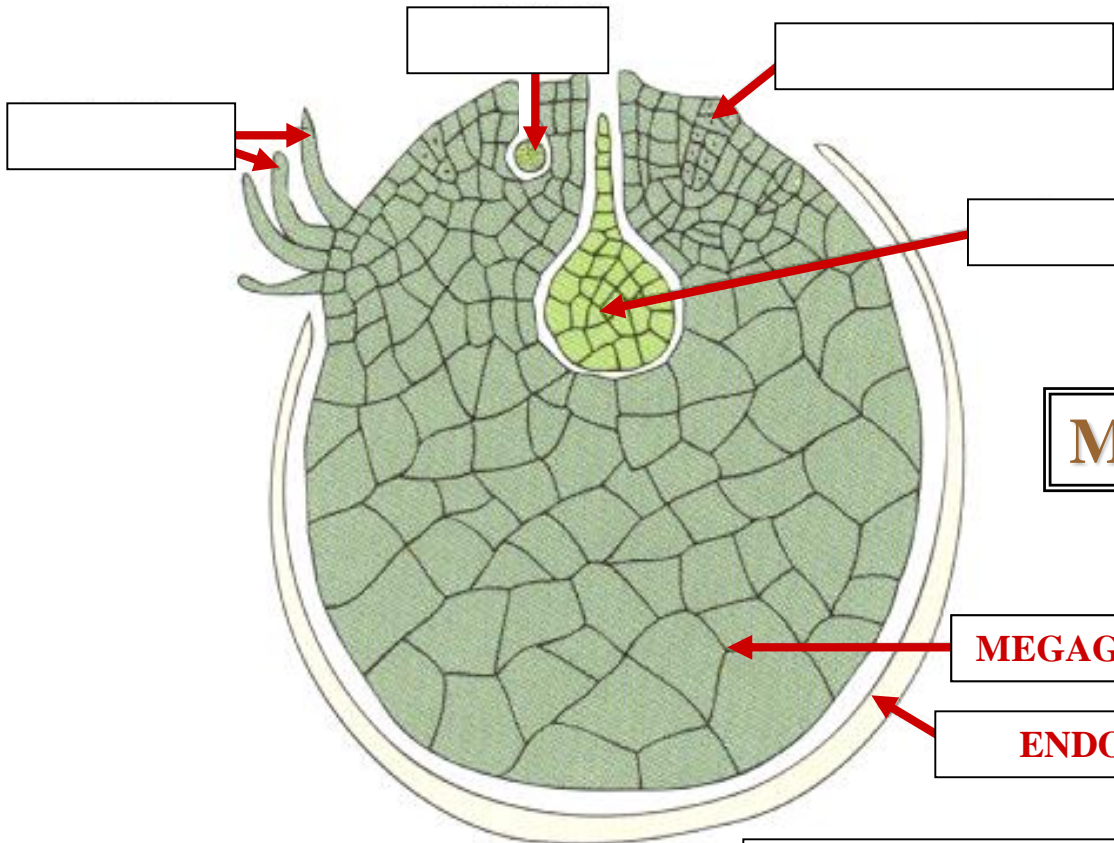
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# *SELAGINELLA*

**EP**



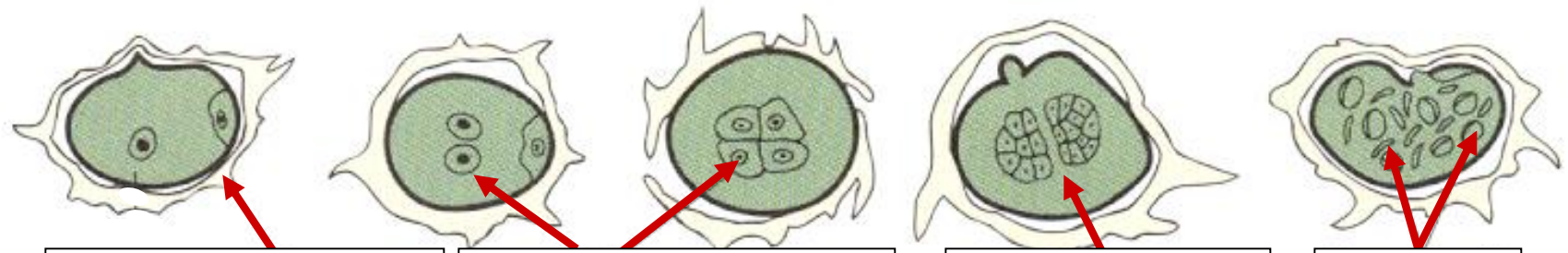
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**MEGAGAMETOPHYTE**

**ENDOSPORIC**

**MICROSPORE**

**GAMETOPHYTE**



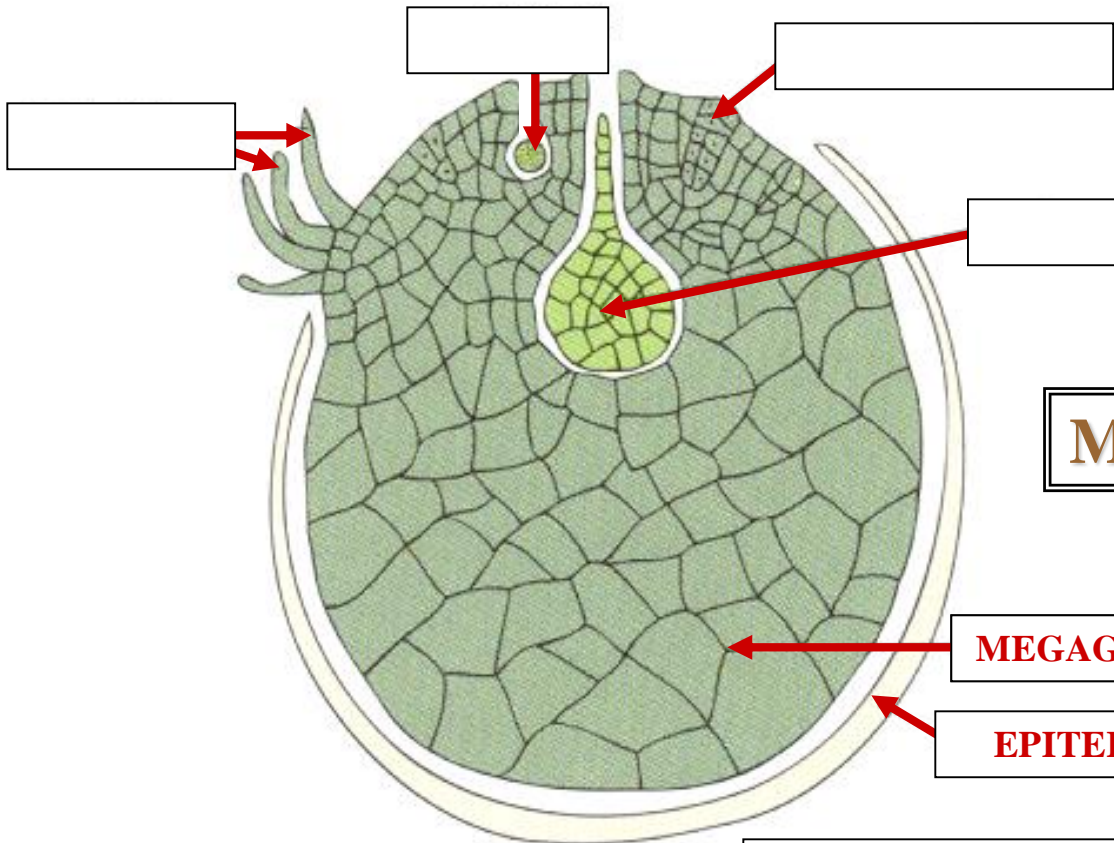
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**MICROGAMETOPHYTE**



# *SELAGINELLA*

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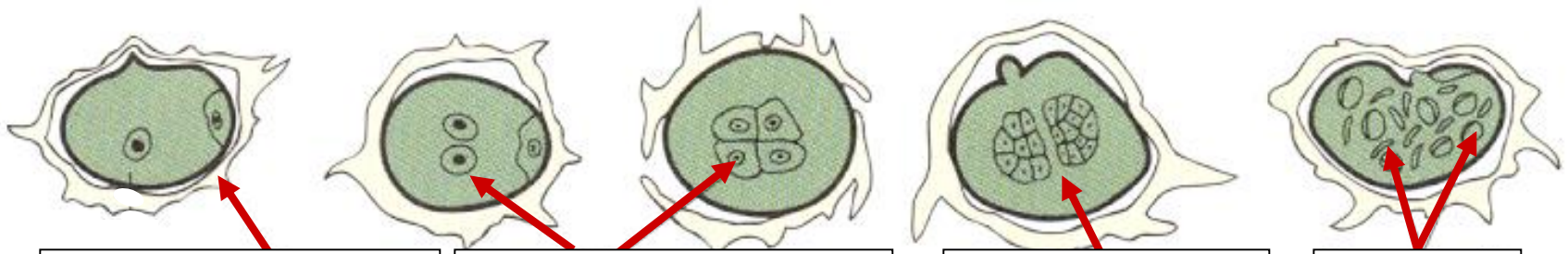
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**MEGAGAMETOPHYTE**

**EPITERRANEAN**

**MICROSPORE**

**GAMETOPHYTE**



**EPITERRANEAN**

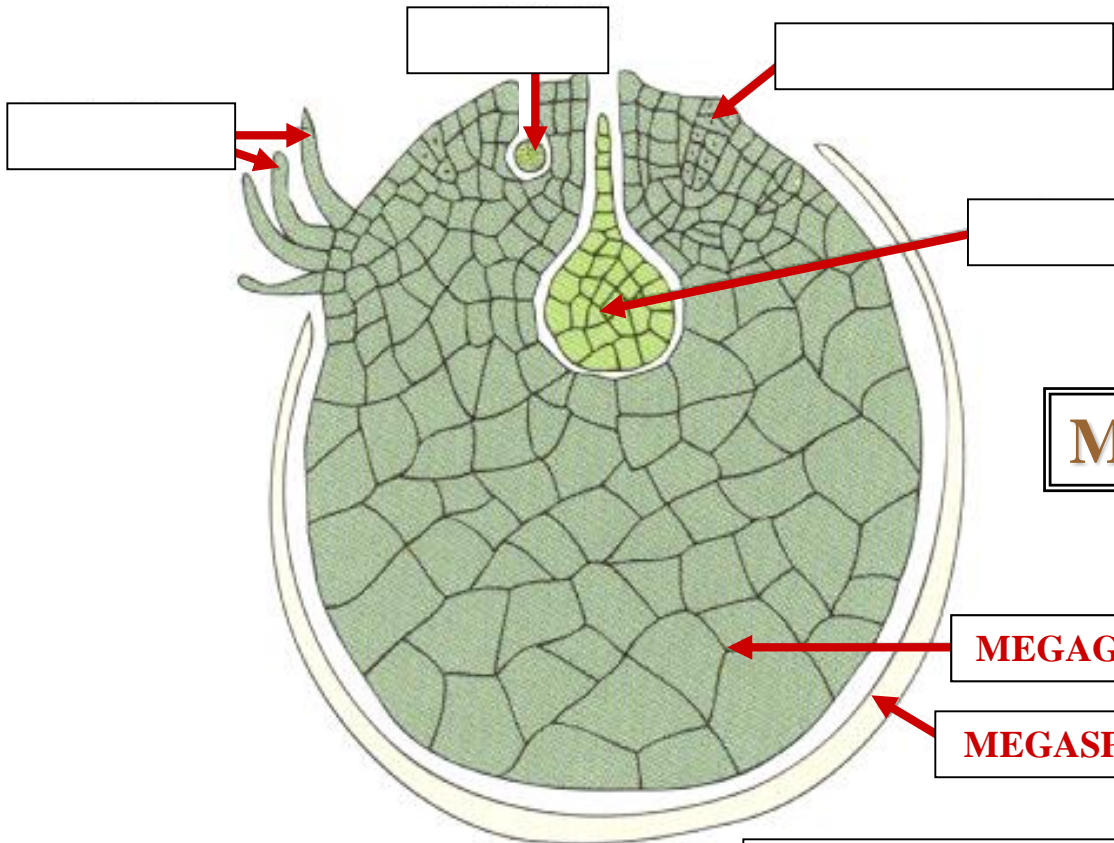
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# *SELAGINELLA*

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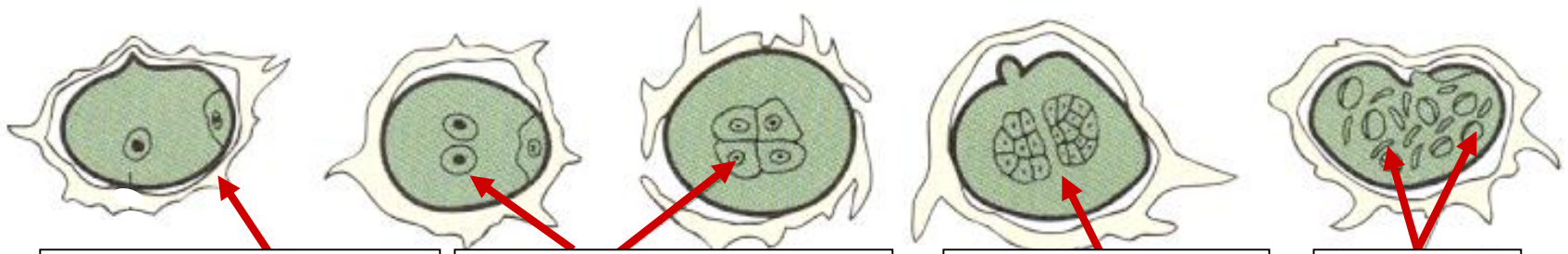
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**MEGAGAMETOPHYTE**

**MEGASPORE WALL**

**MICROSPORE**

**GAMETOPHYTE**



**MICROSPORE WALL**

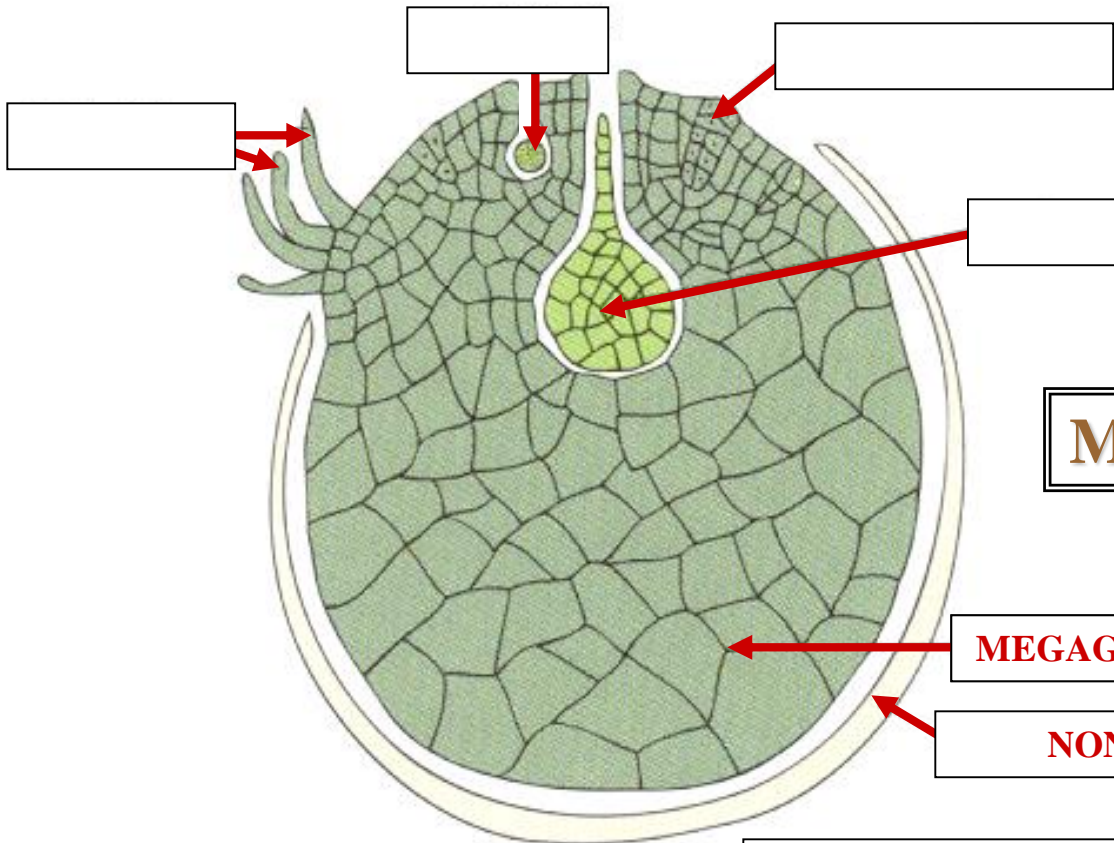
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# *SELAGINELLA*

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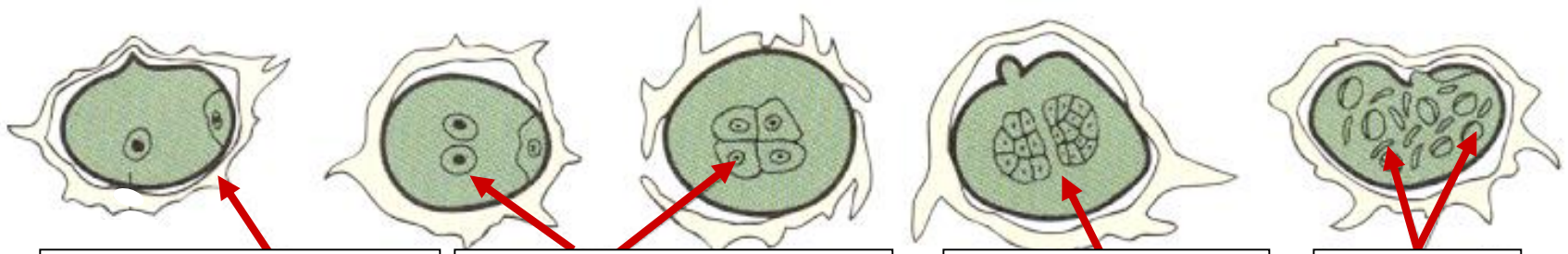
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**MEGAGAMETOPHYTE**

**NON-PSYN**

**MICROSPORE**

**GAMETOPHYTE**

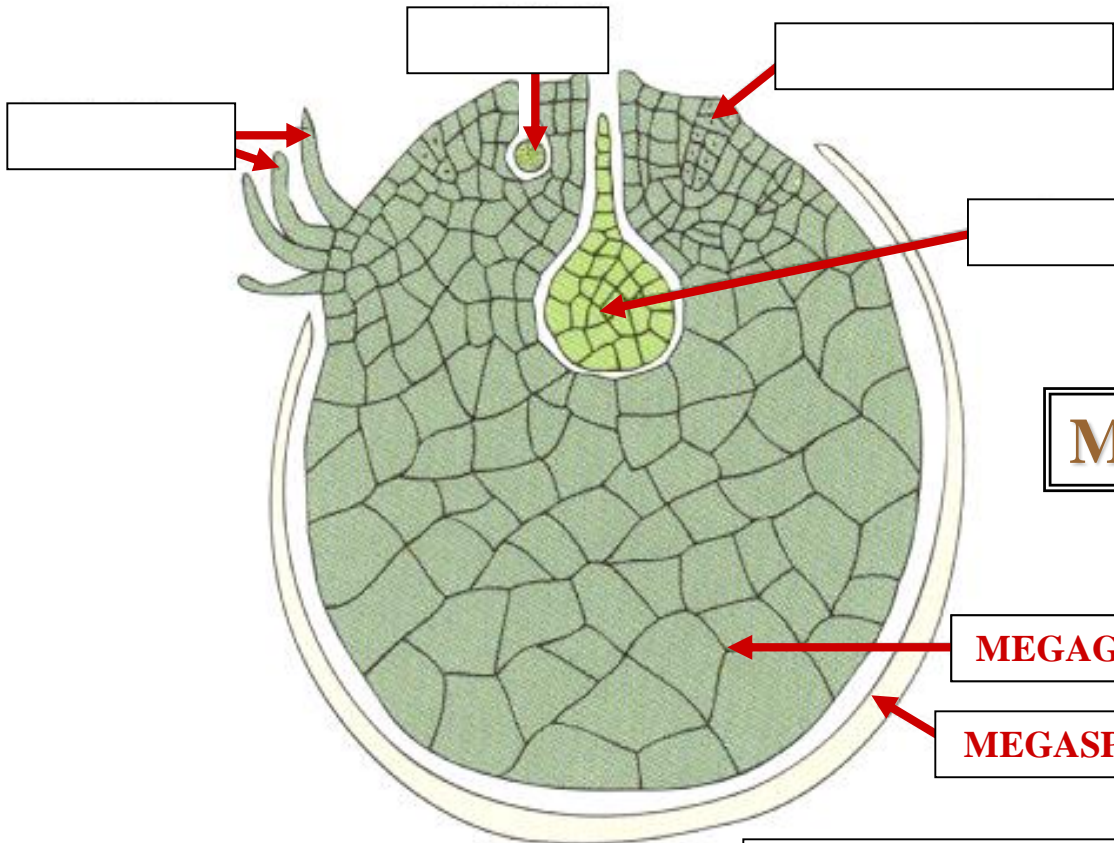


**NON-PSYN**

**MICROGAMETOPHYTE**

# *SELAGINELLA*

M



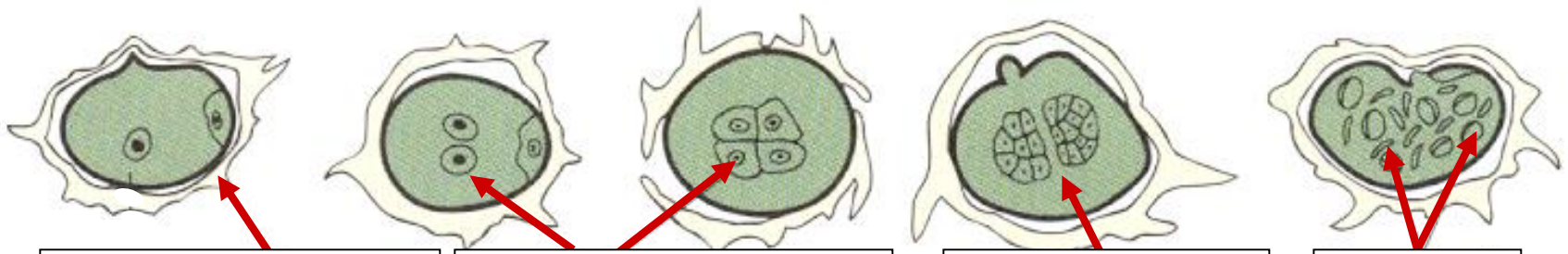
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**MEGAGAMETOPHYTE**

**MEGASPORE WALL**

**MICROSPORE**

**GAMETOPHYTE**

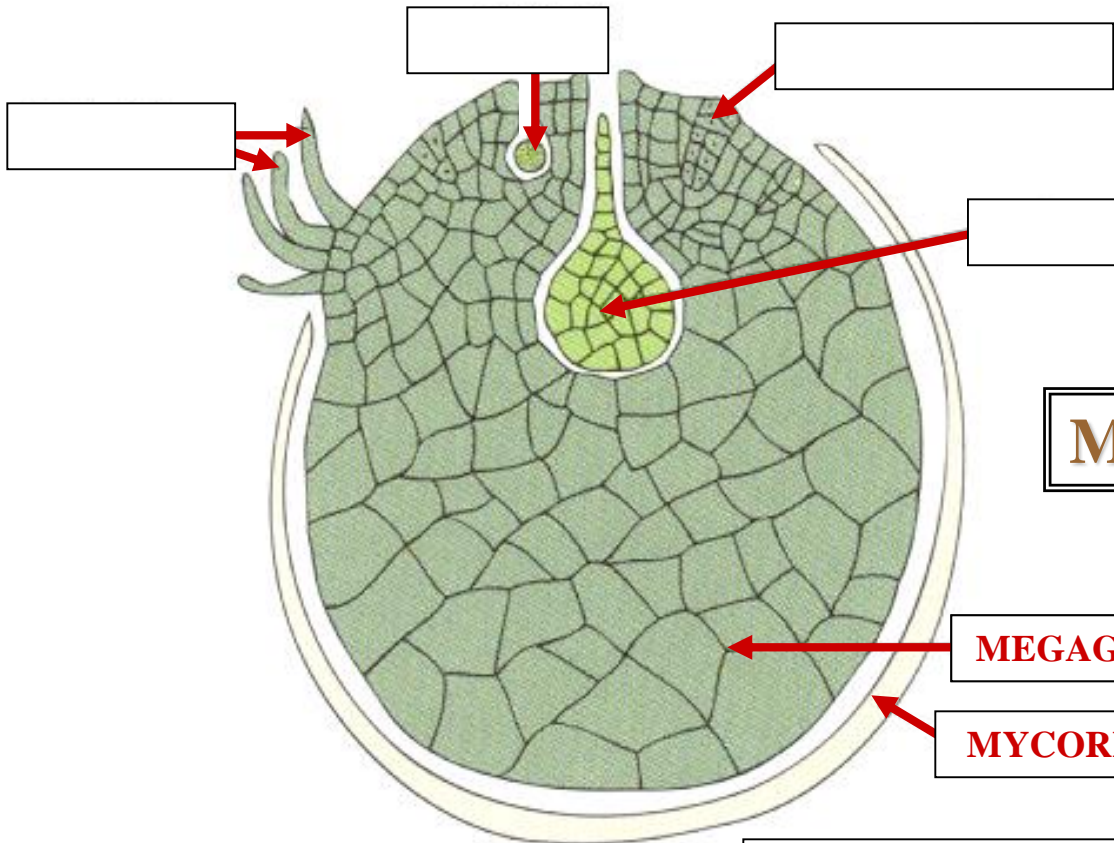


**MICROSPORE WALL**

**MICROGAMETOPHYTE**

# *SELAGINELLA*

R



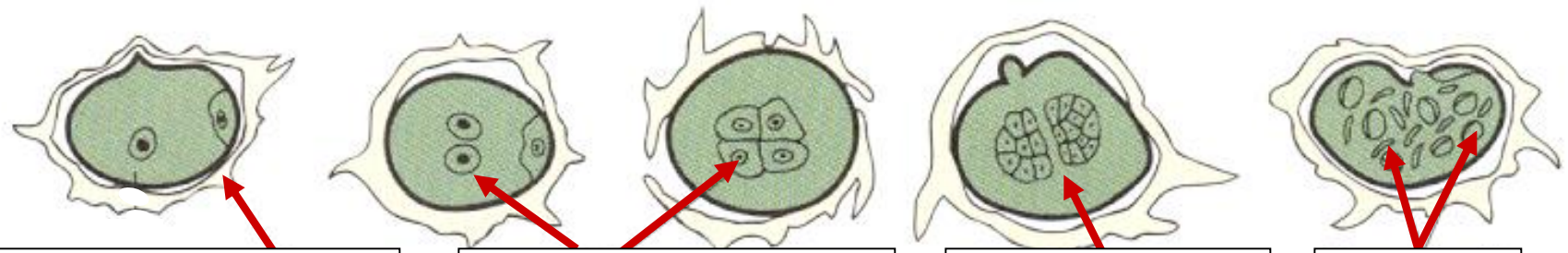
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**MEGAGAMETOPHYTE**

**MYCORRHIZAE ABSENT**

**MICROSPORE**

**GAMETOPHYTE**

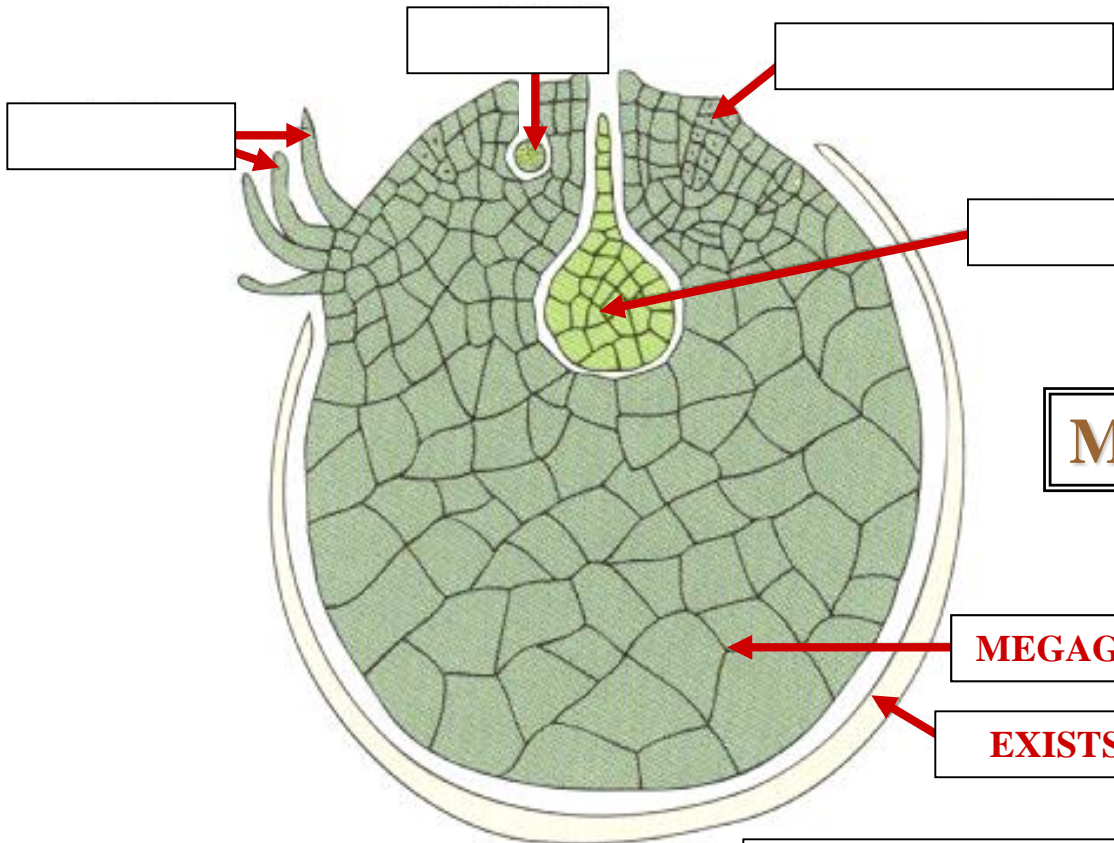


**MYCORRHIZAE ABSENT**

**MICROGAMETOPHYTE**

# *SELAGINELLA*

EN



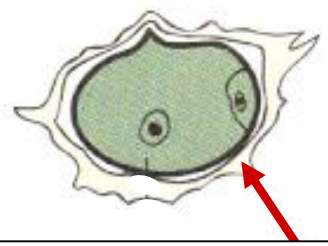
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**MEGAGAMETOPHYTE**

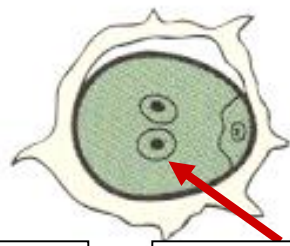
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**MICROSPORE**

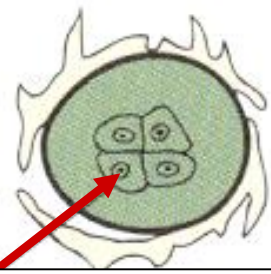
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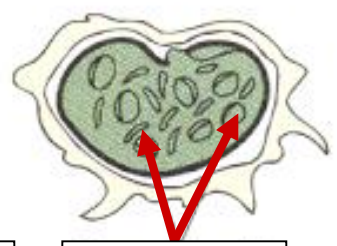
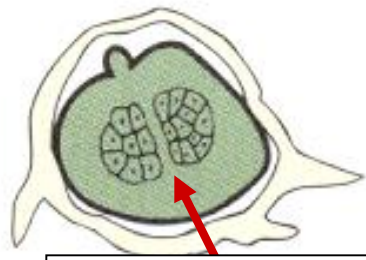
**EXISTS ON RESERVES**



**MICROGAMETOPHYTE**



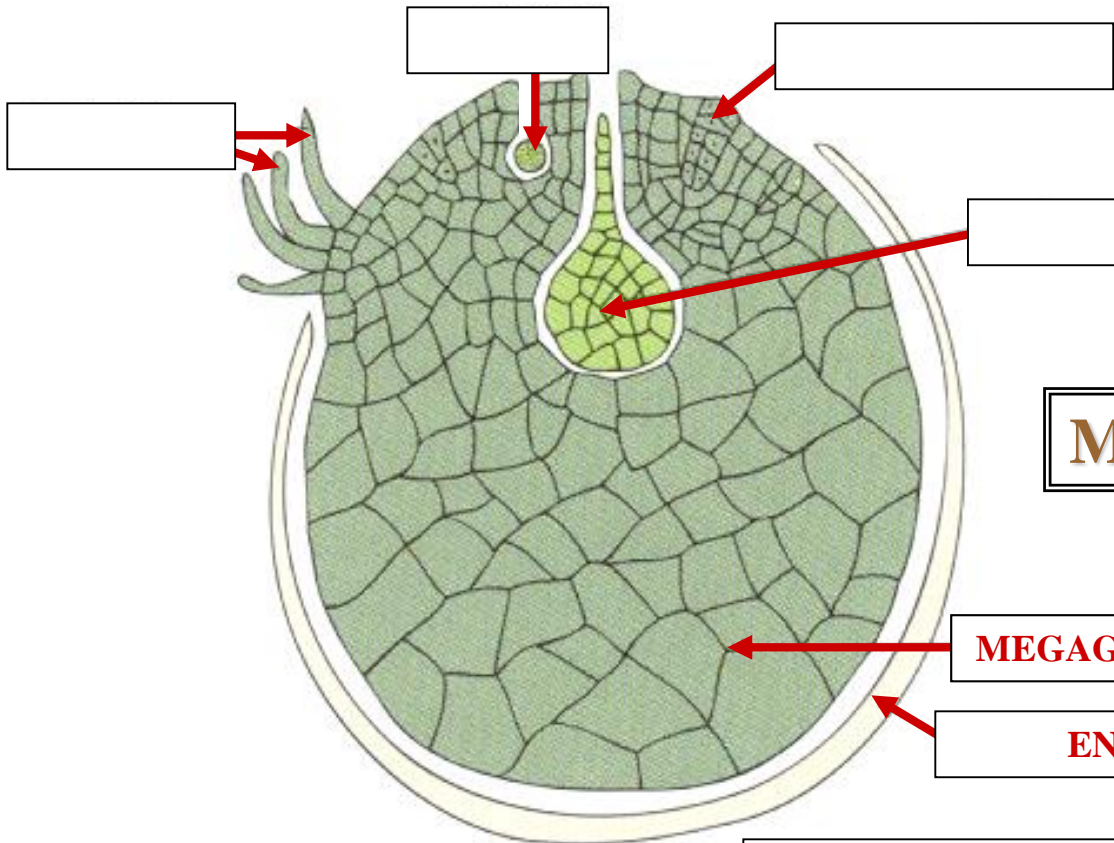
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# *SELAGINELLA*

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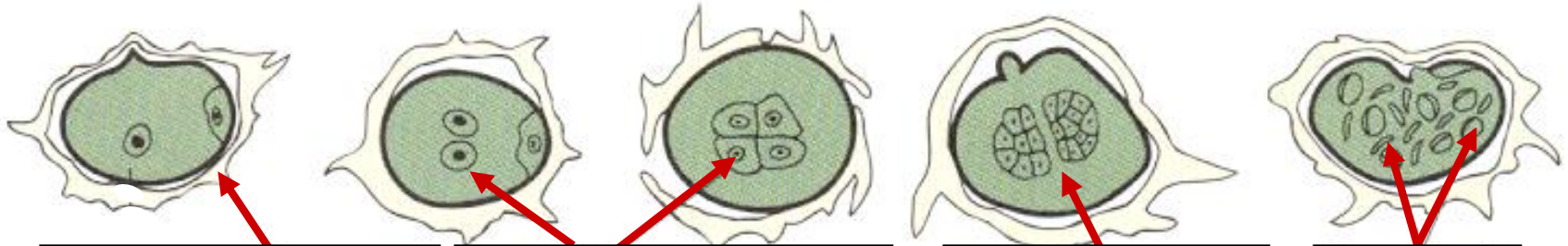
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**MEGAGAMETOPHYTE**

**ENDOSPORIC**

**MICROSPORE**

**GAMETOPHYTE**



**ENDOSPORIC**

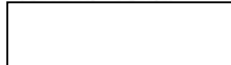
**MICROGAMETOPHYTE**

# *SELAGINELLA*

AB



ARCHEGONIUM



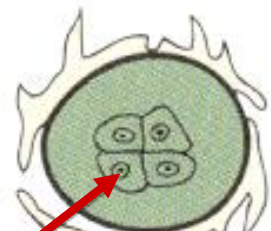
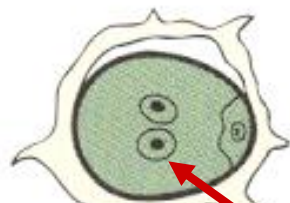
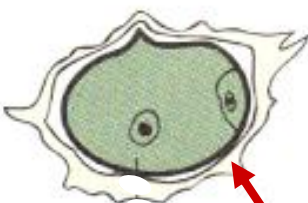
MEGASPORE

MEGAGAMETOPHYTE

UNISEXUAL

MICROSPORE

GAMETOPHYTE



UNISEXUAL

MICROGAMETOPHYTE

ANTHERIDIUM



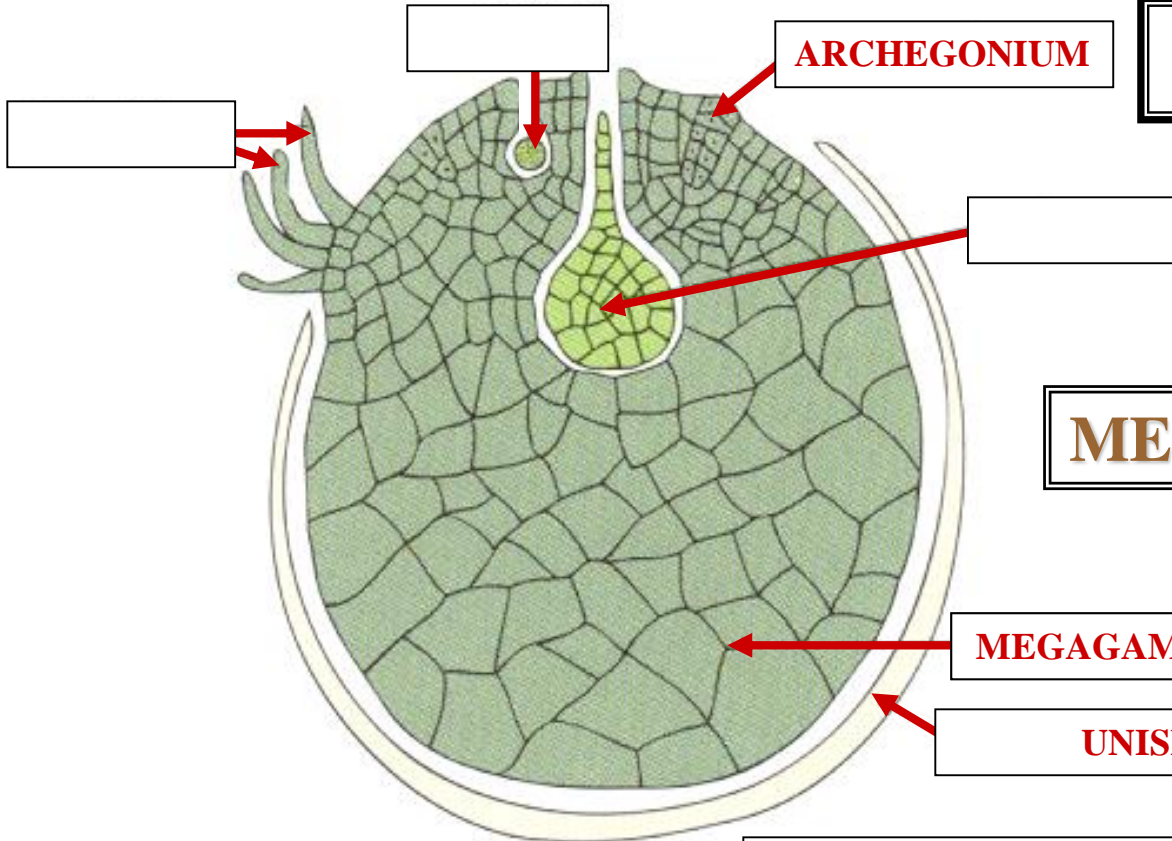


# *SELAGINELLA*

ARCHEGONIUM

R

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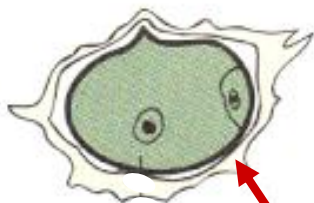
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MEGAGAMETOPHYTE

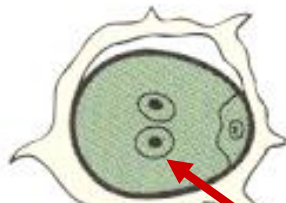
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MICROSPORE

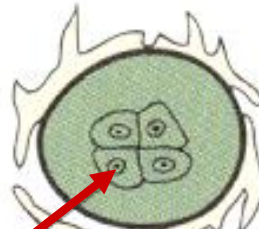
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UNISEXUAL



MICROGAMETOPHYTE



ABSENT

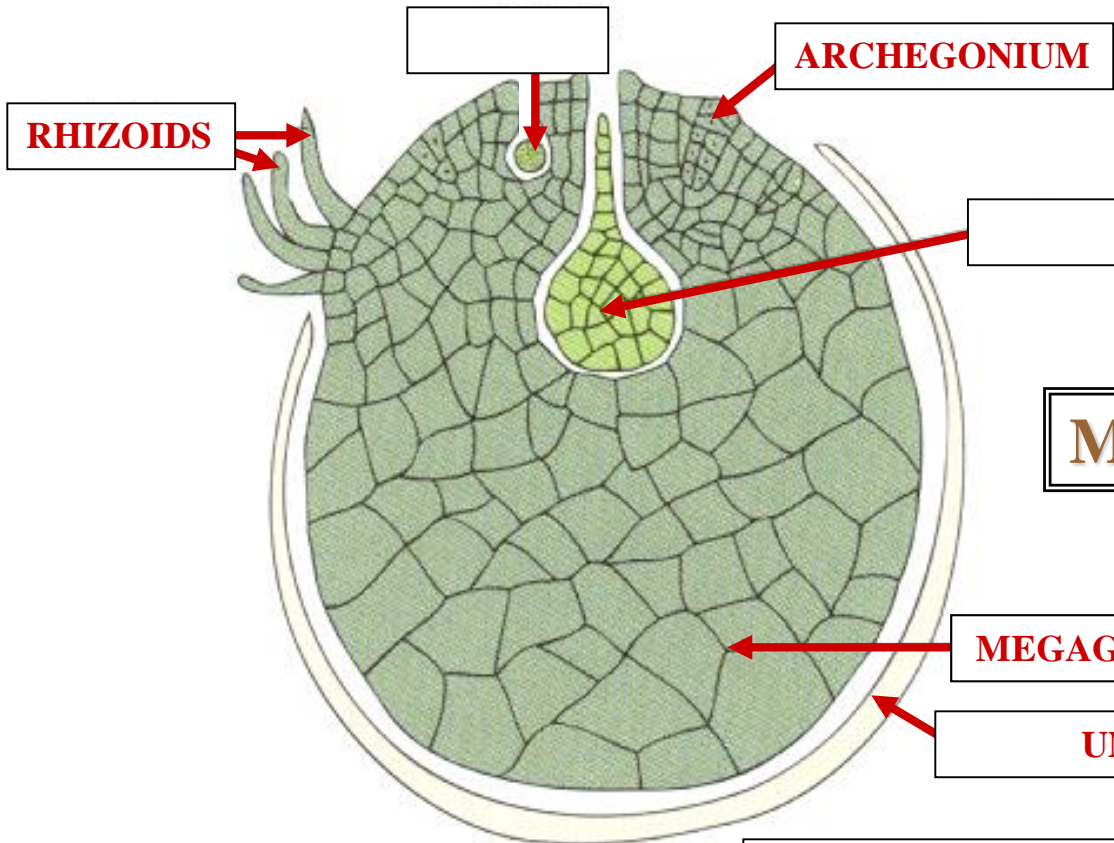


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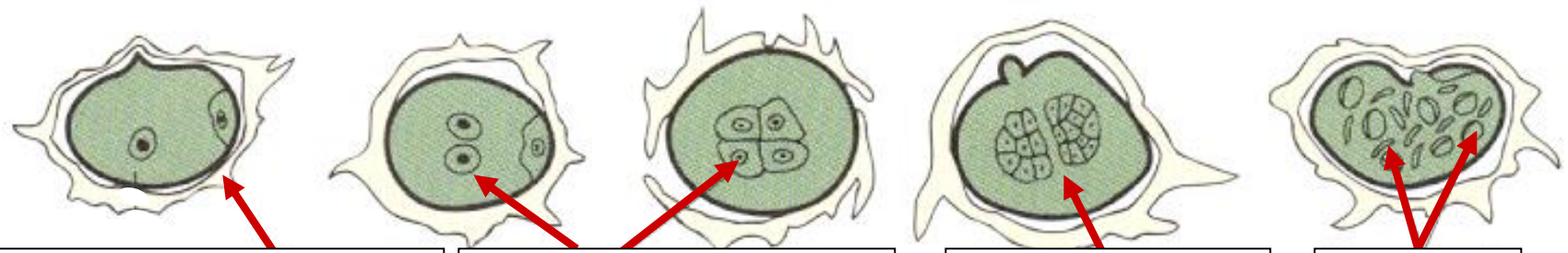
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## MICROSPORE

## GAMETOPHYTE



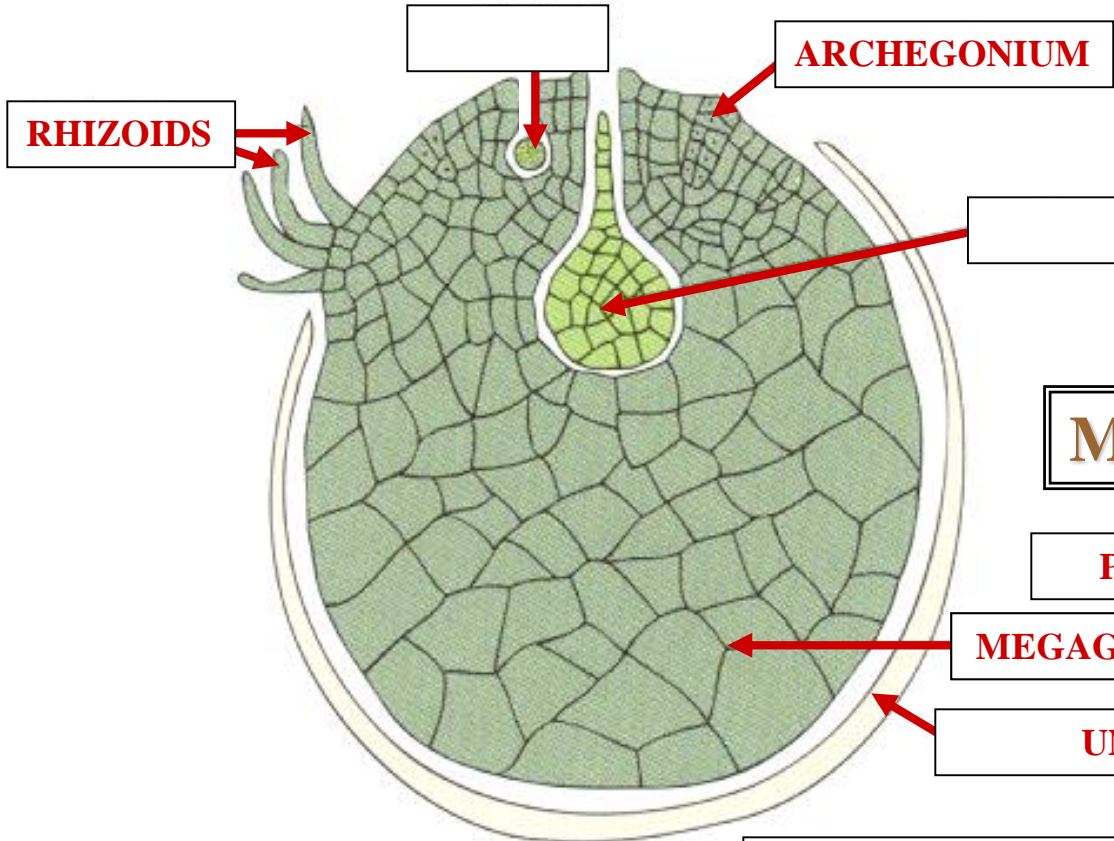
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MICROGAMETOPHYTE

ABSENT

# *SELAGINELLA*

P



**MEGASPORE**

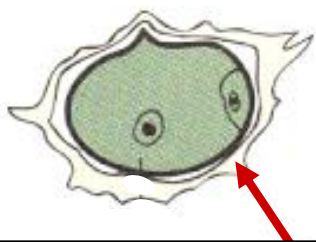
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**MEGAGAMETOPHYTE**

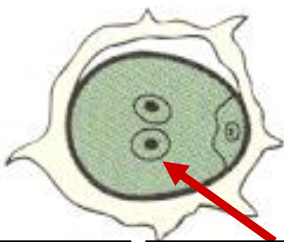
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**MICROSPORE**

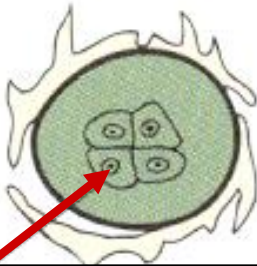
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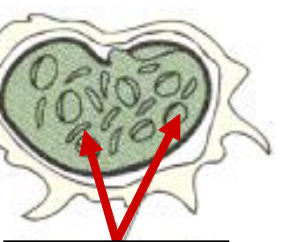
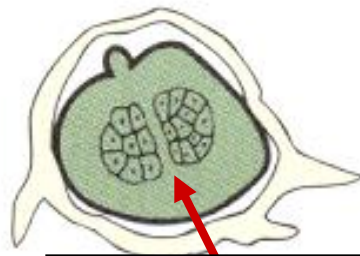
**UNISEXUAL**



**MICROGAMETOPHYTE**



**ABSENT**



**ABSENT**

**PRECOCIOUS**

**MEGAGAMETOPHYTE**



# ***SELAGINELLA***

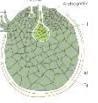
**PRECOCIOUS MEGAGAMETOPHYTE**

**STARTS DEVELOPMENT  
WITHIN  
MEGASPORANGIUM**

***SELAGINELLA***

**PRECOCIOUS MEGAGAMETOPHYTE**

# *SELAGINELLA*



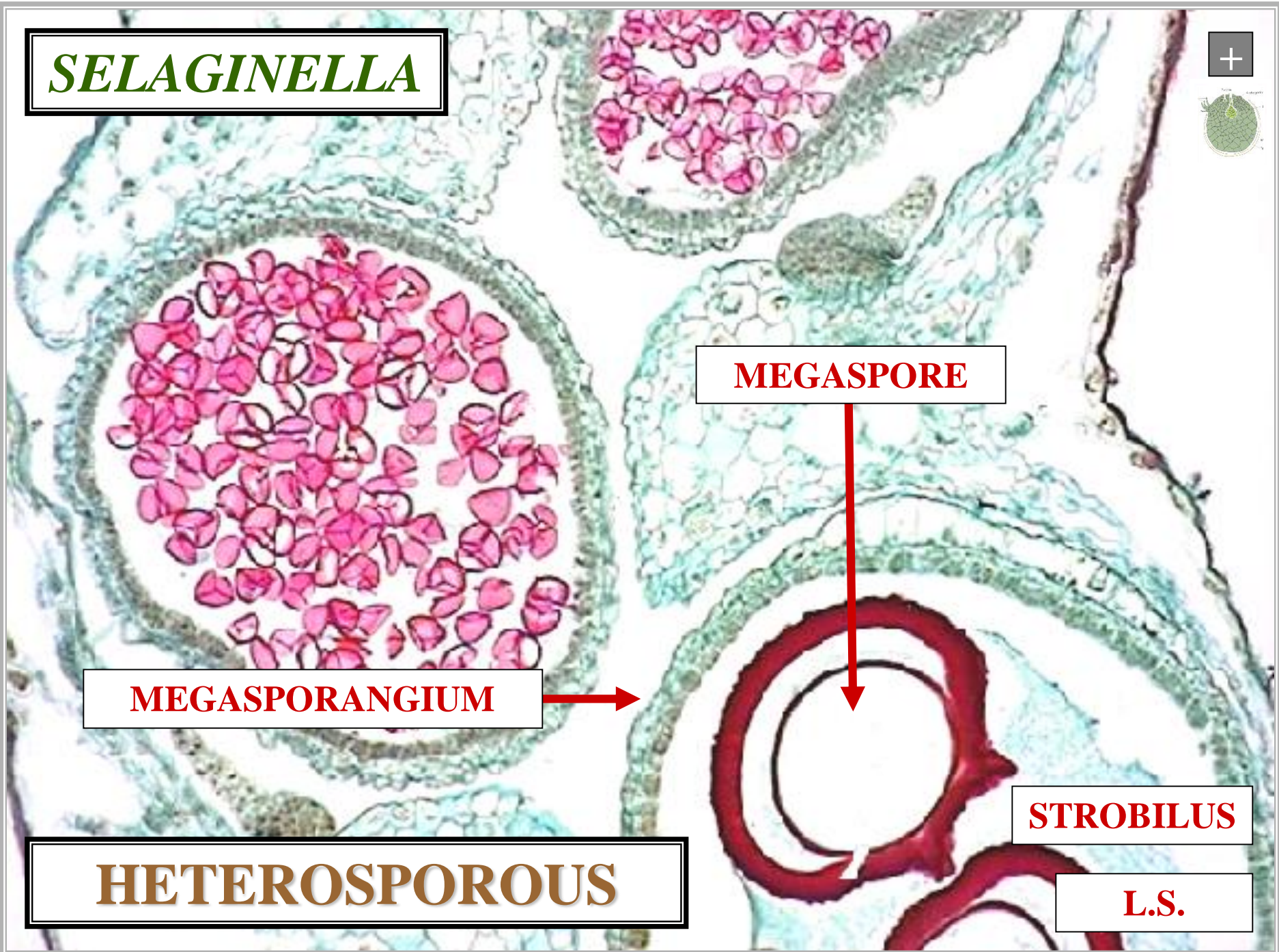
**MEGASPORE**

**MEGASPORANGIUM**

**STROBILUS**

**HETEROSPOROUS**

**L.S.**



# *SELAGINELLA*

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MEGASPORE

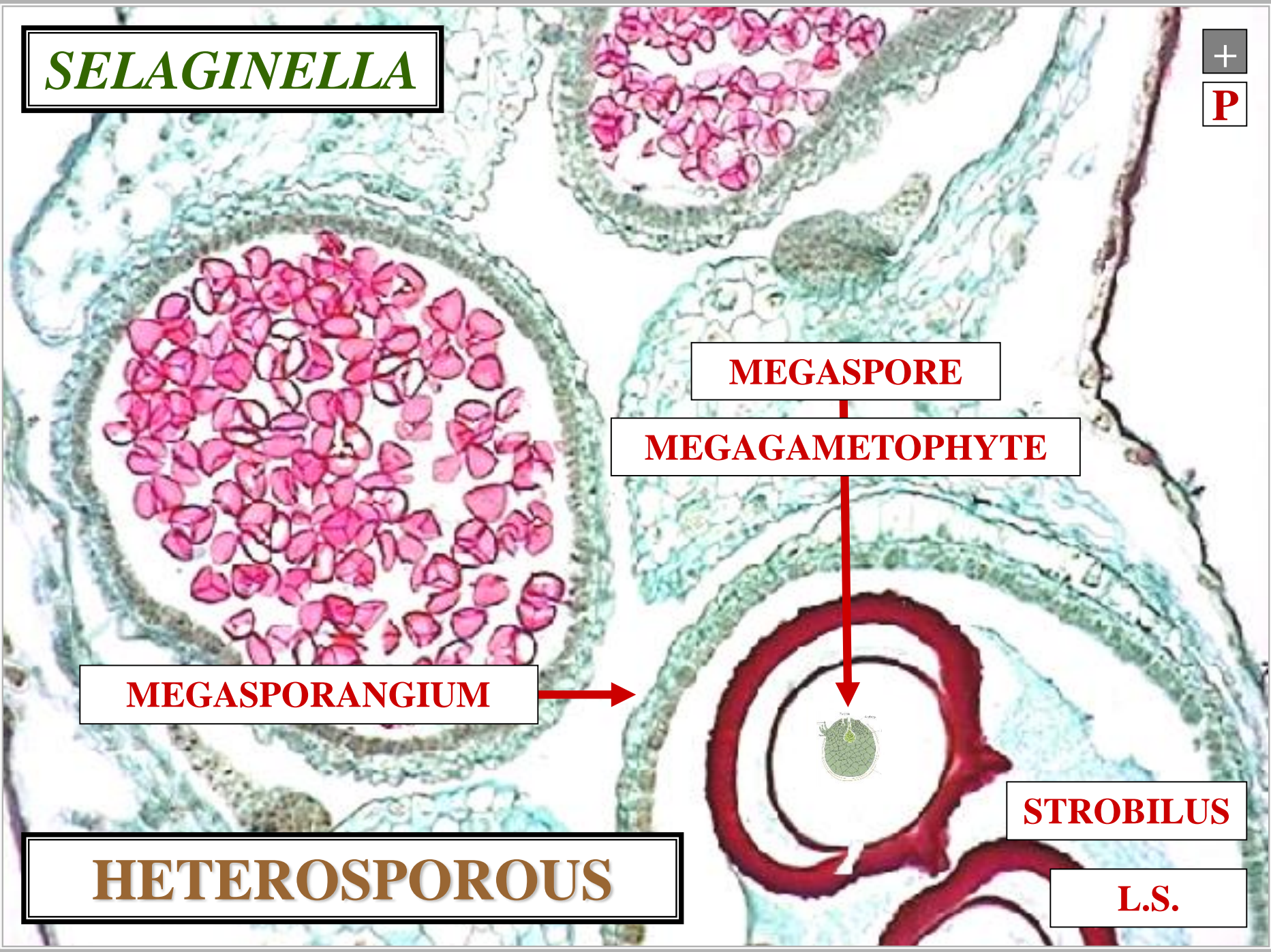
MEGAGAMETOPHYTE

MEGASPORANGIUM

STROBILUS

HETEROSPOROUS

L.S.



# *SELAGINELLA*



**MEGASPORE**

**MEGAGAMETOPHYTE**

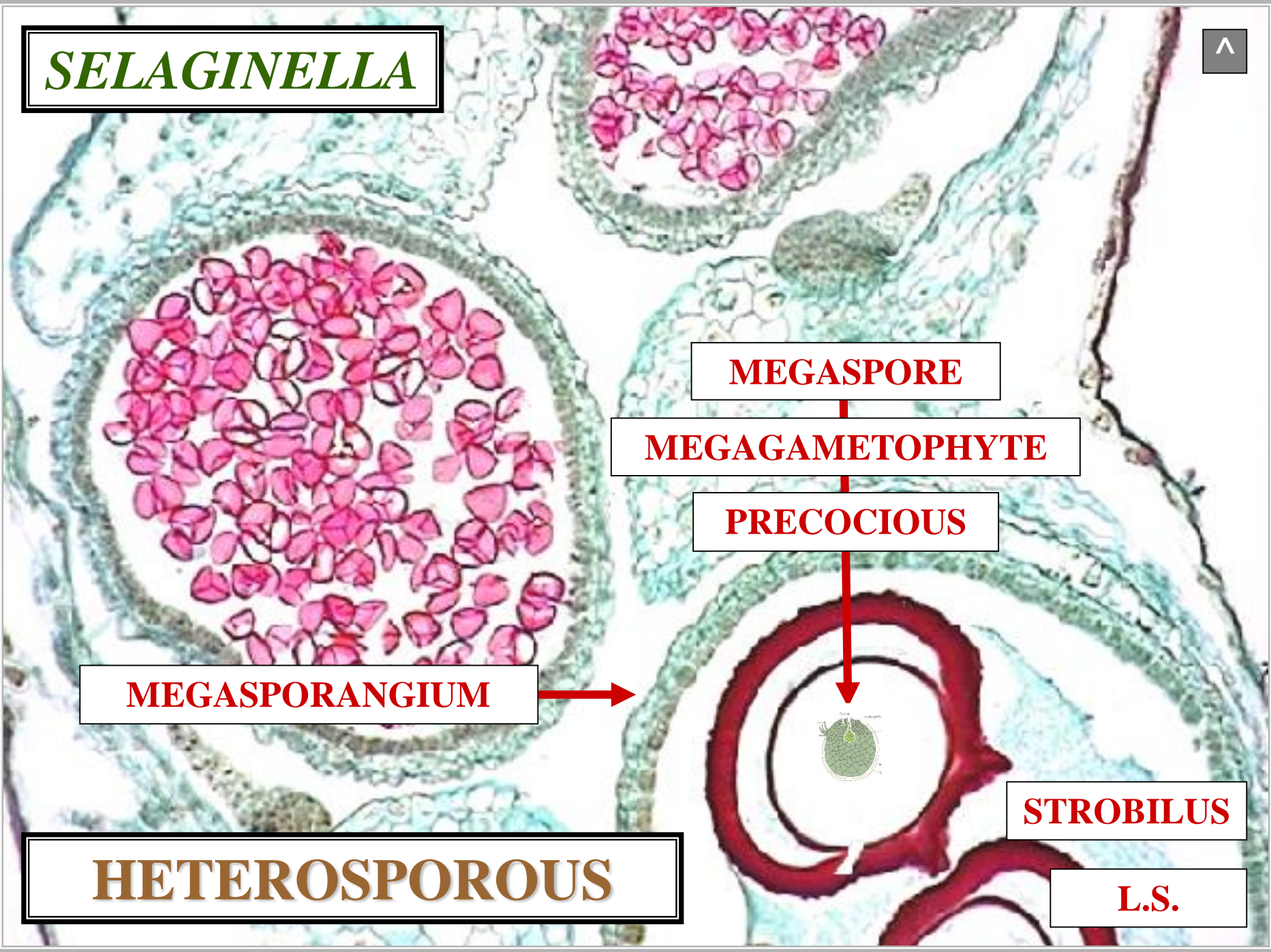
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**MEGASPORANGIUM**

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**HETEROSPOROUS**

**L.S.**





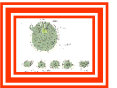


# SPERM

**FLAGELLUM**

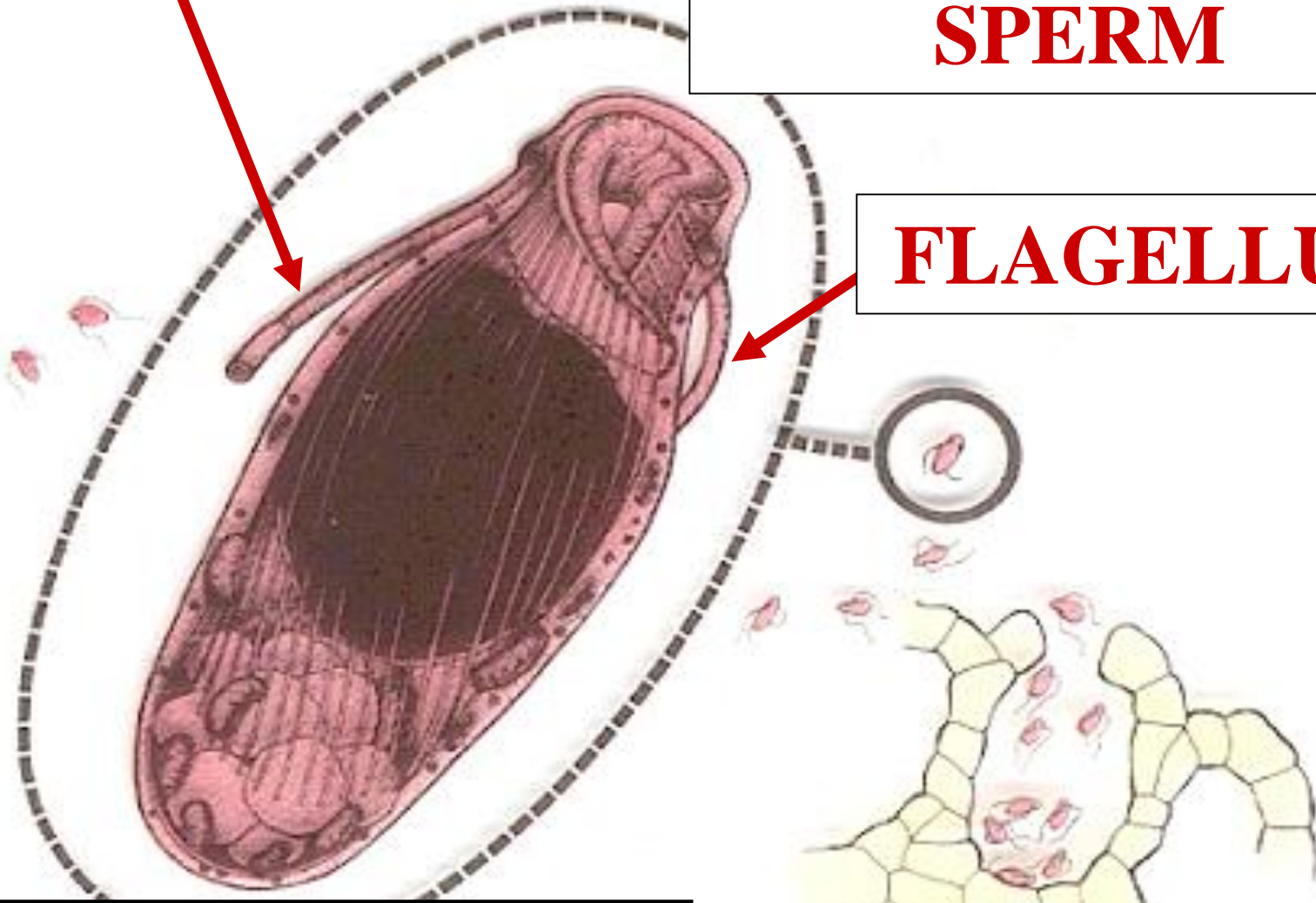
**BIFLAGELLATED  
SPERM**

**FLAGELLUM**



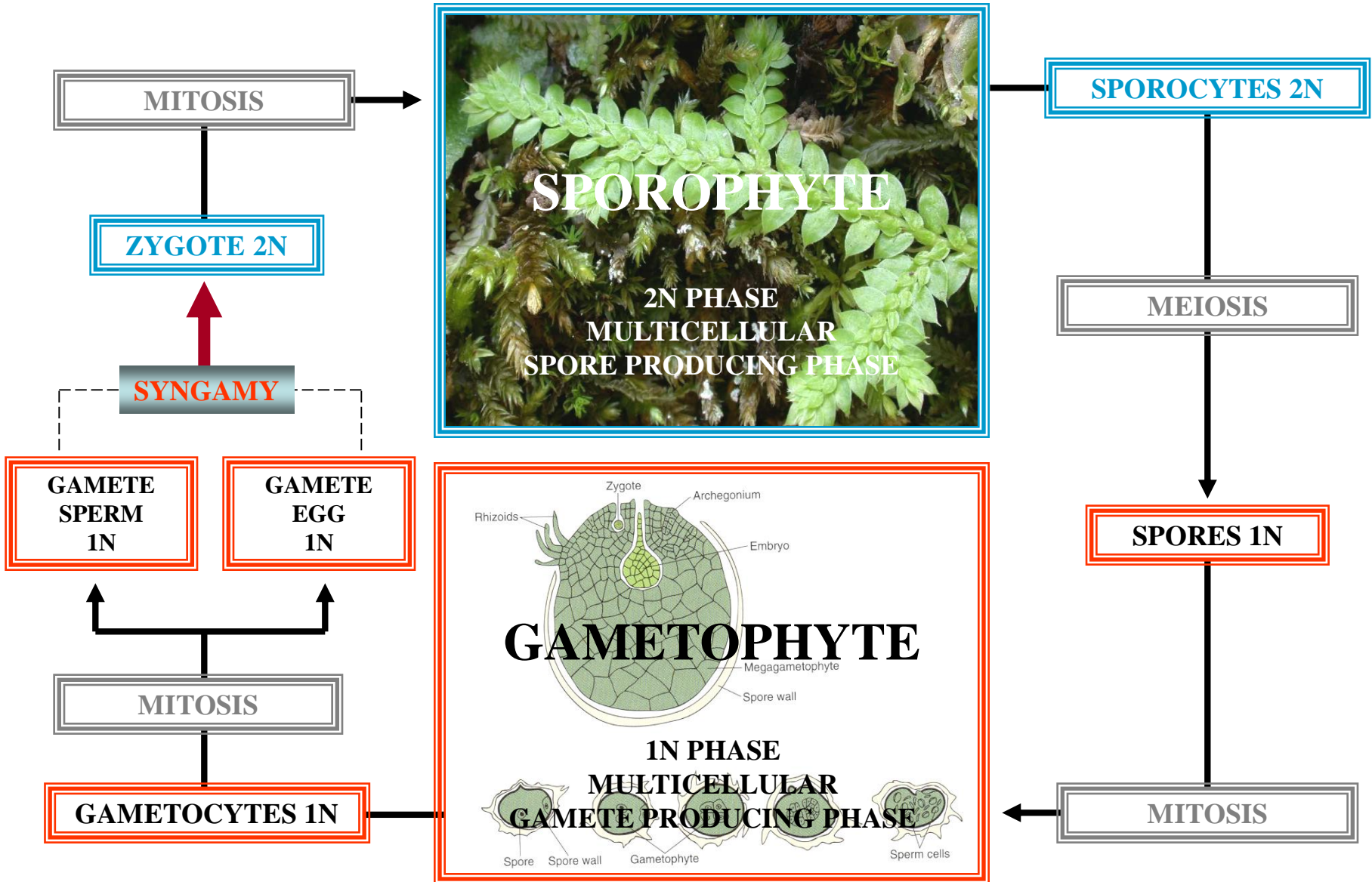
***SELAGINELLA***

**ANTHERIDIUM**



# SELAGINALLES

## LIFE CYCLE



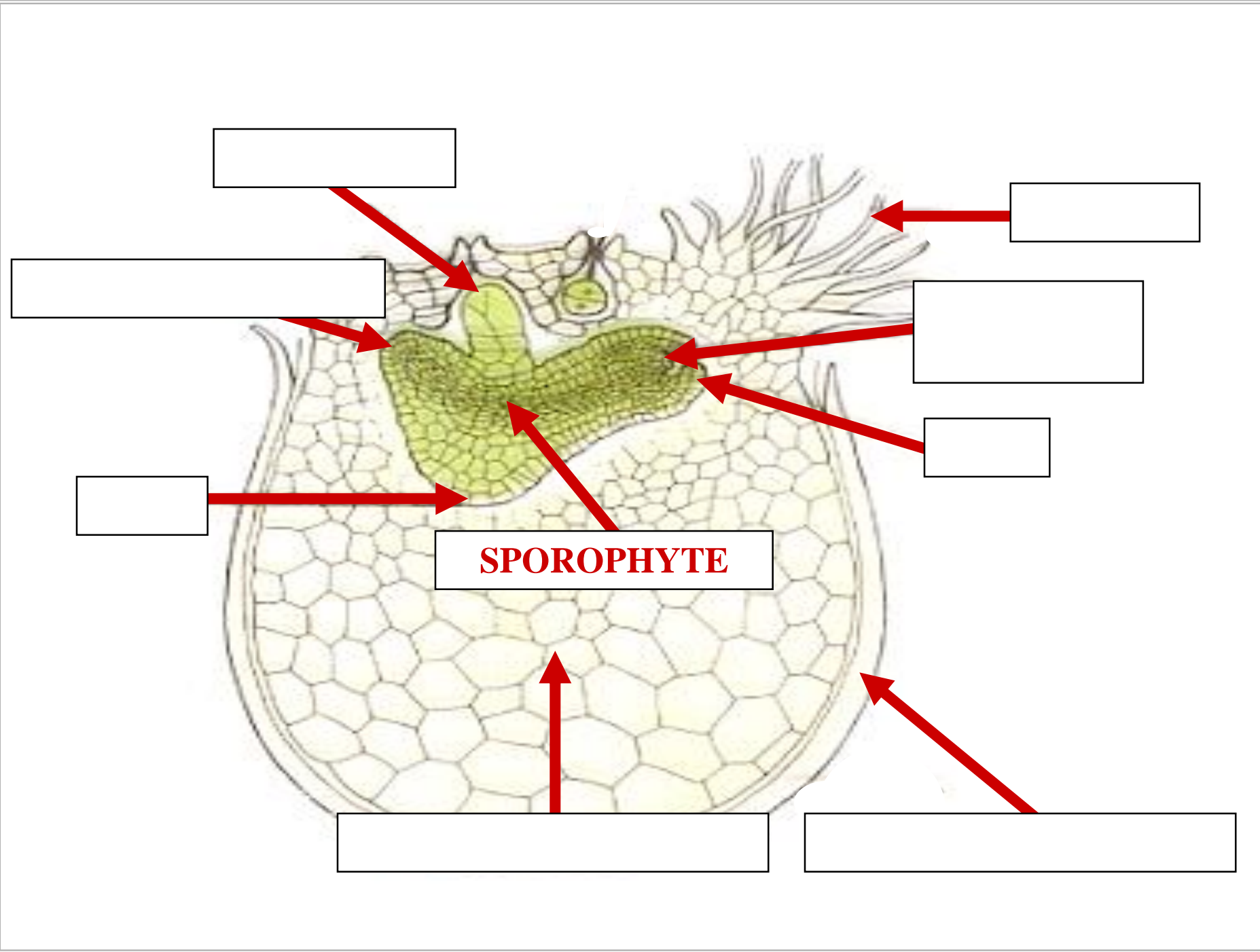


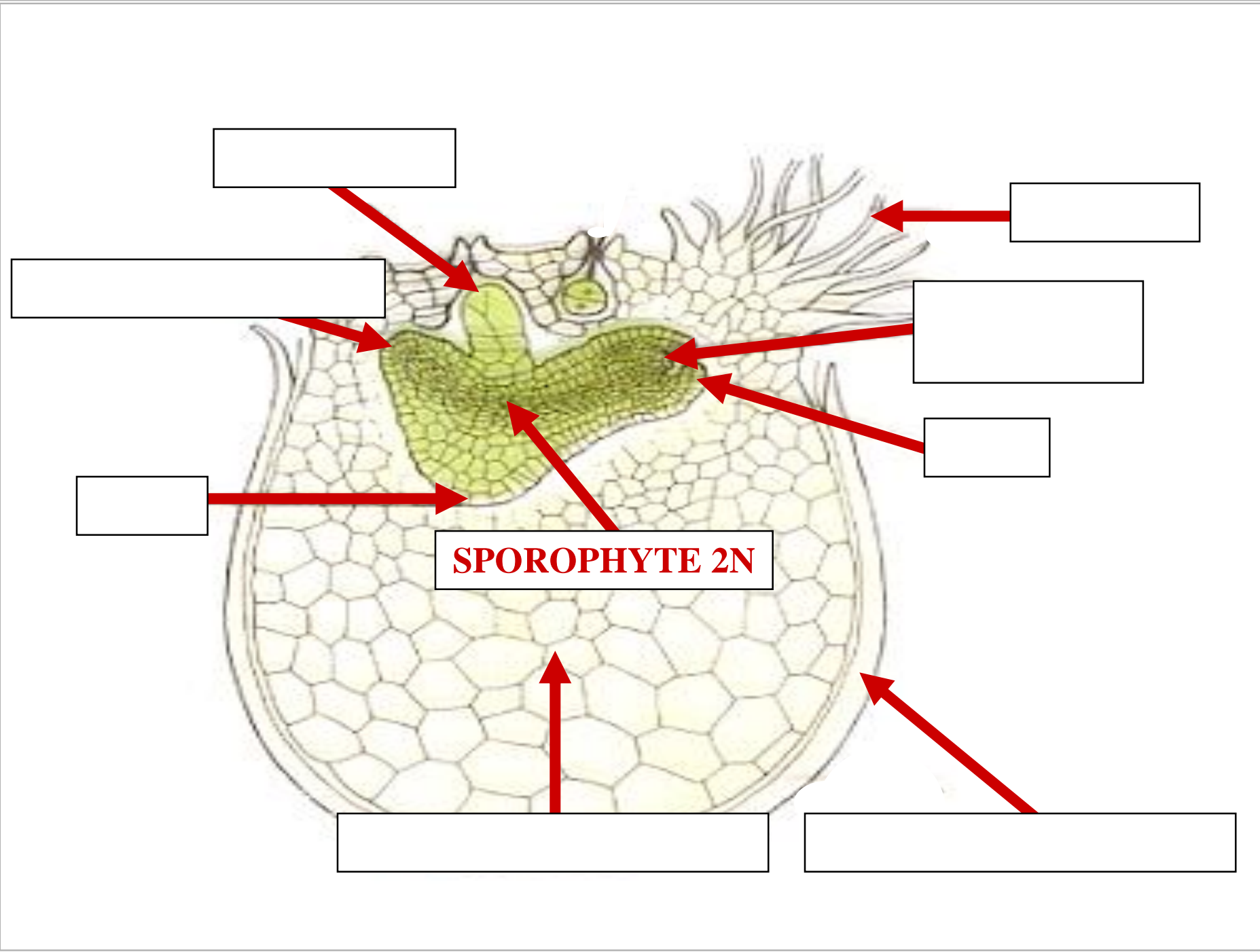
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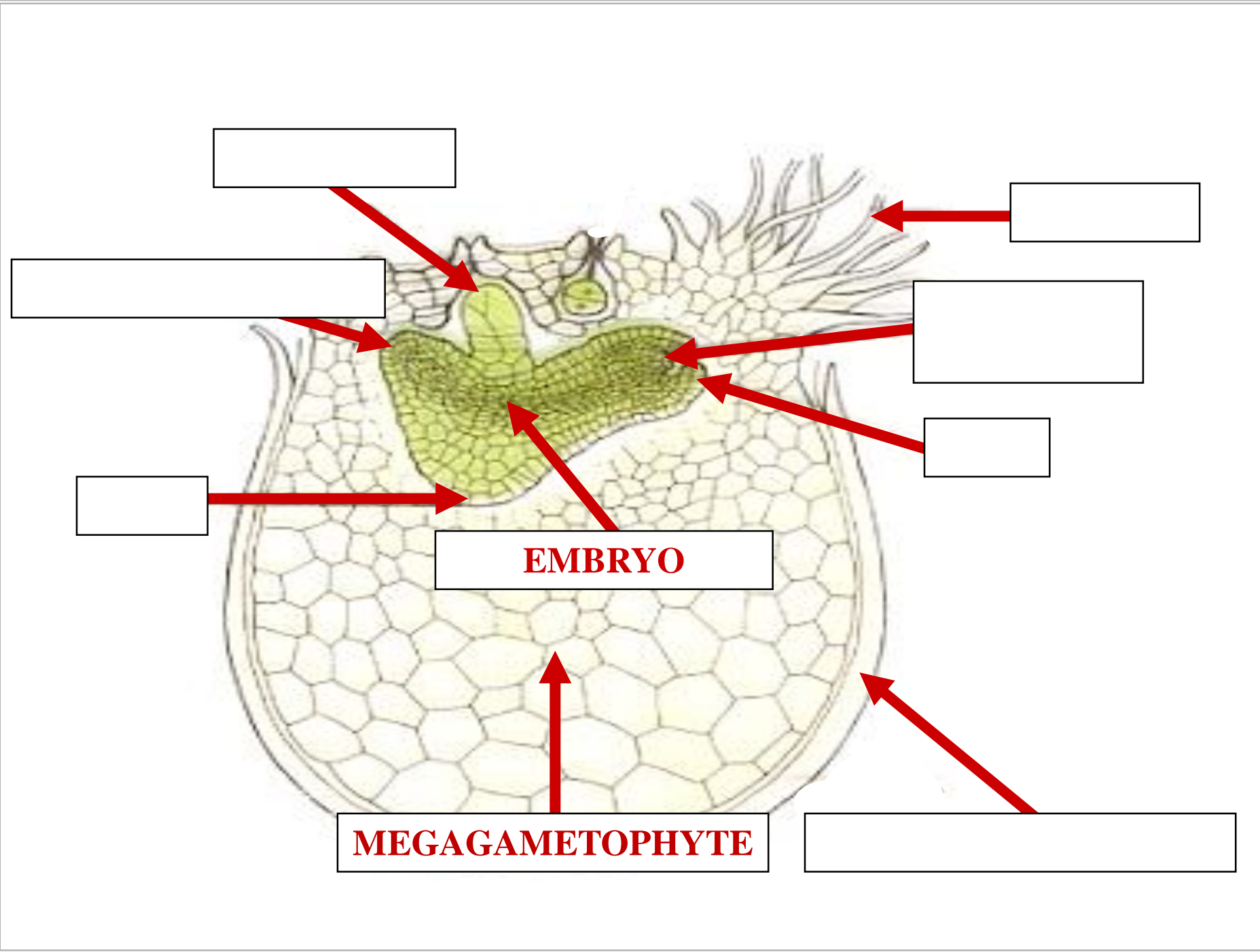
# *SELAGINELLA*

## LIFE CYCLE

PAGE 410









**F**

**A**

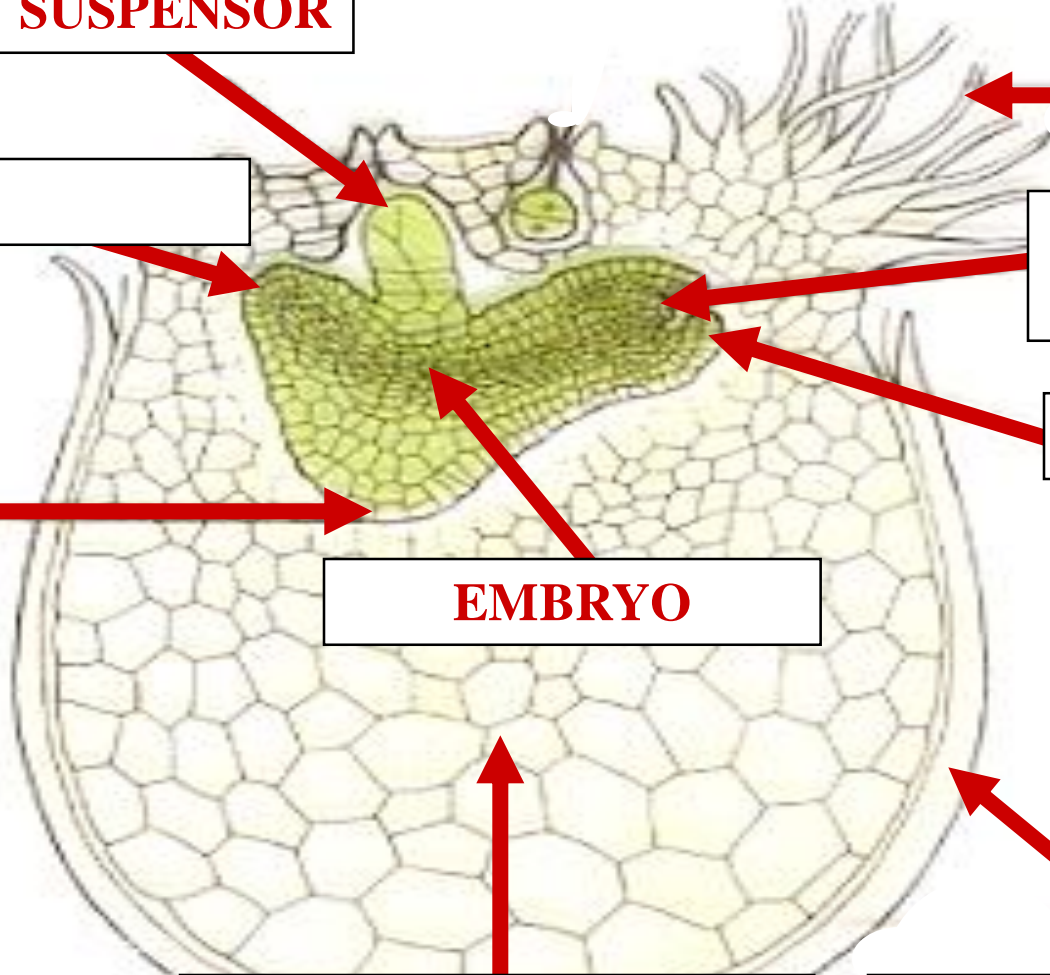
**SUSPENSOR**



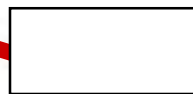
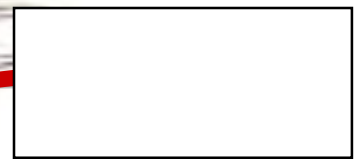
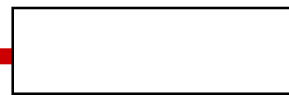
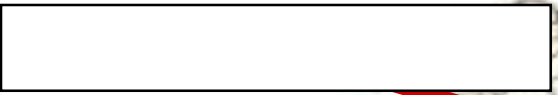
**EMBRYO**



**MEGAGAMETOPHYTE**



**SUSPENSOR**



**FOOT**

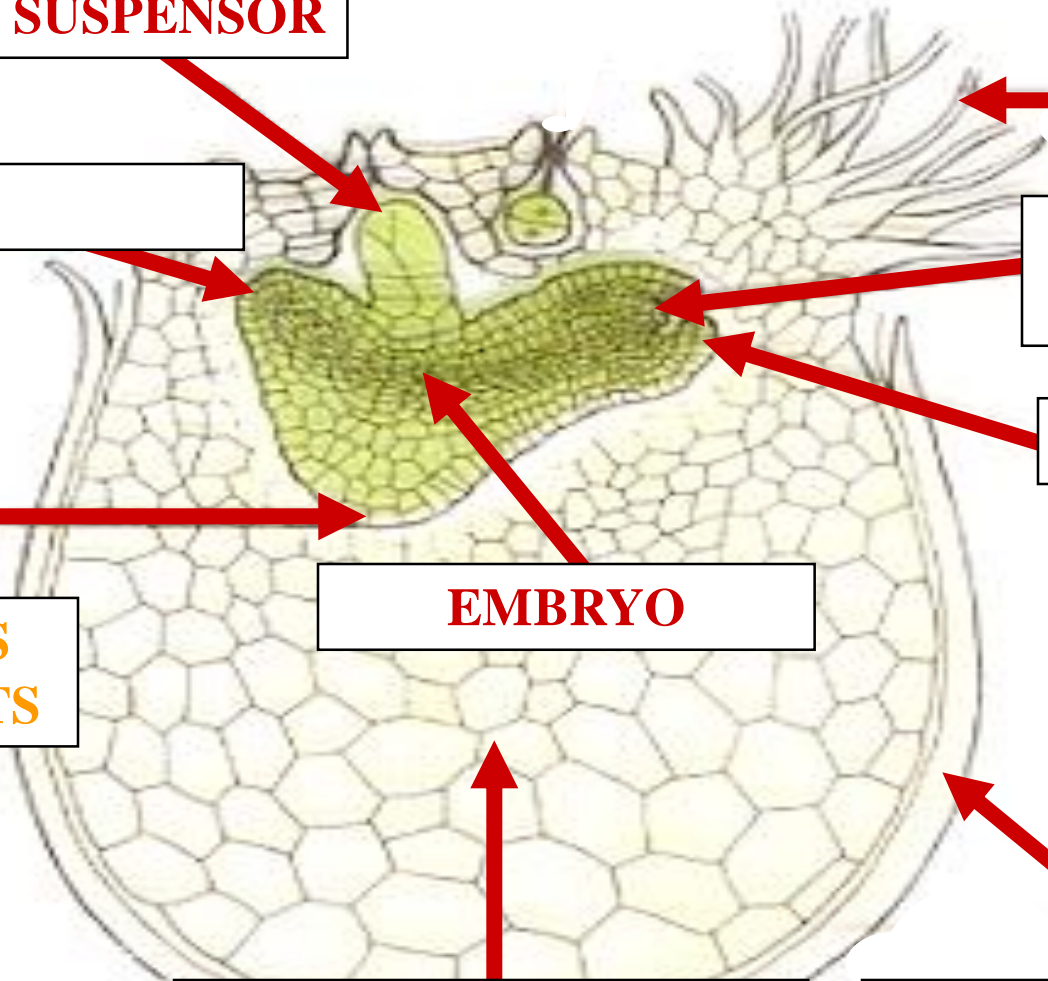


**EMBRYO**



**ABSORBS  
NUTRIENTS**

**MEGAGAMETOPHYTE**





**SUSPENSOR**

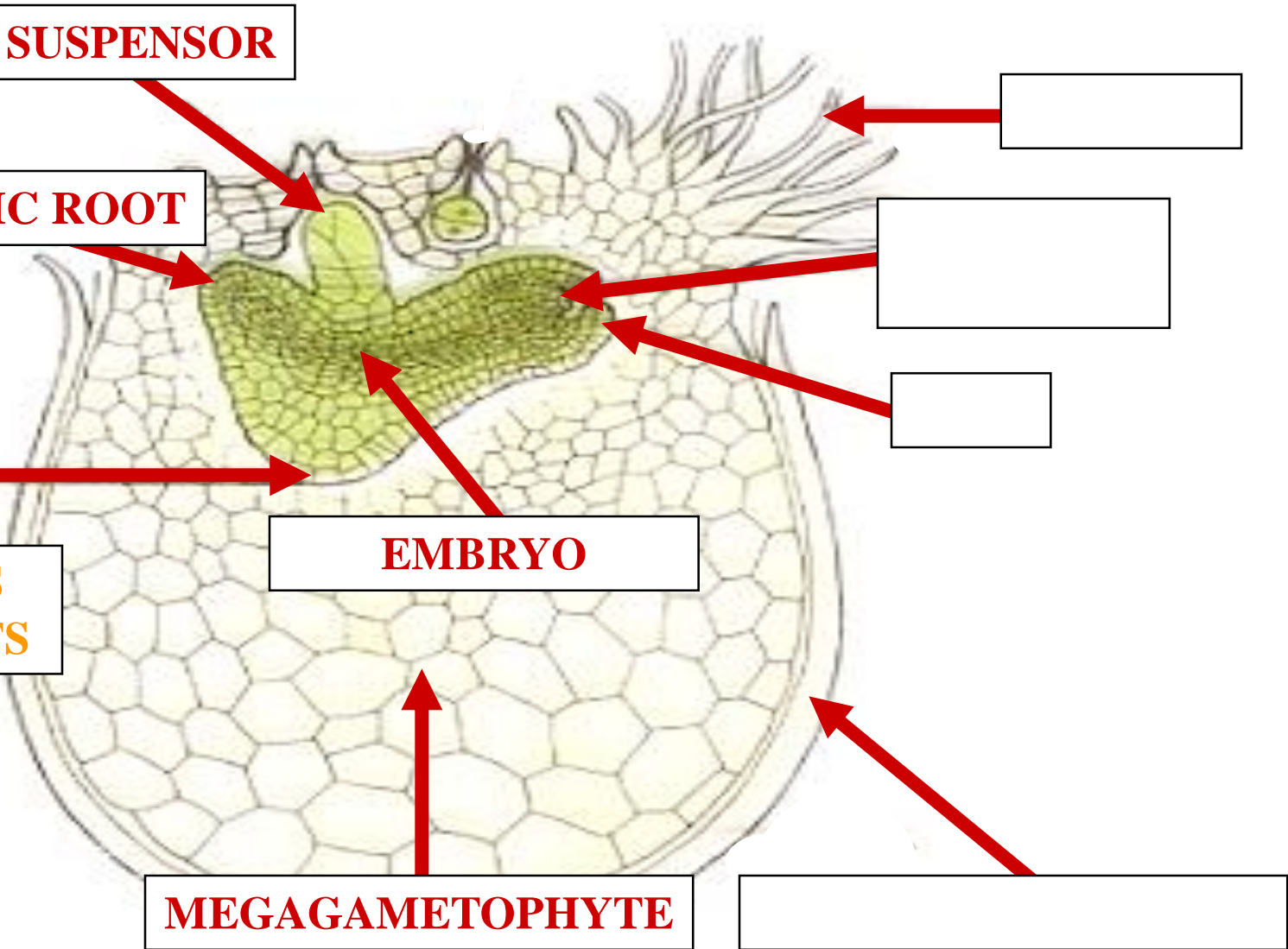
**EMBRYONIC ROOT**

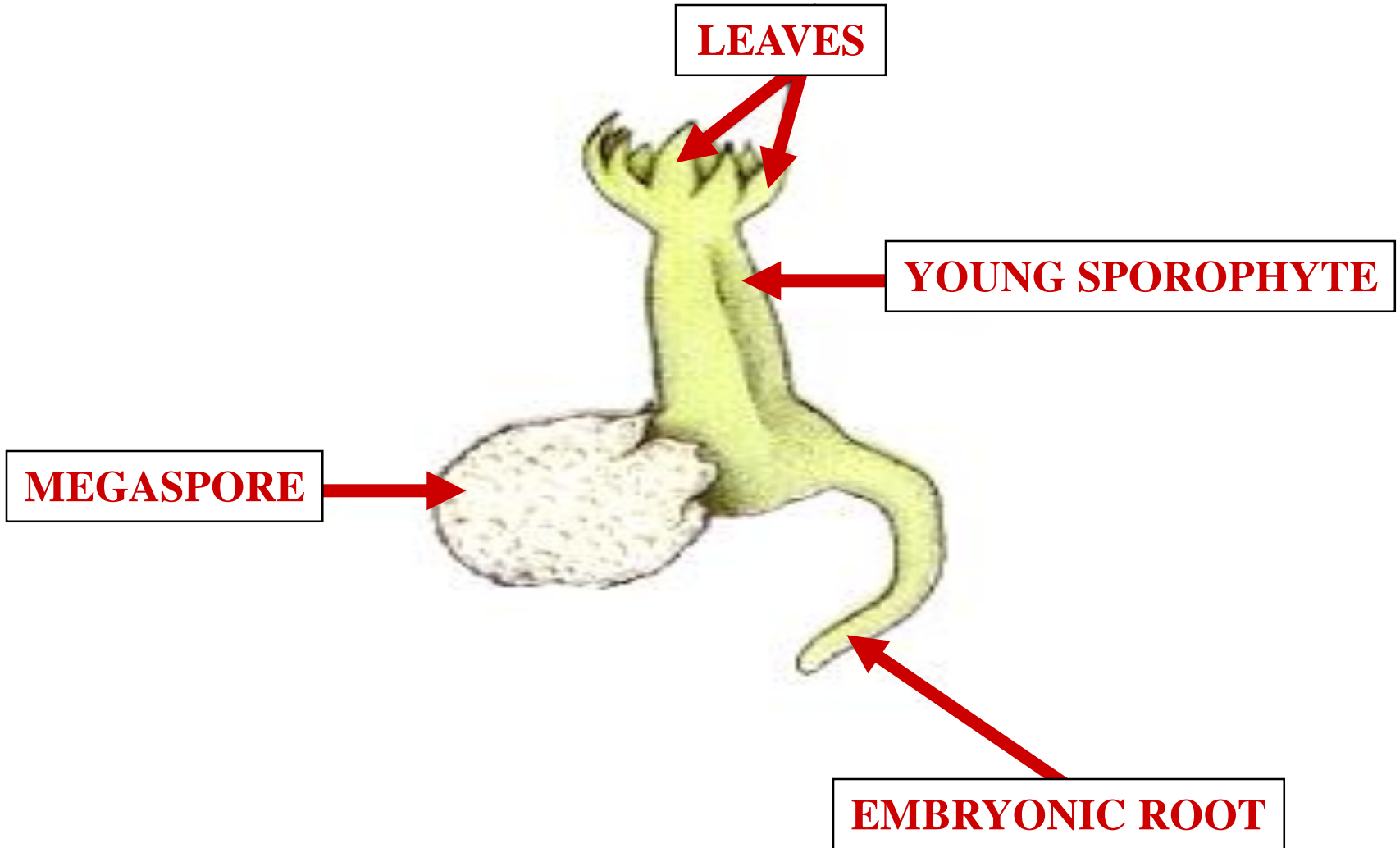
**FOOT**

**ABSORBS  
NUTRIENTS**

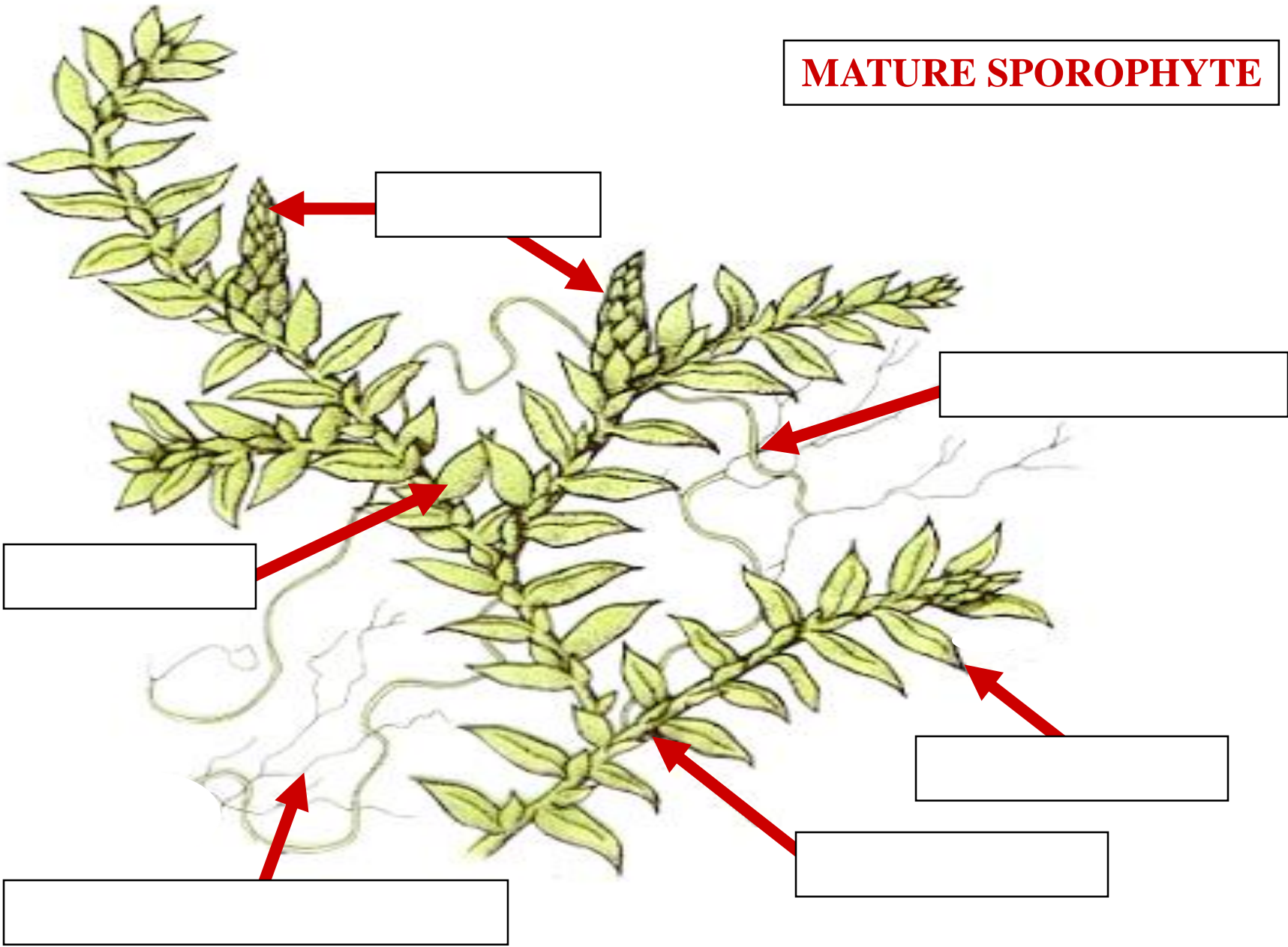
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**MEGAGAMETOPHYTE**

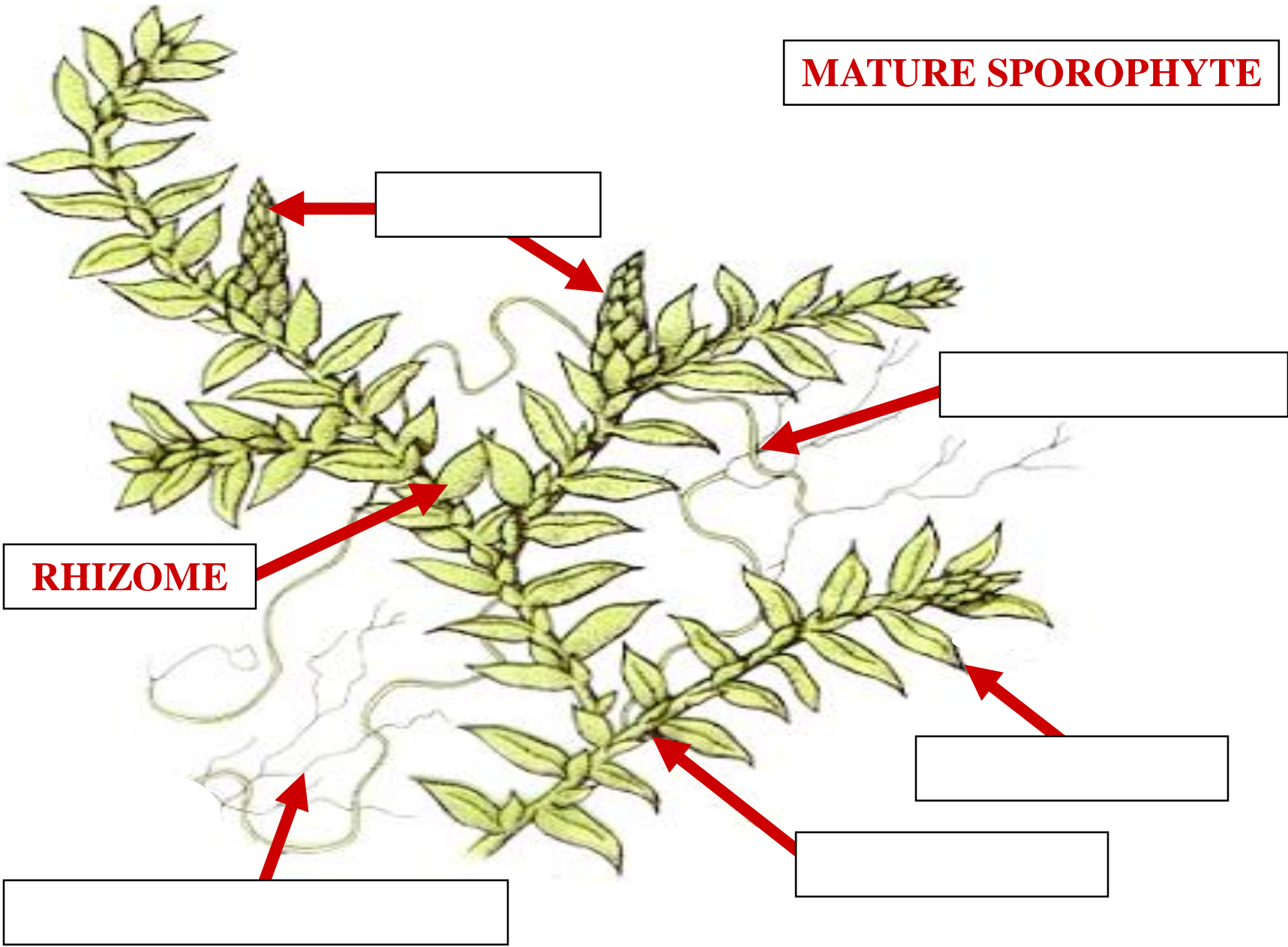




**MATURE SPOROPHYTE**



**MATURE SPOROPHYTE**



**RHIZOME**

**MATURE SPOROPHYTE**

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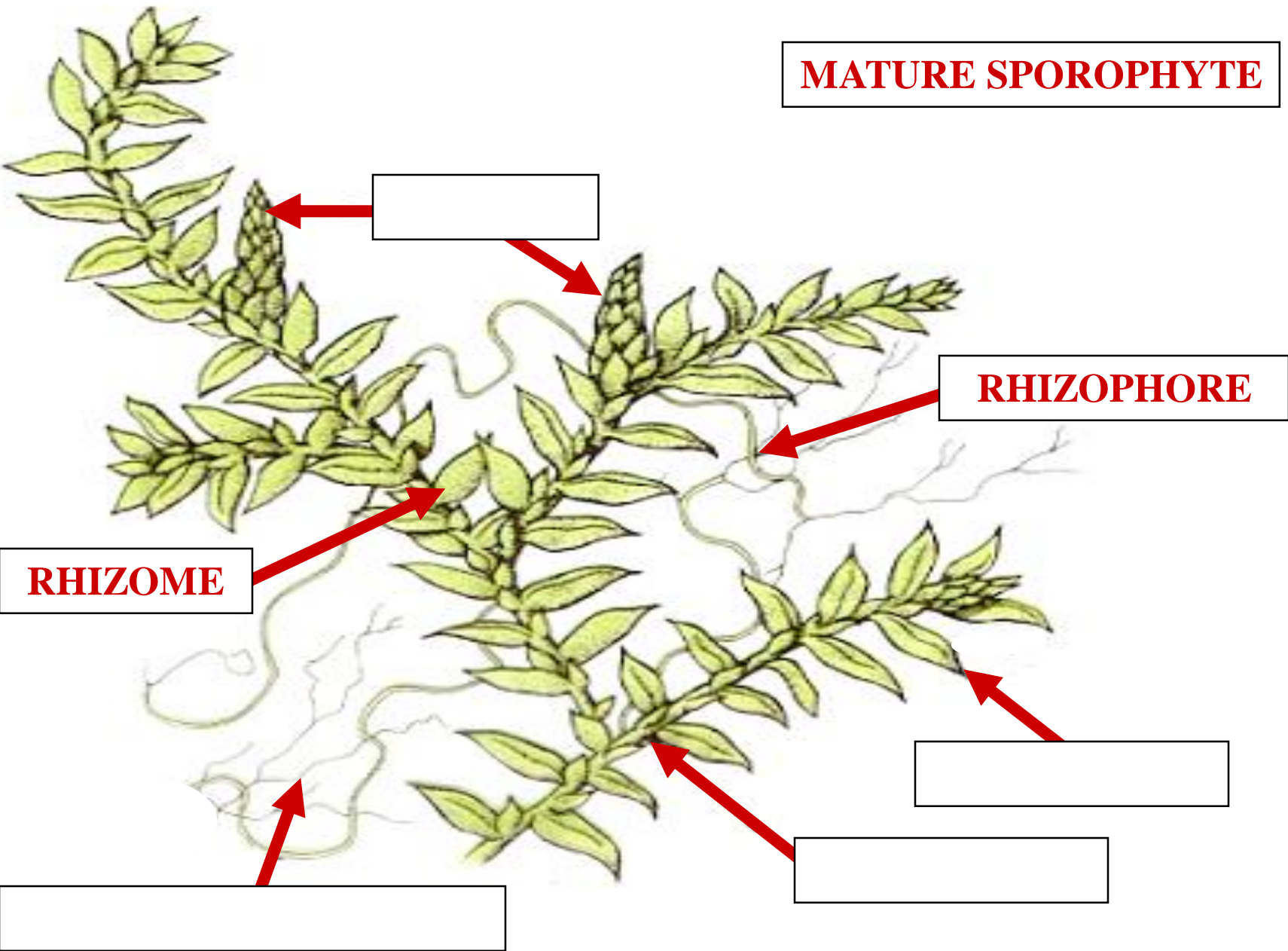
**RHIZOPHORE**

**RHIZOME**

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**MATURE SPOROPHYTE**

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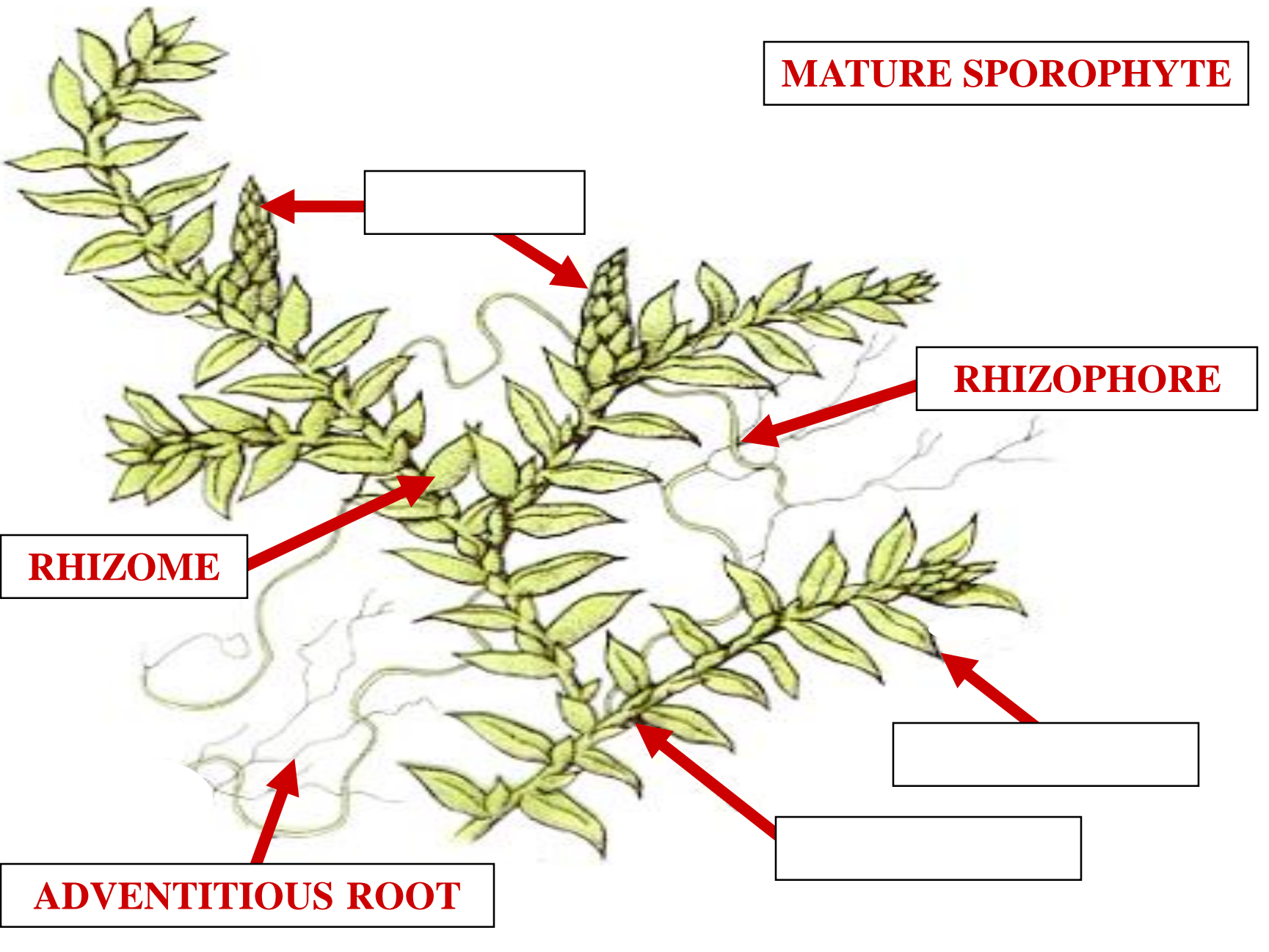
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**RHIZOME**

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**ADVENTITIOUS ROOT**

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**MATURE SPOROPHYTE**

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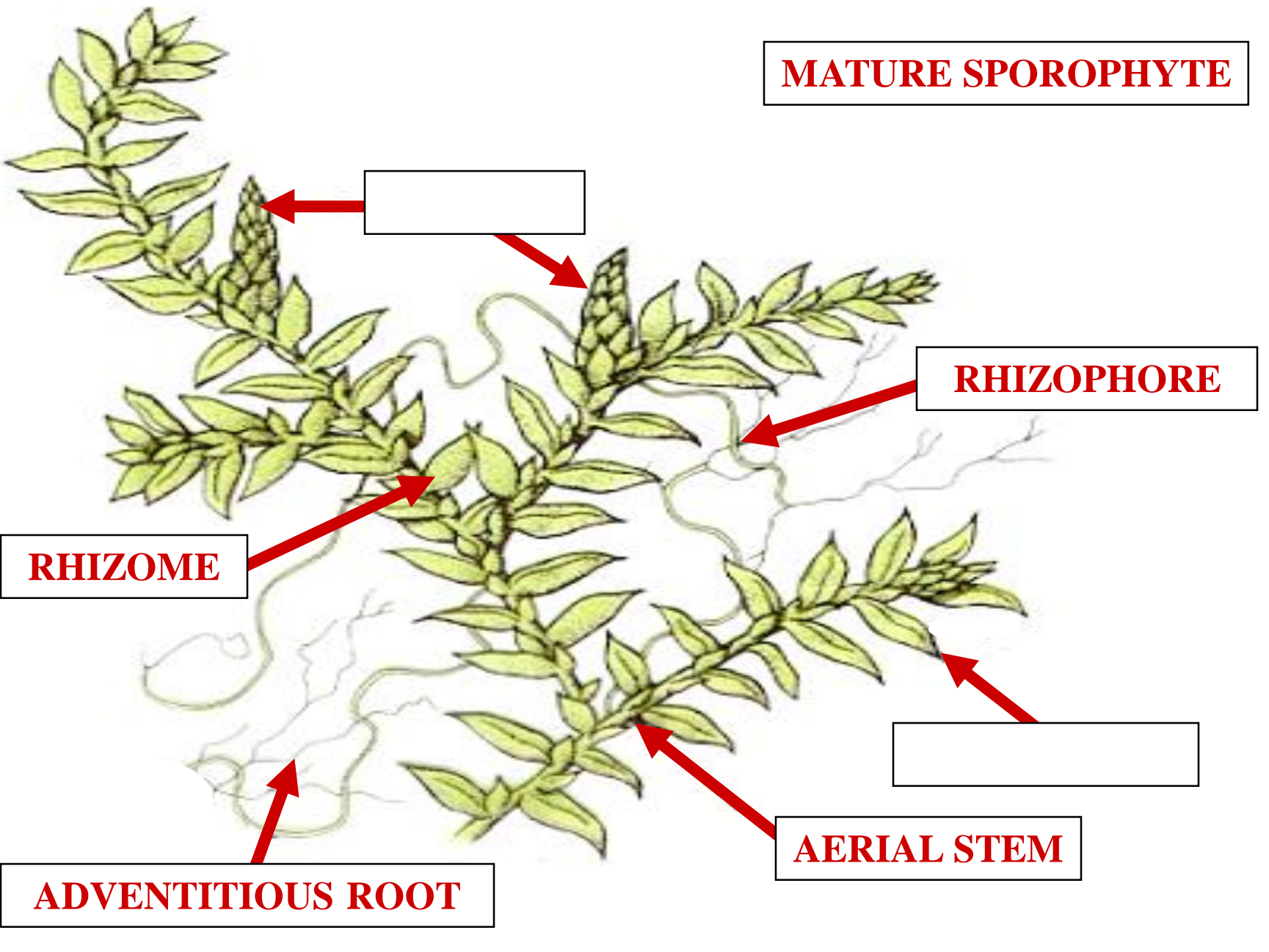
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**RHIZOME**

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**ADVENTITIOUS ROOT**

**AERIAL STEM**



**MATURE SPOROPHYTE**

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**RHIZOPHORE**

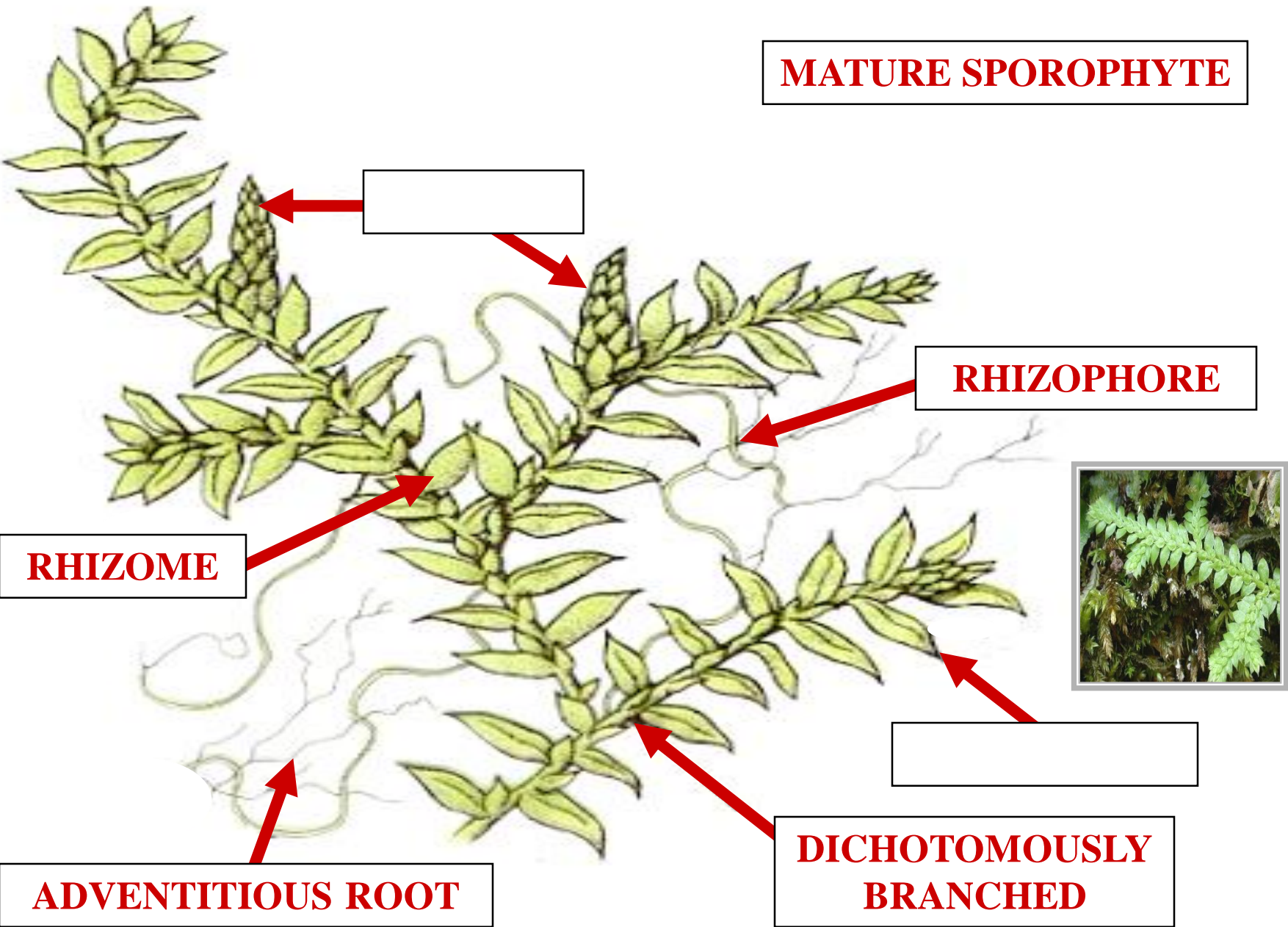
**RHIZOME**



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**ADVENTITIOUS ROOT**

**DICHOTOMOUSLY BRANCHED**



**MATURE SPOROPHYTE**

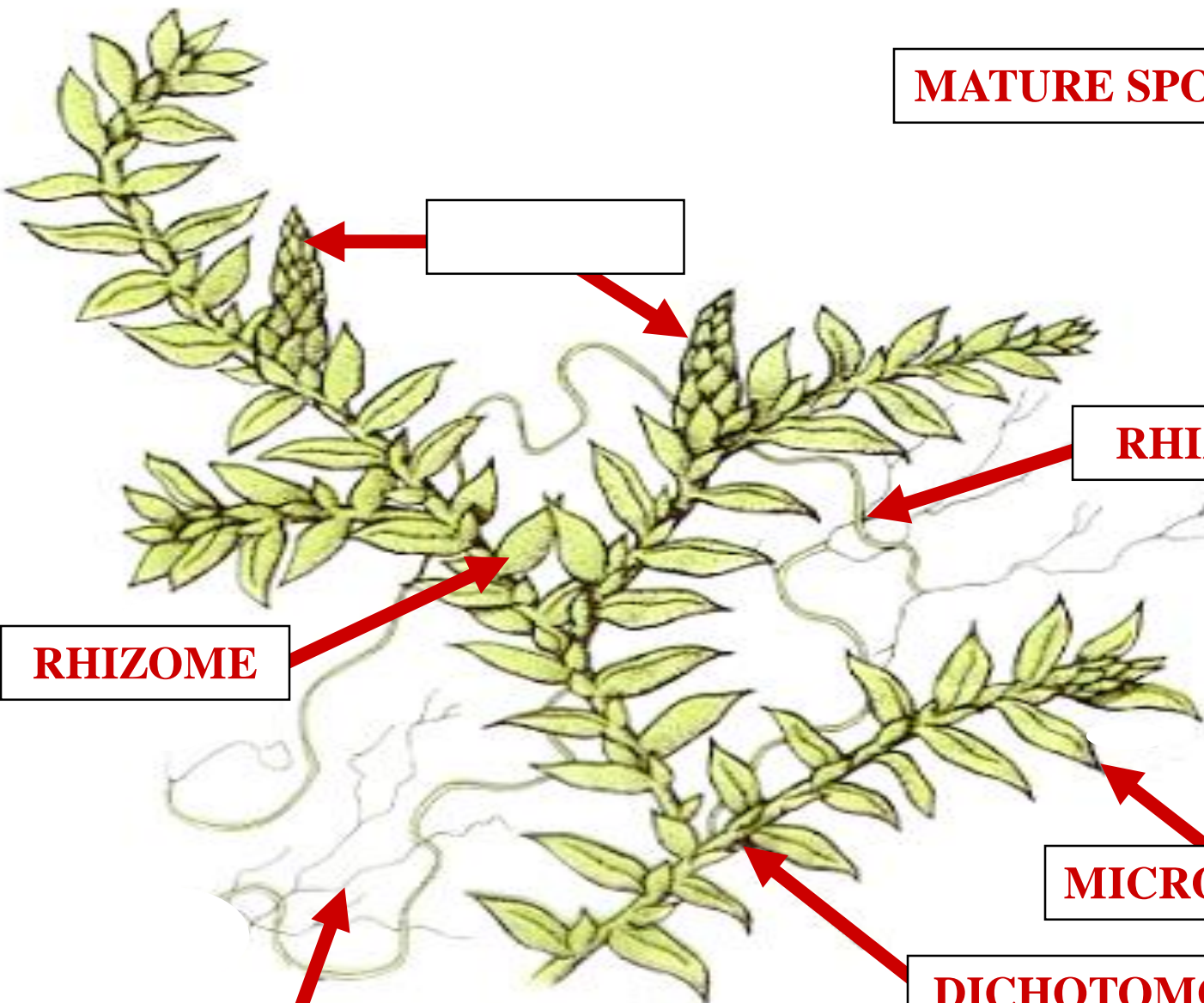
**RHIZOPHORE**

**RHIZOME**

**MICROPHYLL**

**ADVENTITIOUS ROOT**

**DICHOTOMOUSLY  
BRANCHED**





**MATURE SPOROPHYTE**



**RHIZOPHORE**

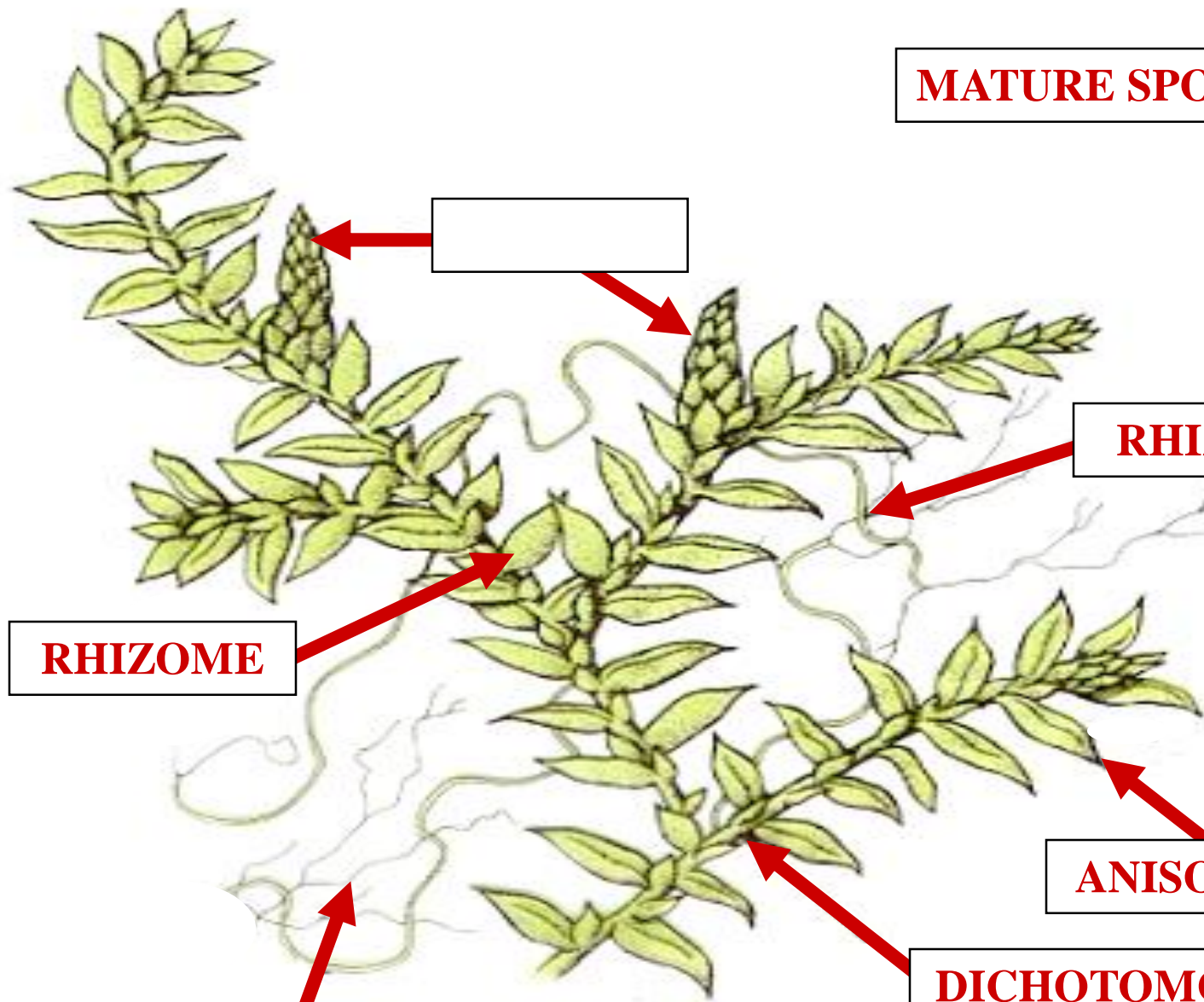
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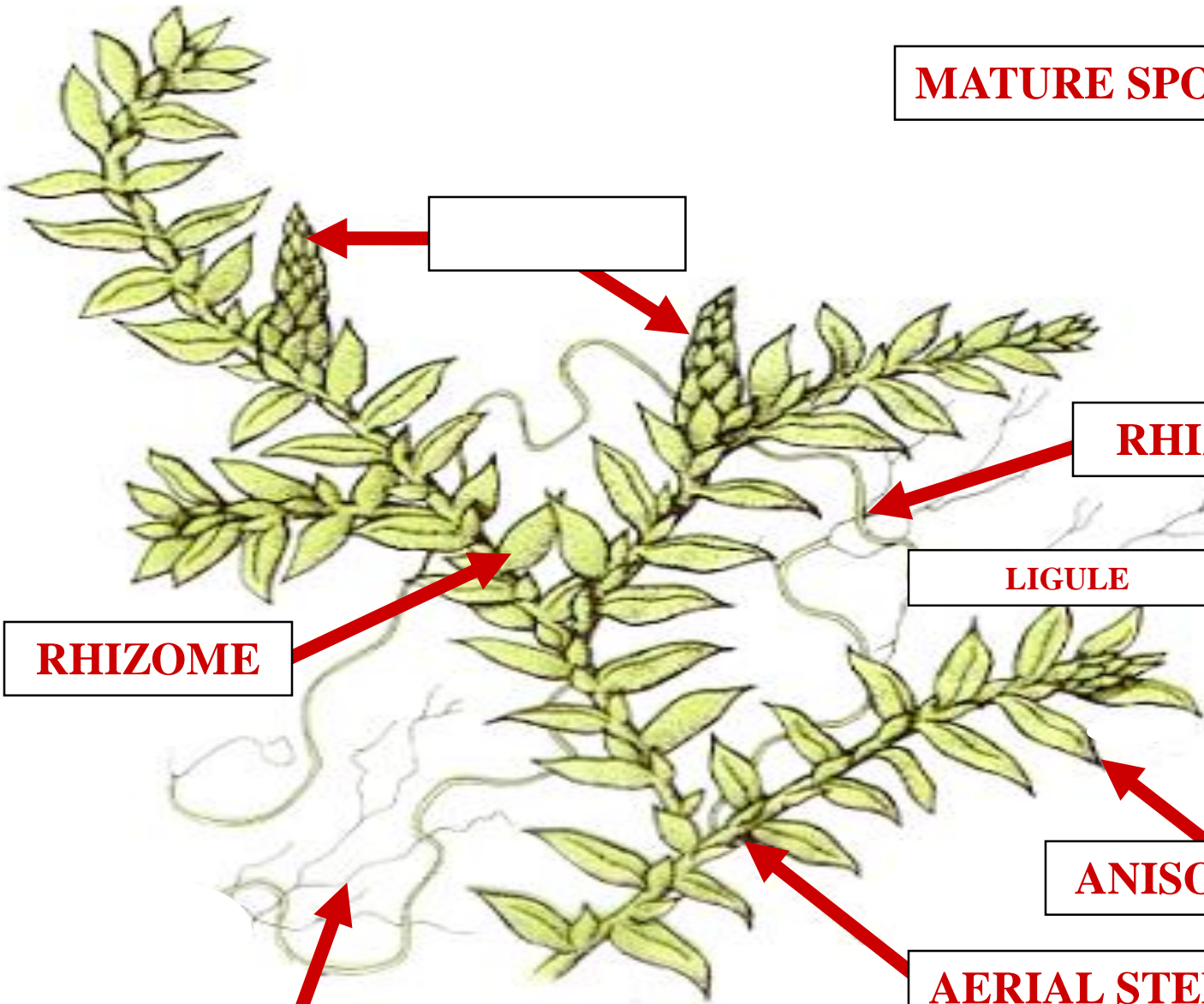
**ANISOPHYLLOUS**

**ADVENTITIOUS ROOT**

**DICHOTOMOUSLY  
BRANCHED**



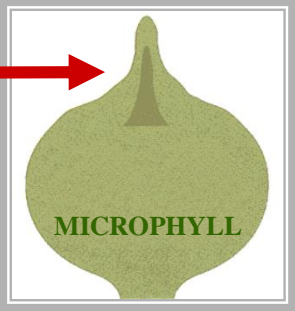
**MATURE SPOROPHYTE**



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**RHIZOPHORE**

**LIGULE**



**MICROPHYLL**

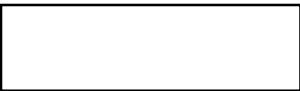
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**ANISOPHYLLOUS**

**AERIAL STEM**

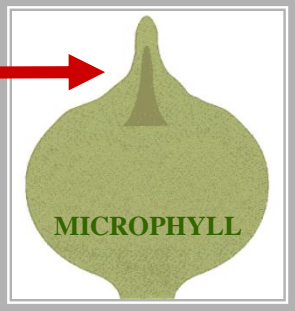
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**MATURE SPOROPHYTE**



**RHIZOPHORE**

**LIGULE PRESENT**

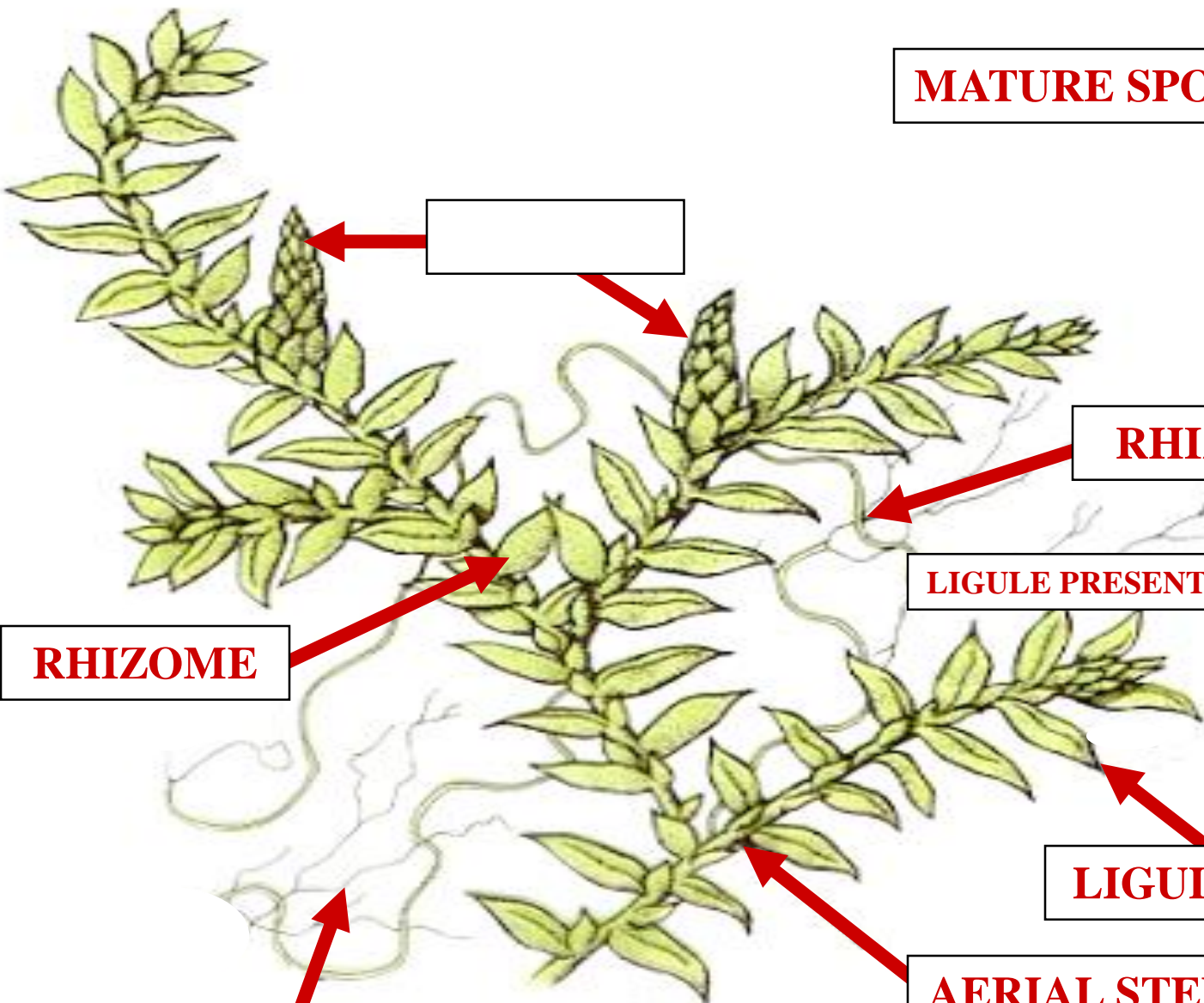


**RHIZOME**

**LIGULE PRESENT**

**AERIAL STEM**

**ADVENTITIOUS ROOT**





**MATURE SPOROPHYTE**

**STROBILI**

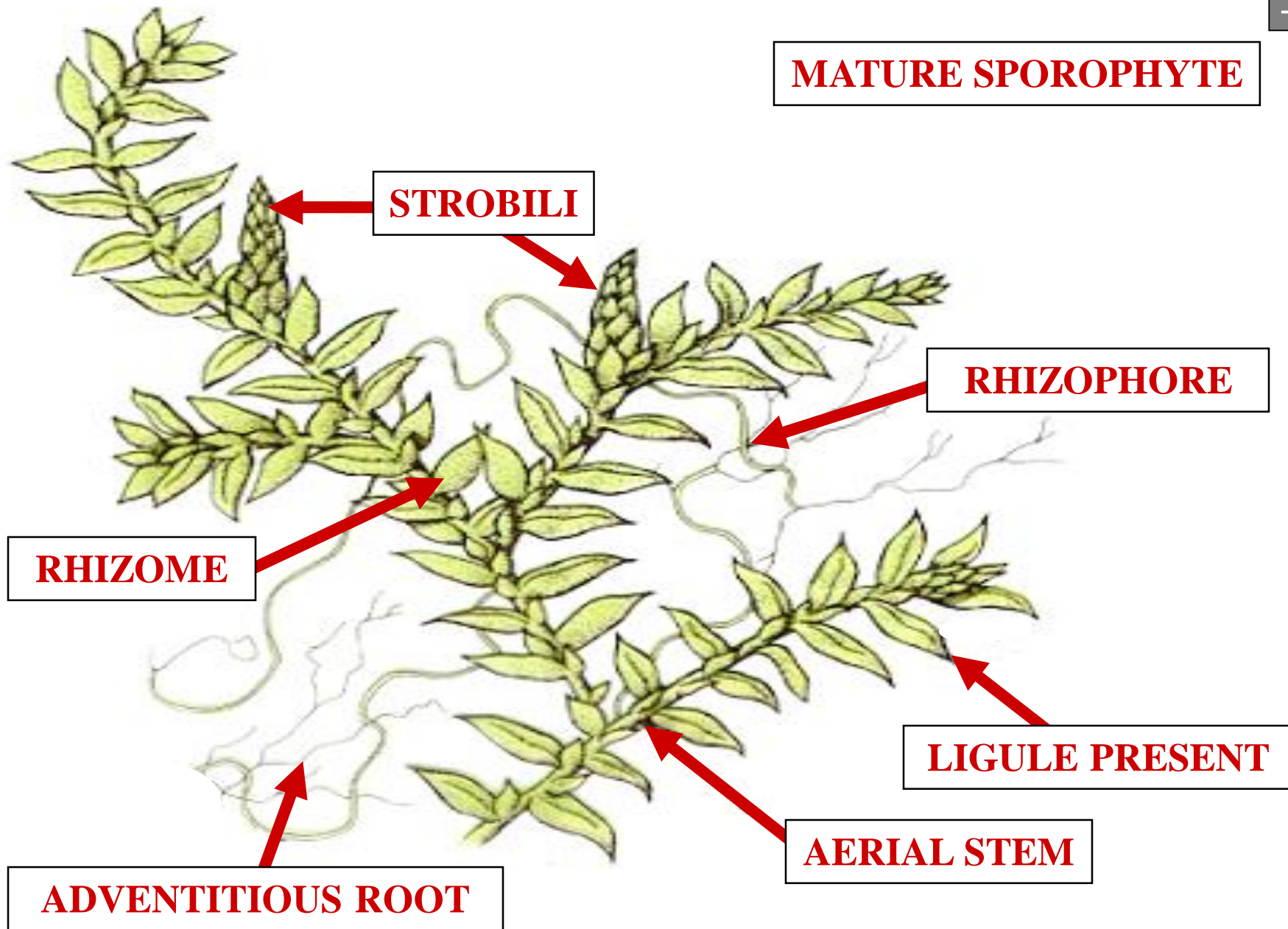
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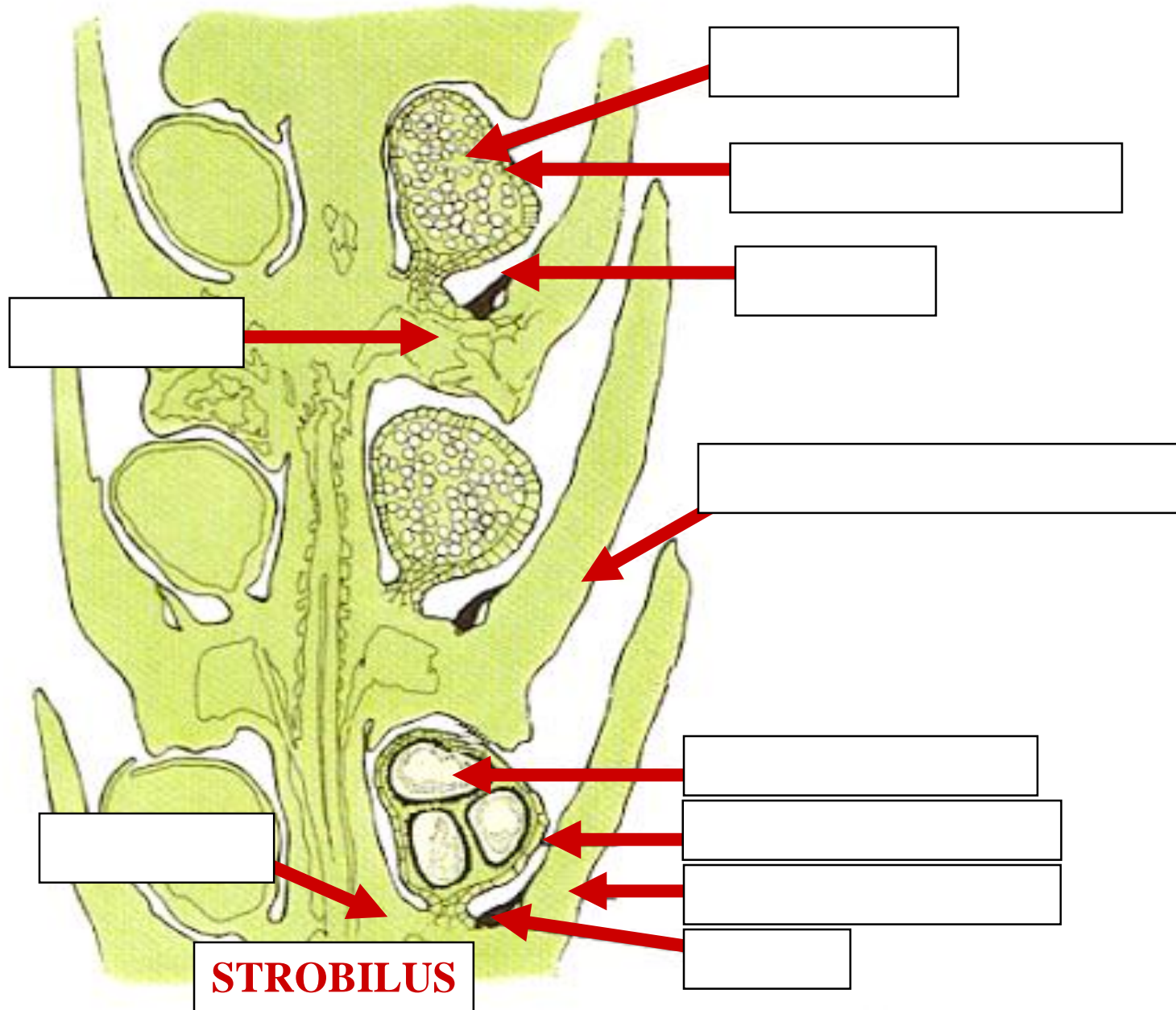
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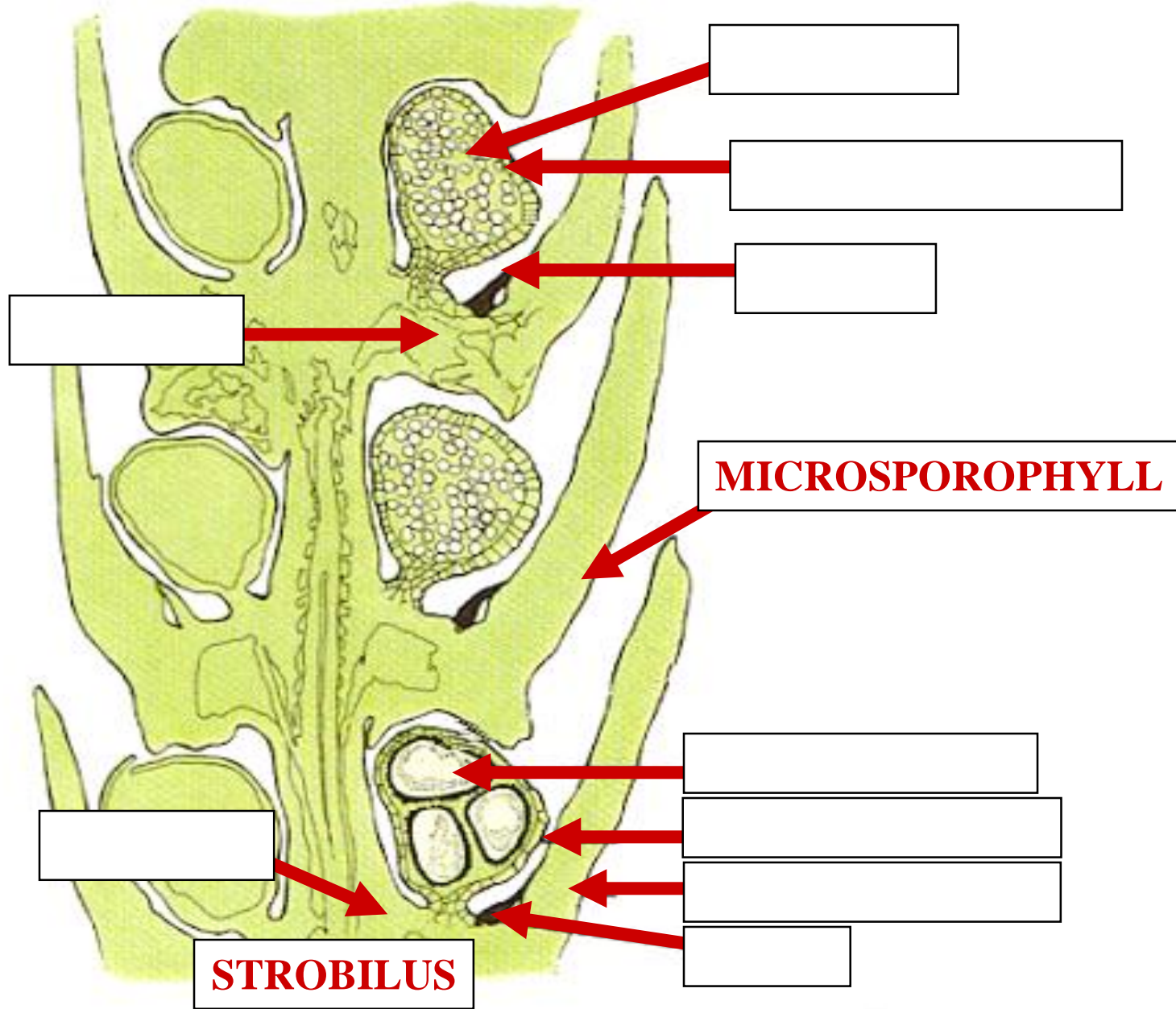
**ADVENTITIOUS ROOT**

**AERIAL STEM**









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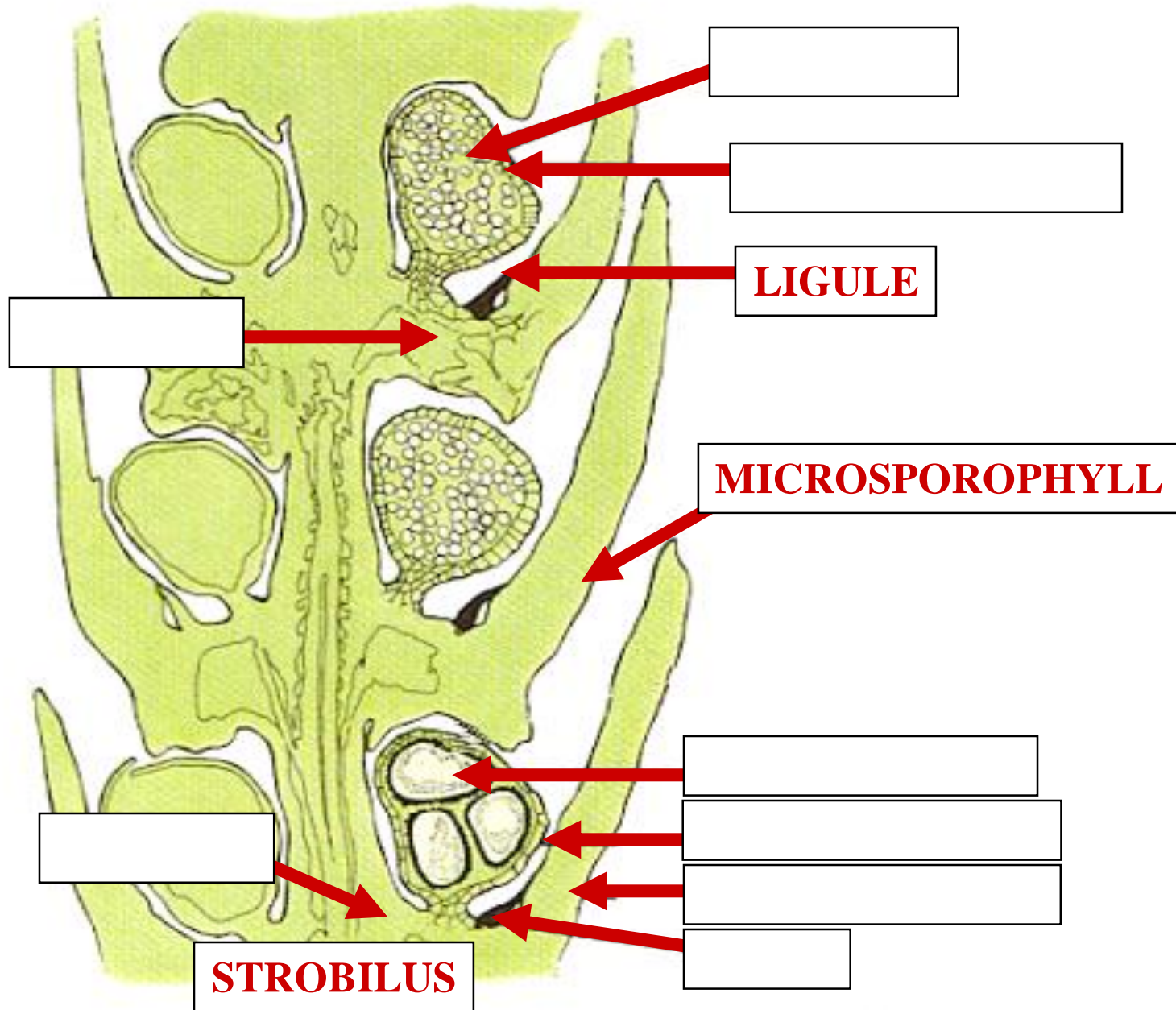
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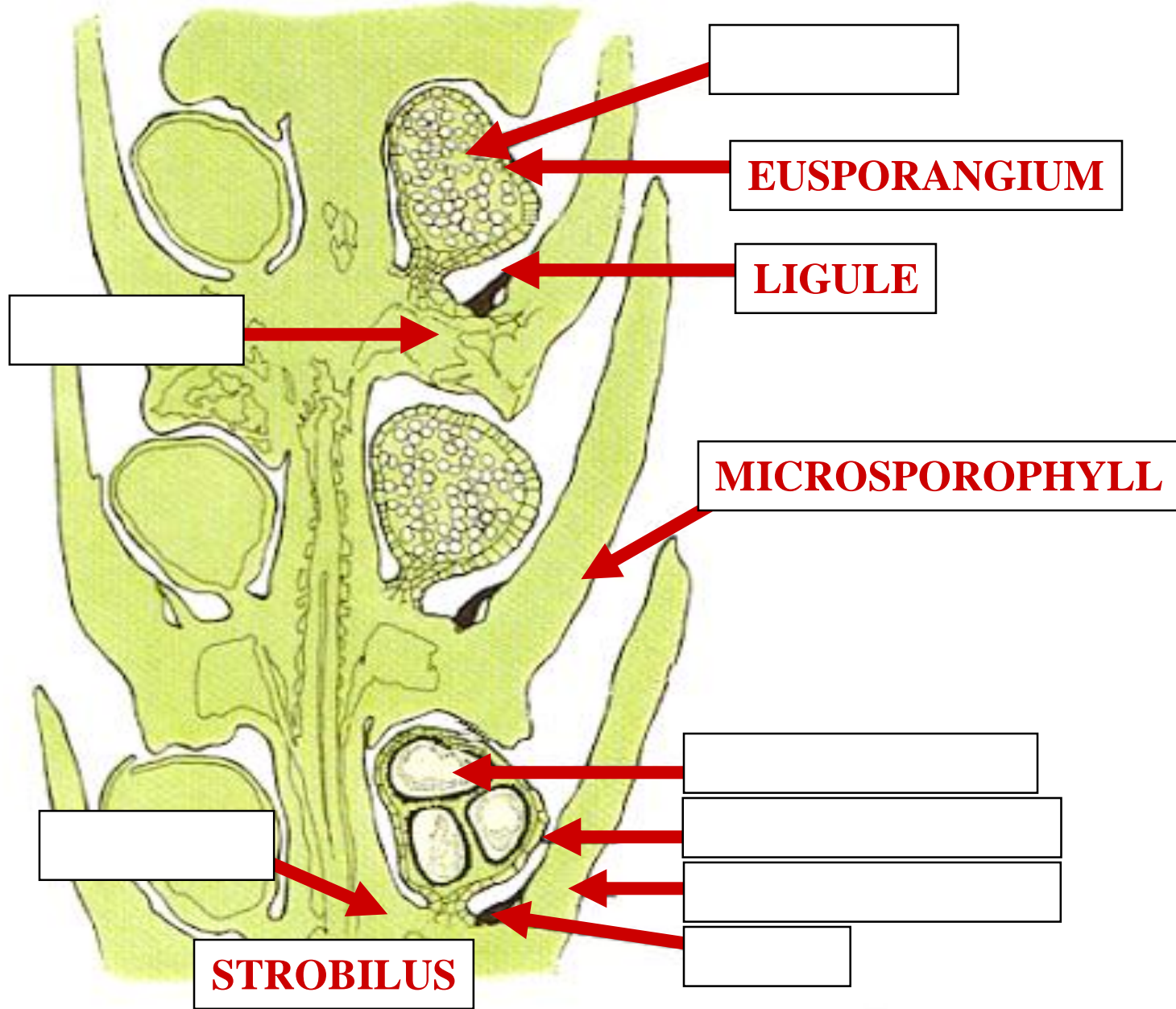
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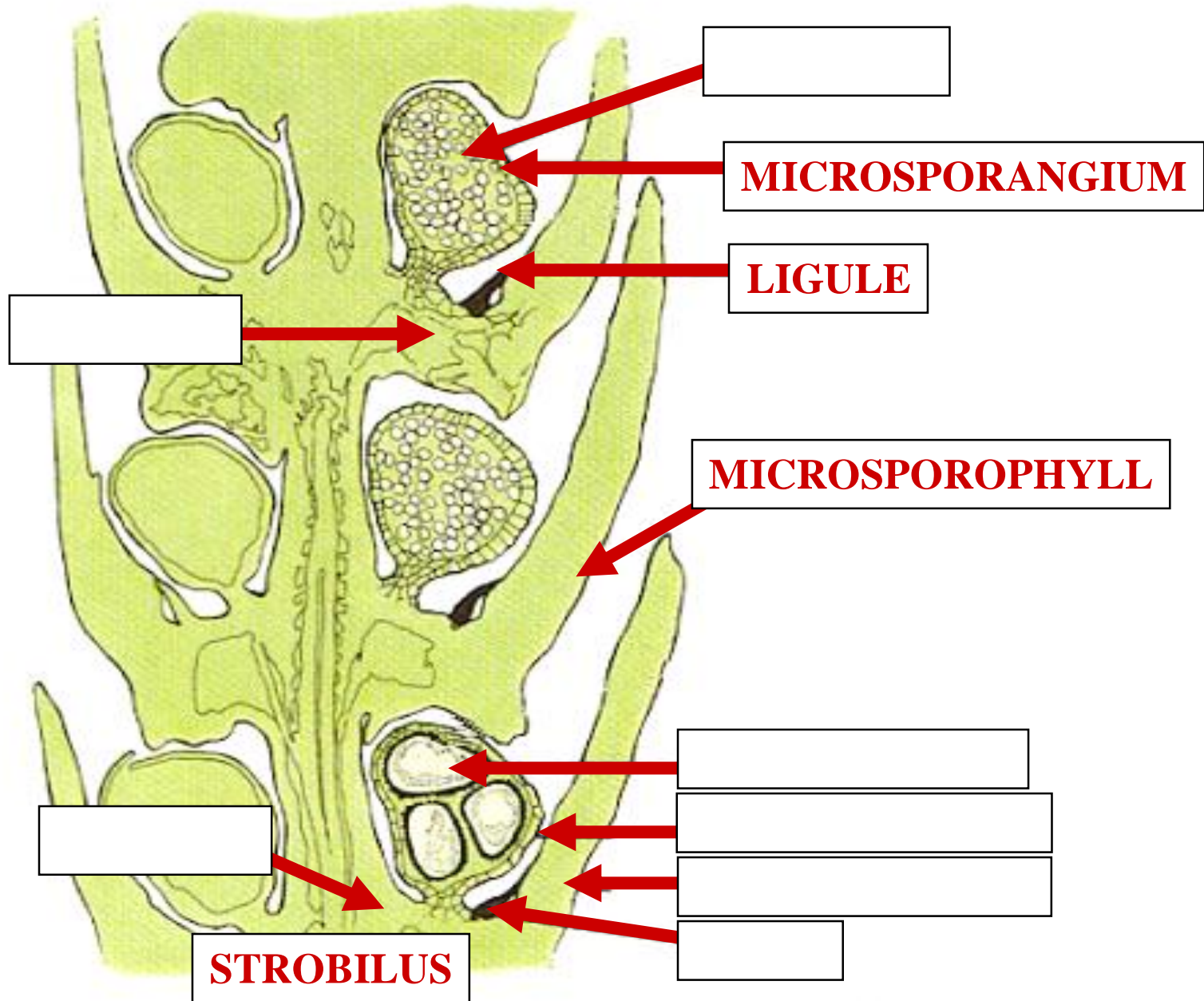
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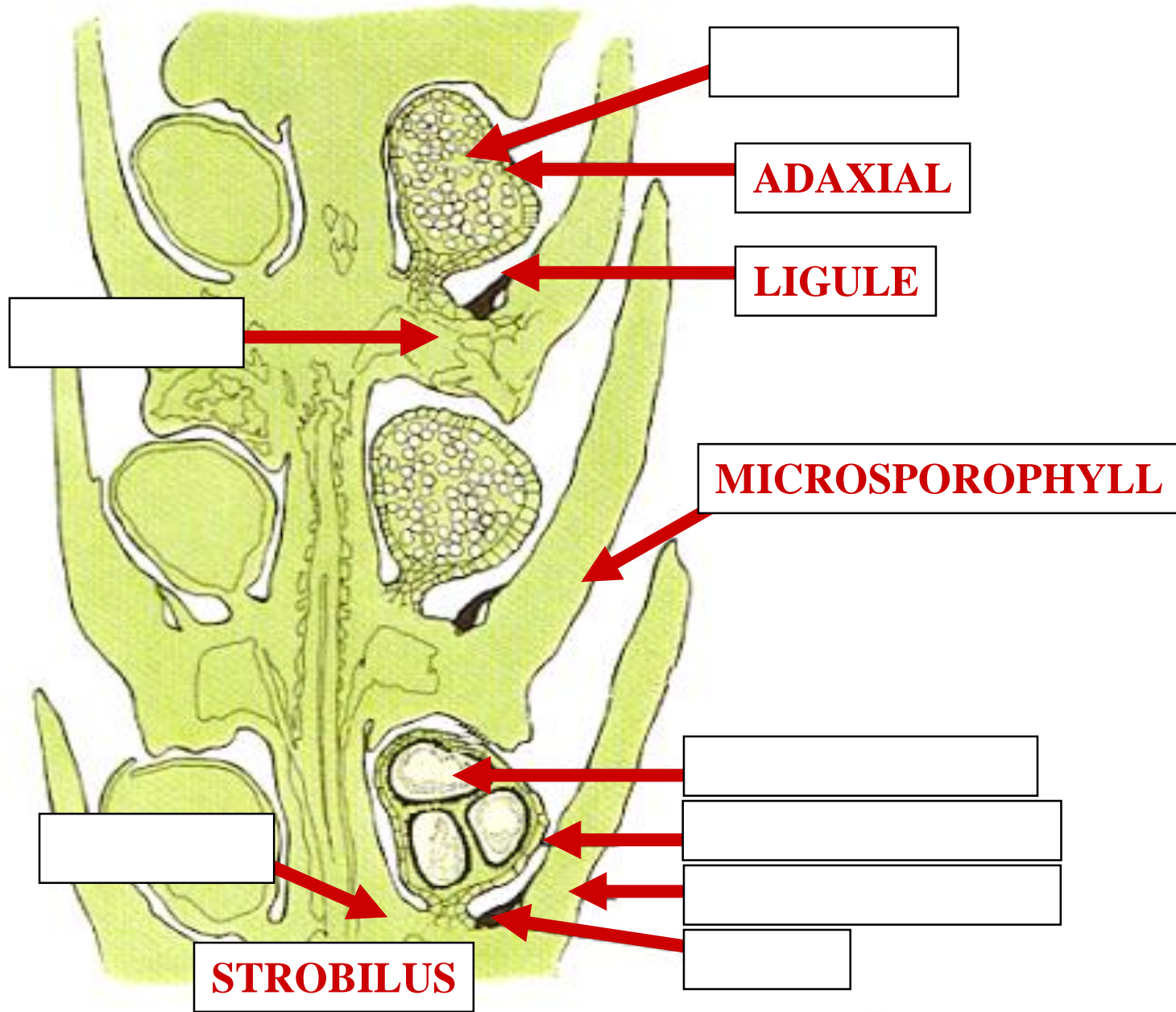
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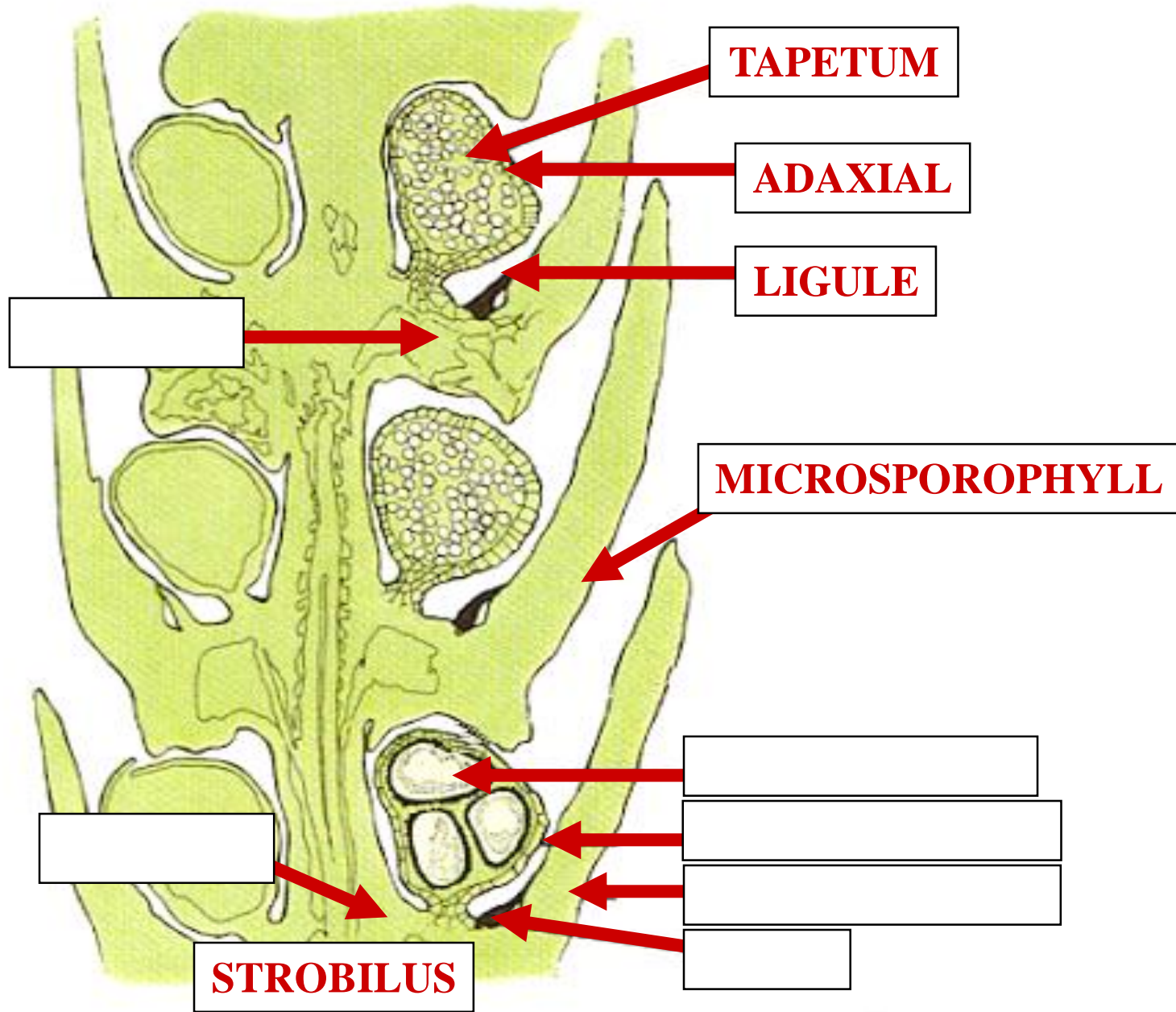
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**TAPETUM**

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**LIGULE**

**MICROSPOROPHYLL**

**STROBILUS**

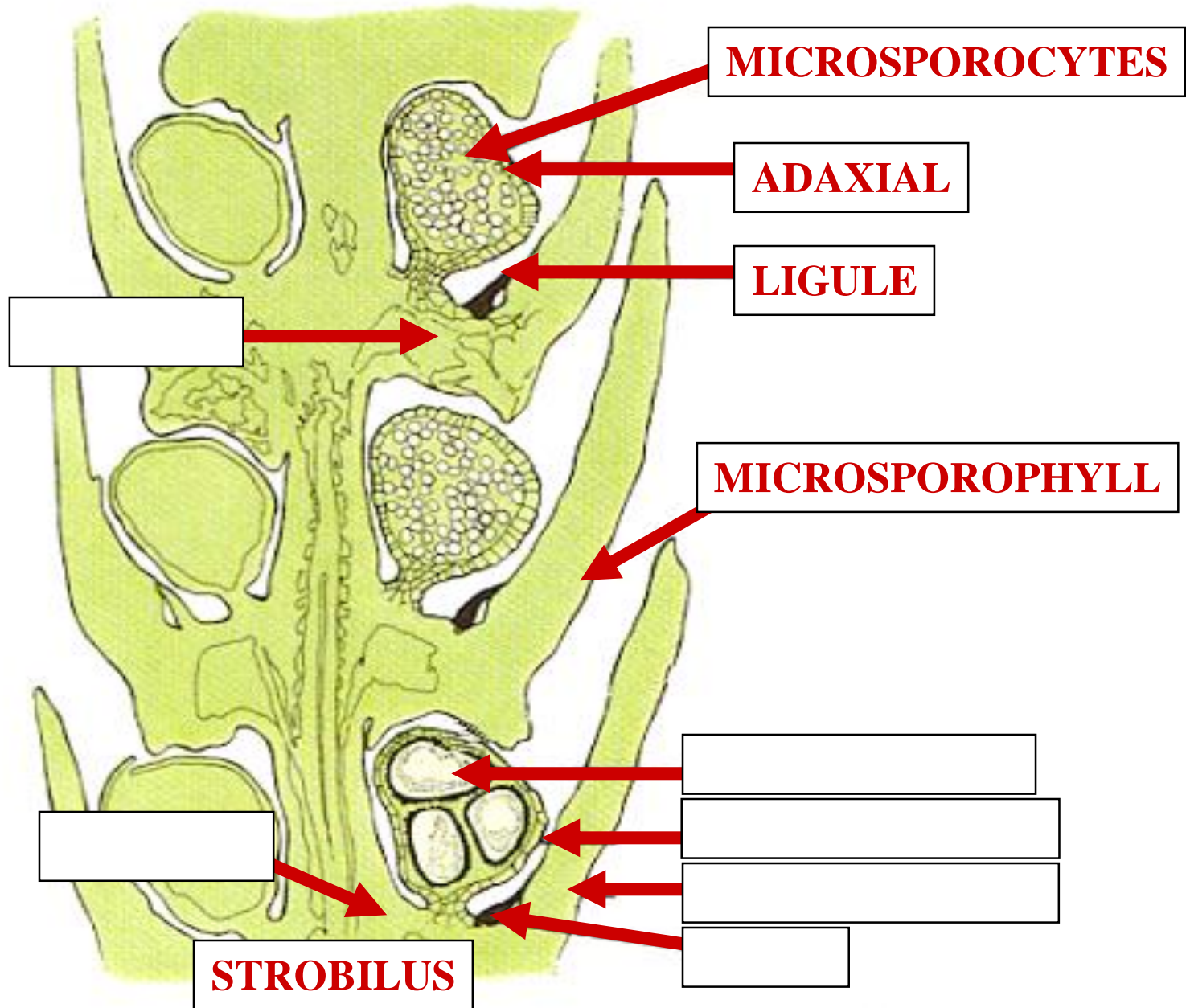
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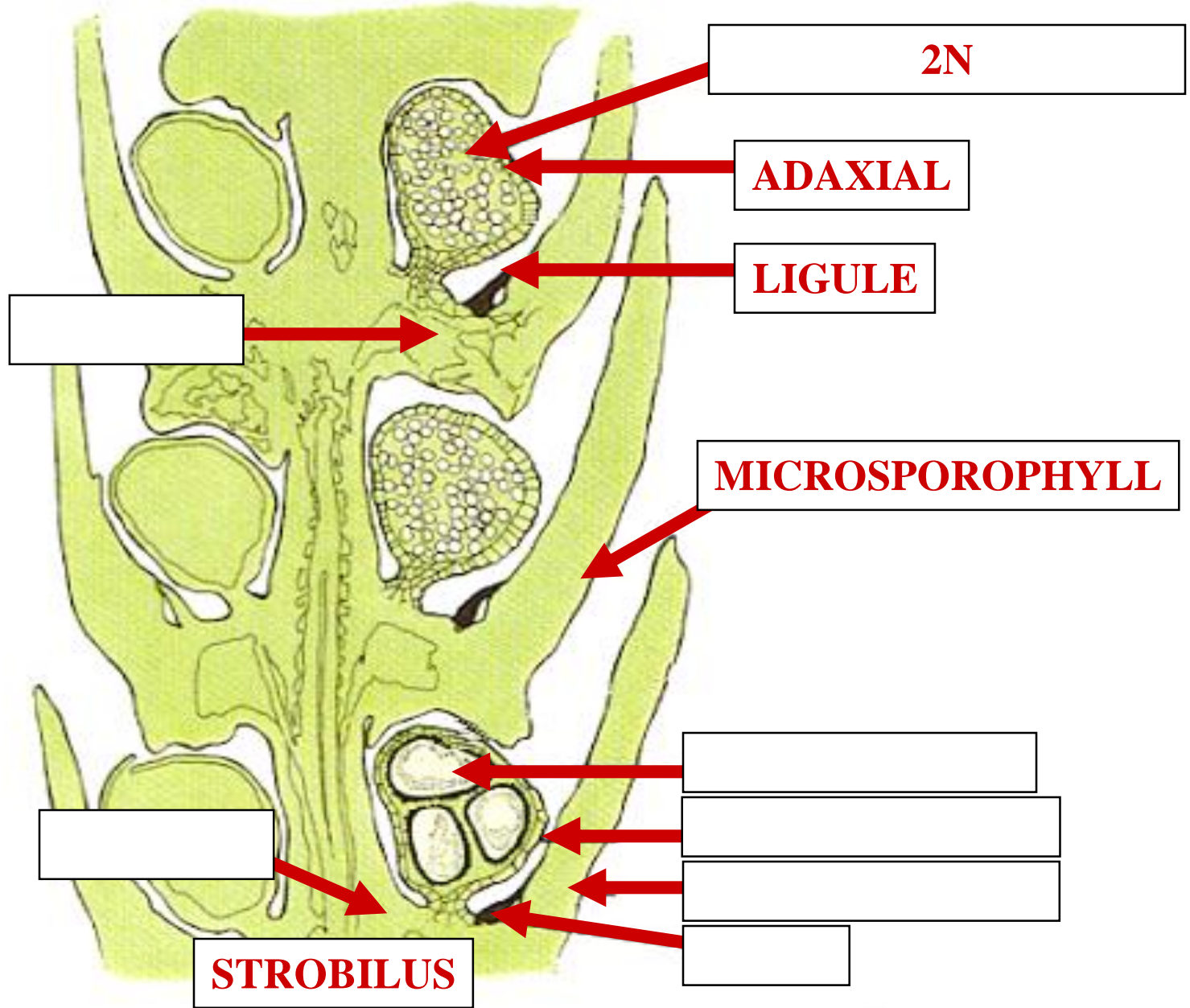
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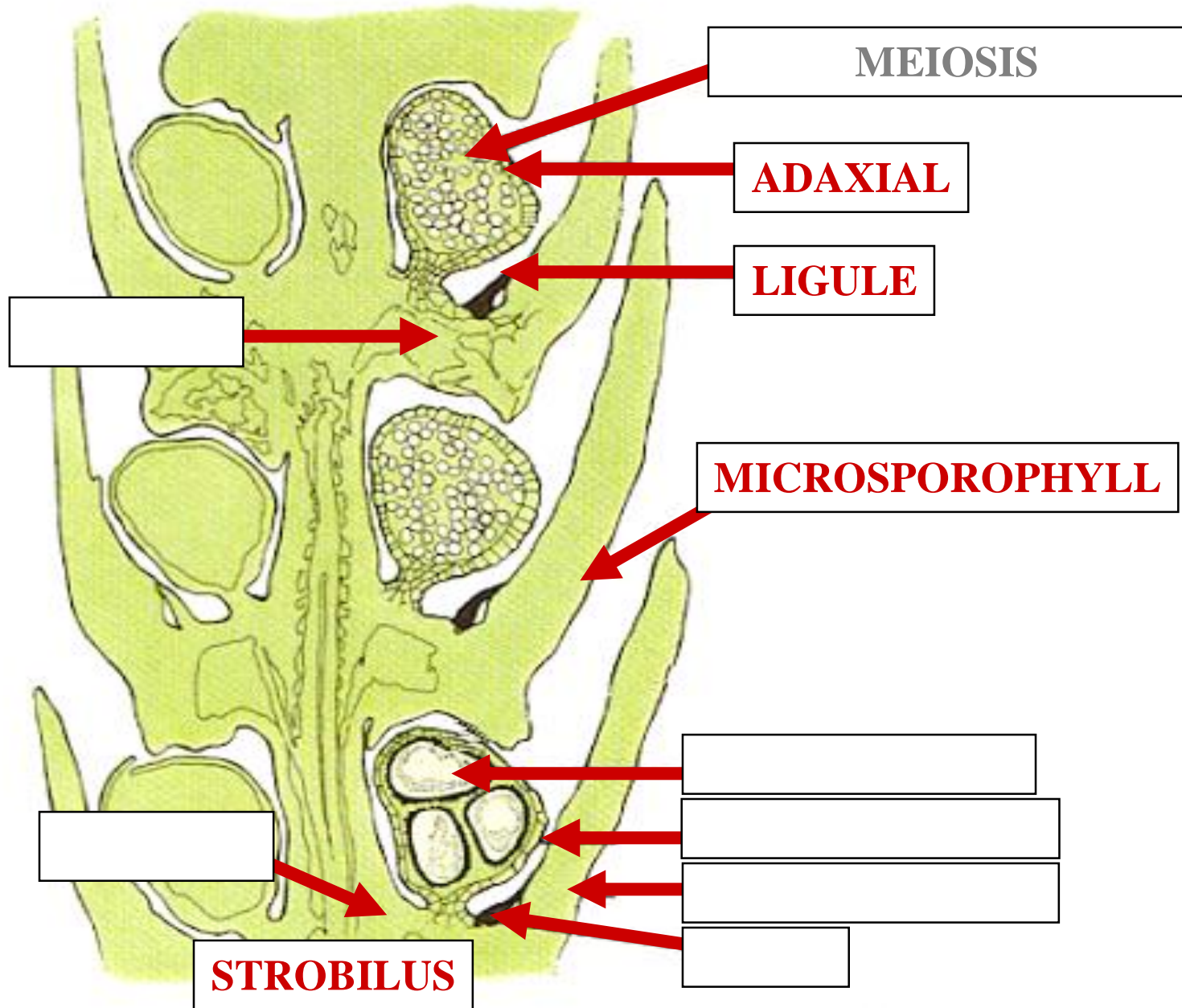
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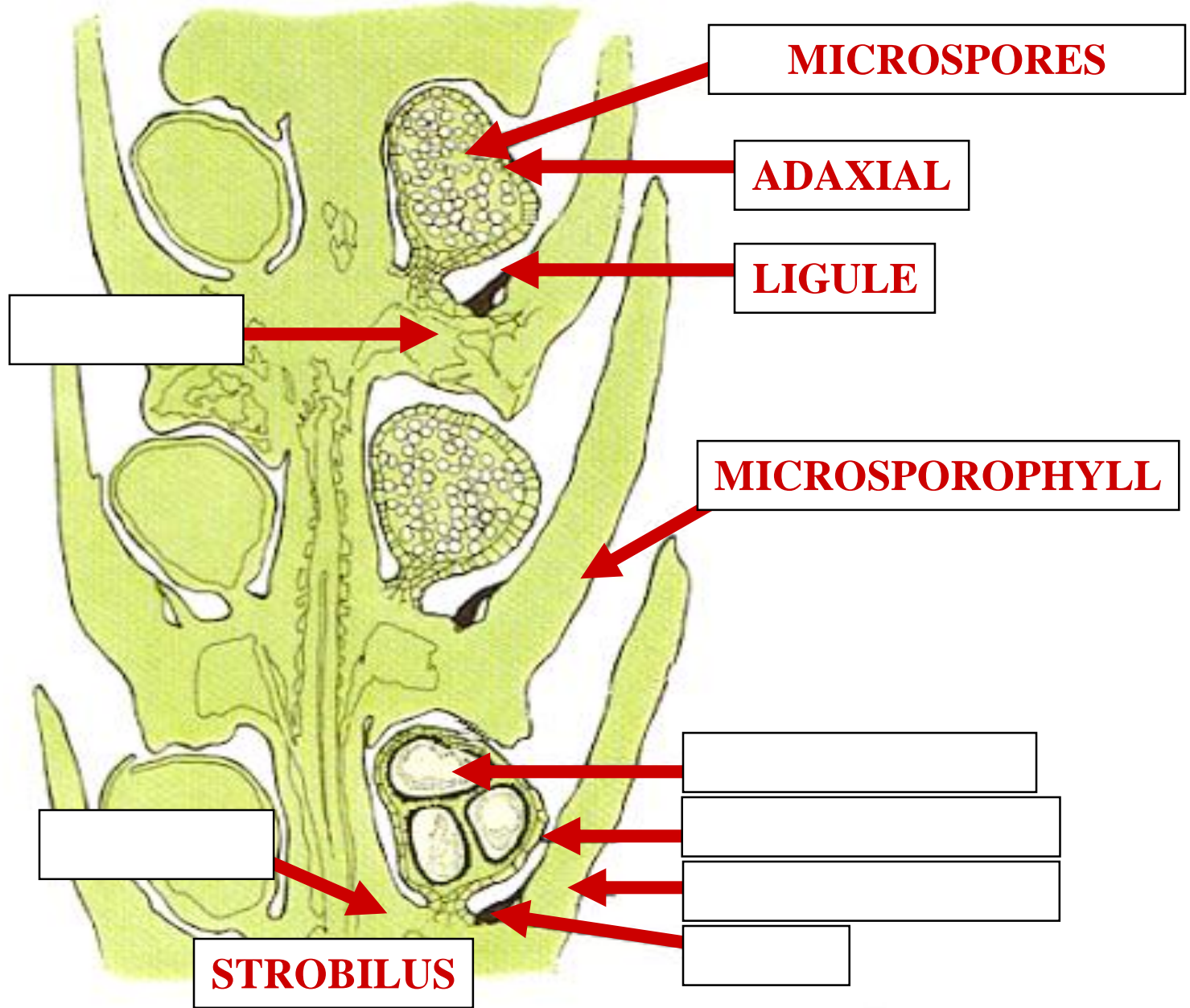
LIGULE

MICROSPOROPHYLL

STROBILUS







**MICROSPORES**

**ADAXIAL**

**LIGULE**

**MICROSPOROPHYLL**

**STROBILUS**

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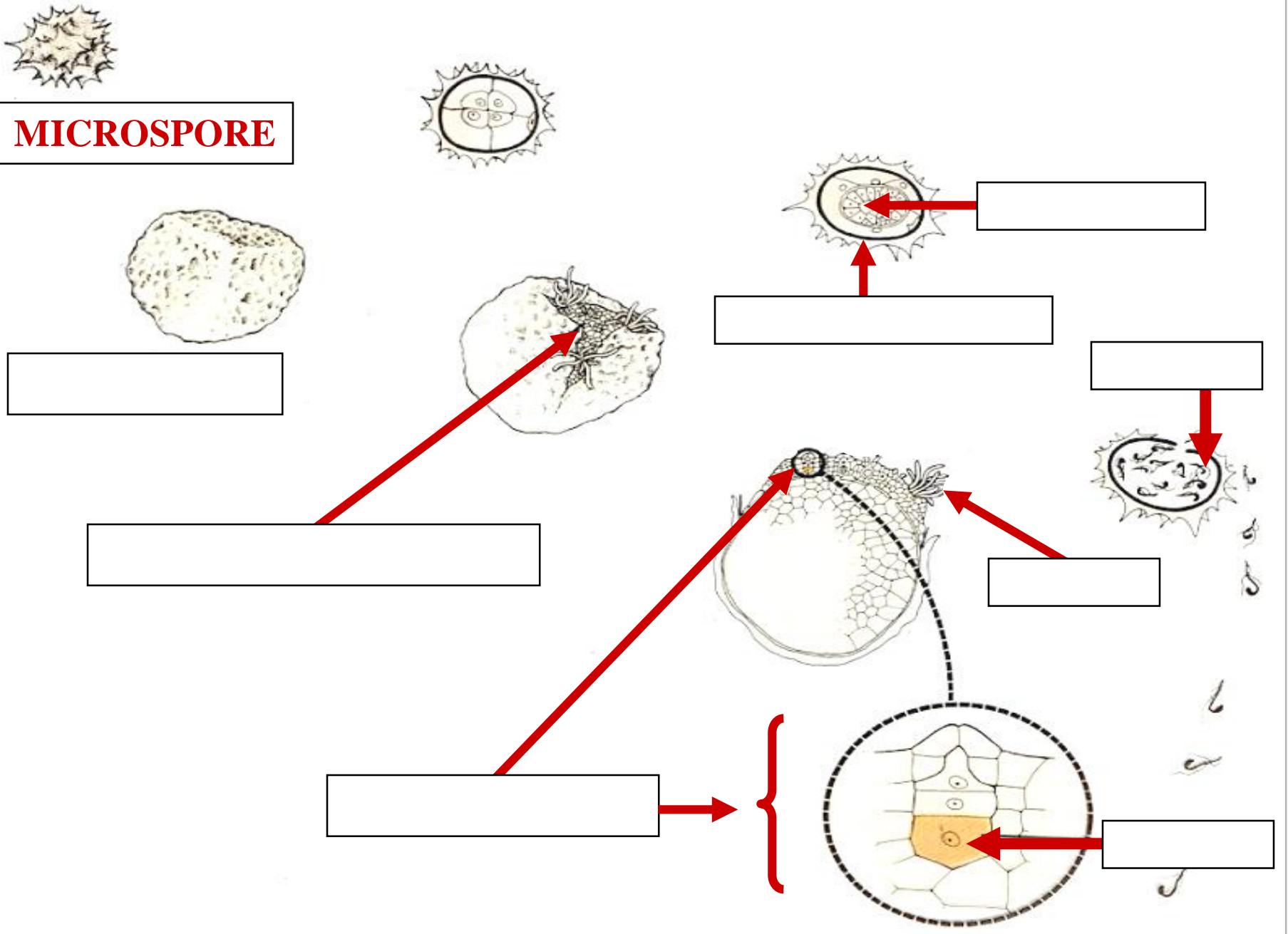
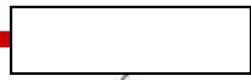
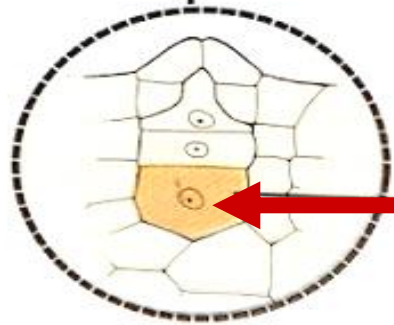
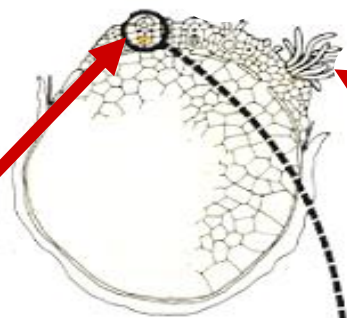
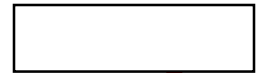
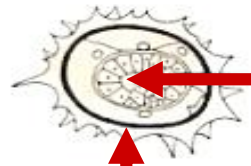
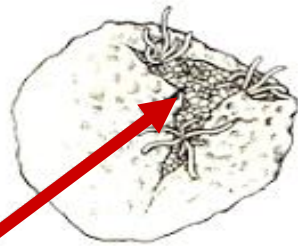
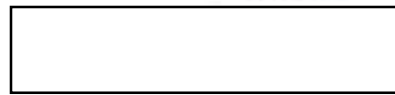
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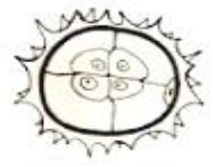


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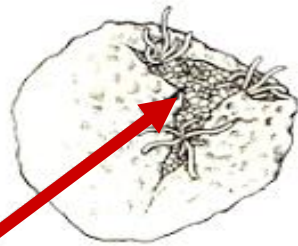




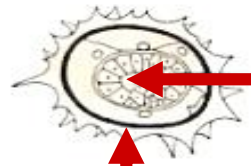
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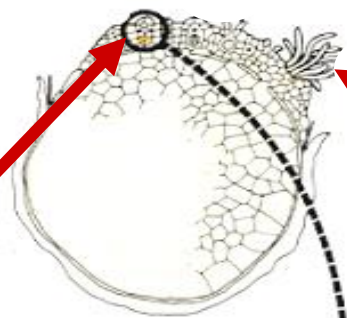
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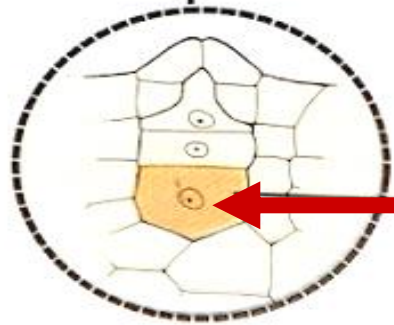
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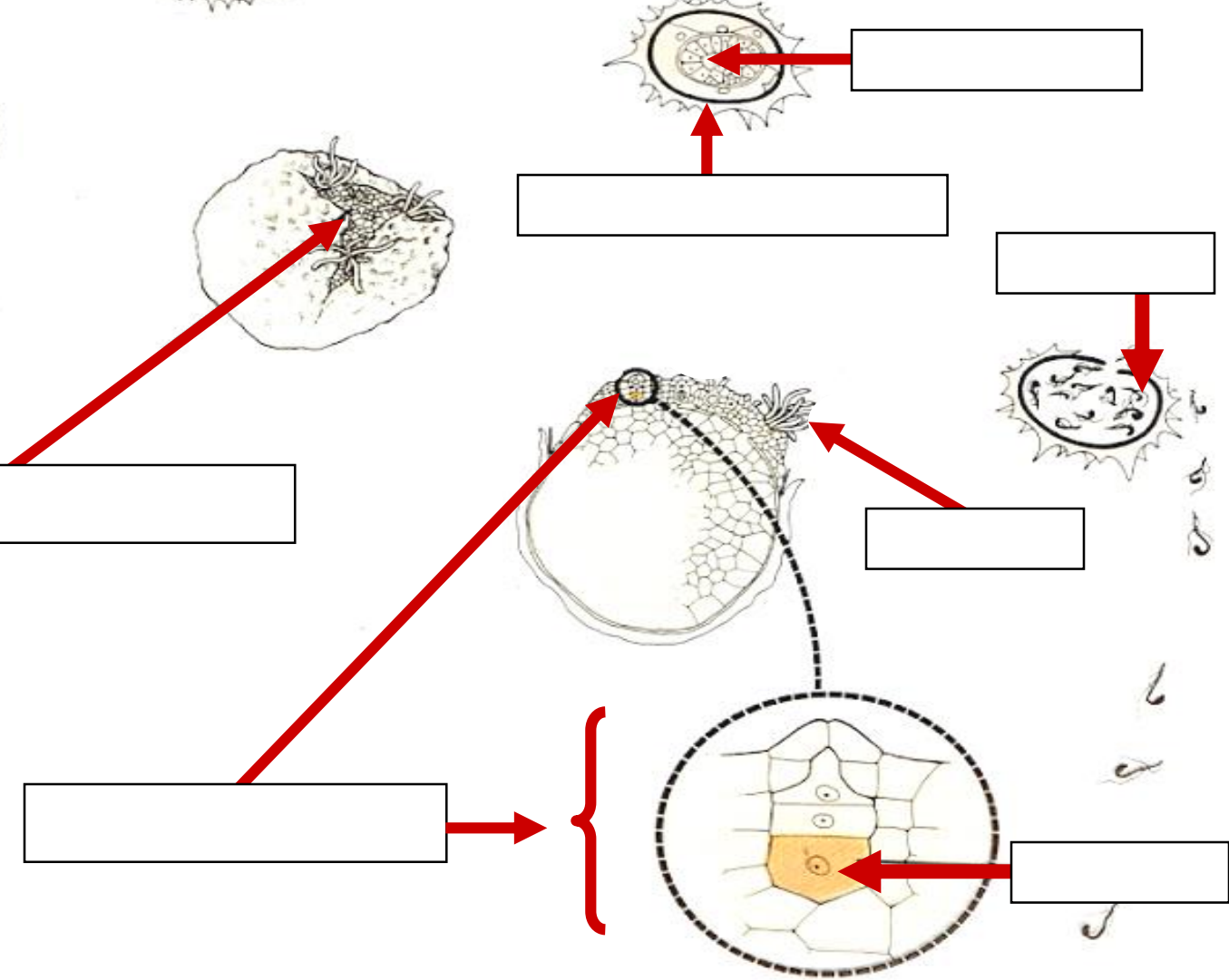
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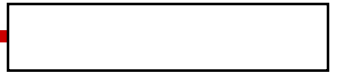
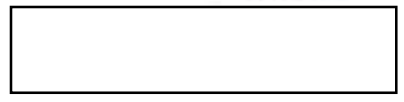
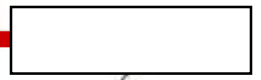
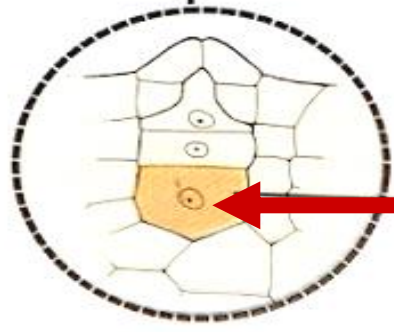
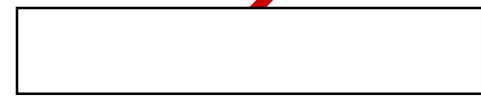
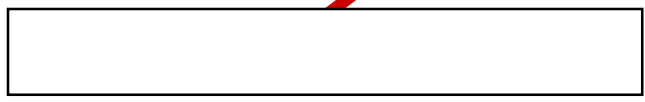
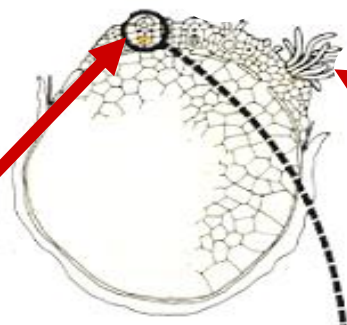
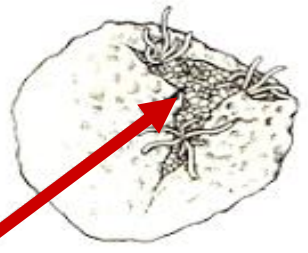
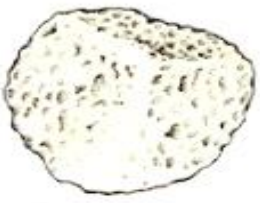
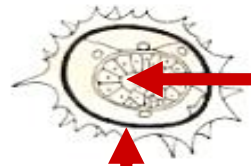


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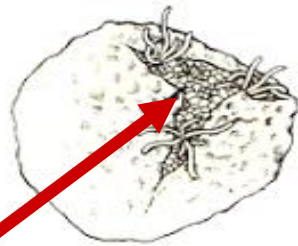
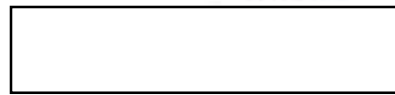
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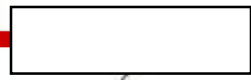
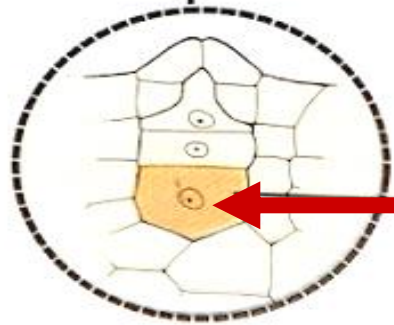
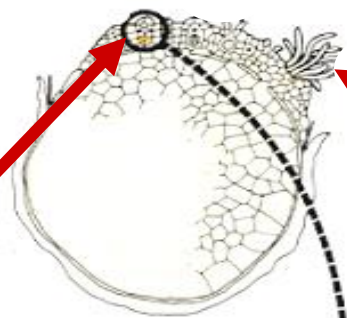
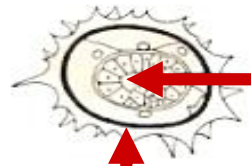
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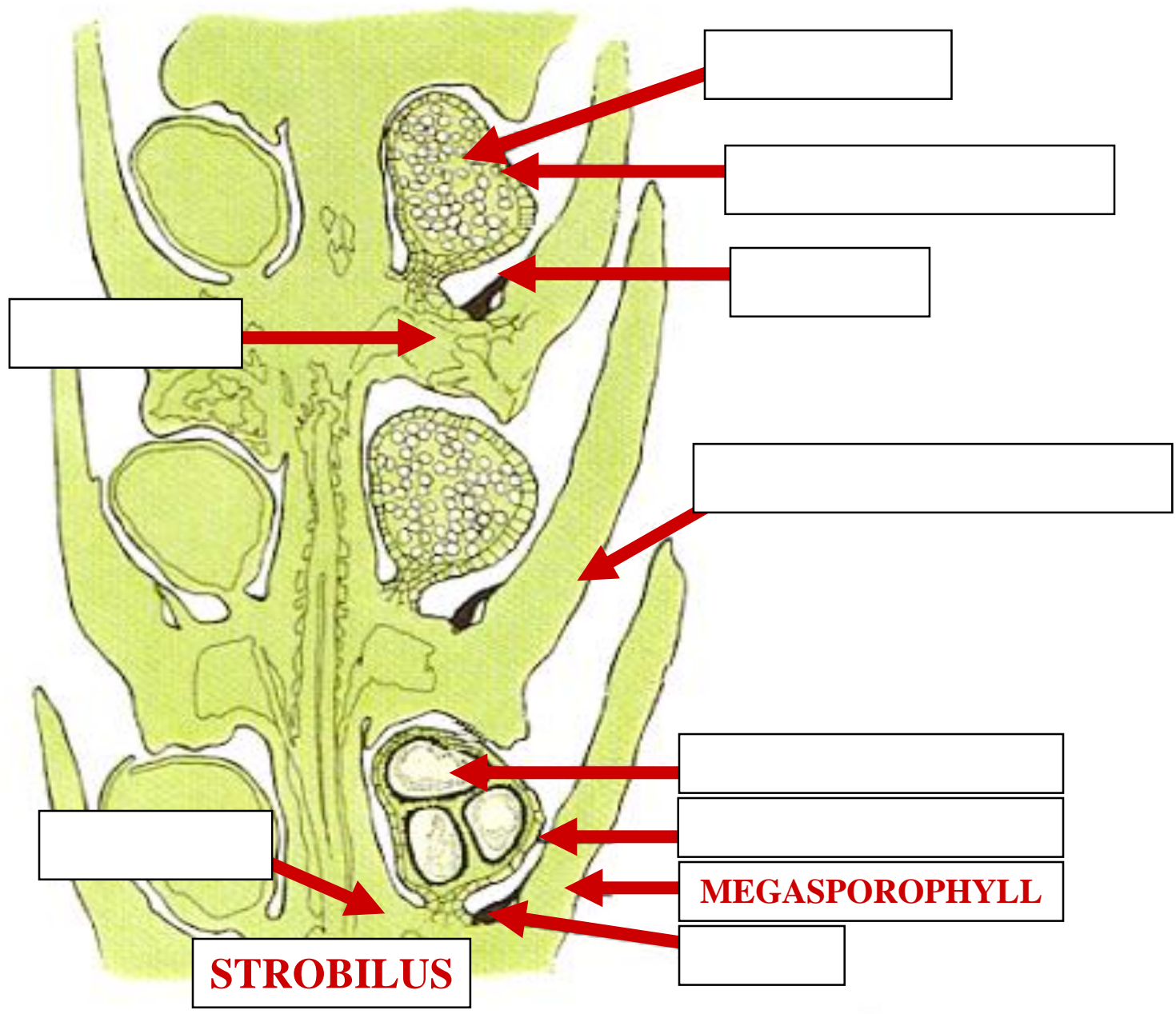
MITOSIS



MICROGAMETOPHYTE



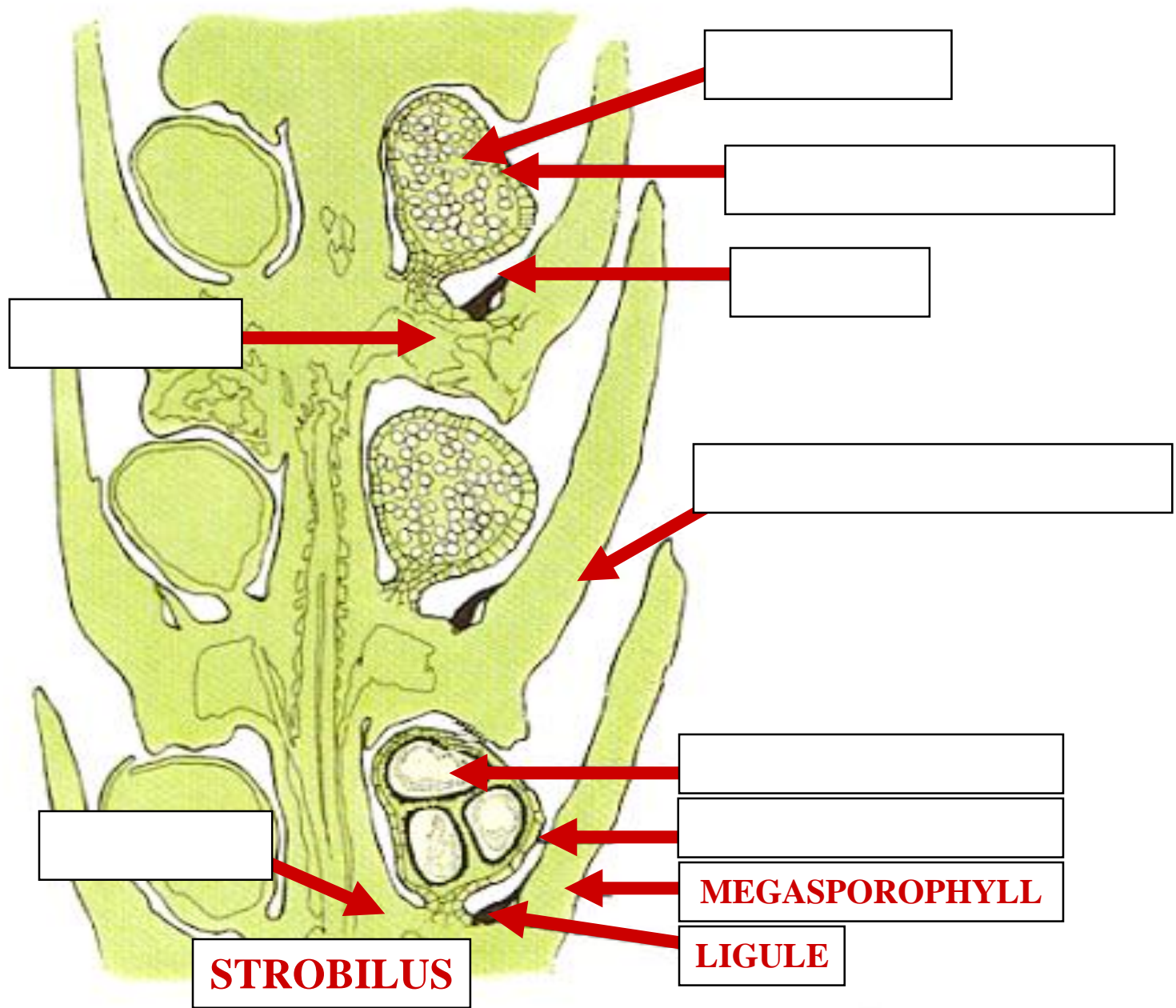




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**MEGASPOROPHYLL**





**STROBILUS**

**MEGASPOROPHYLL**

**LIGULE**

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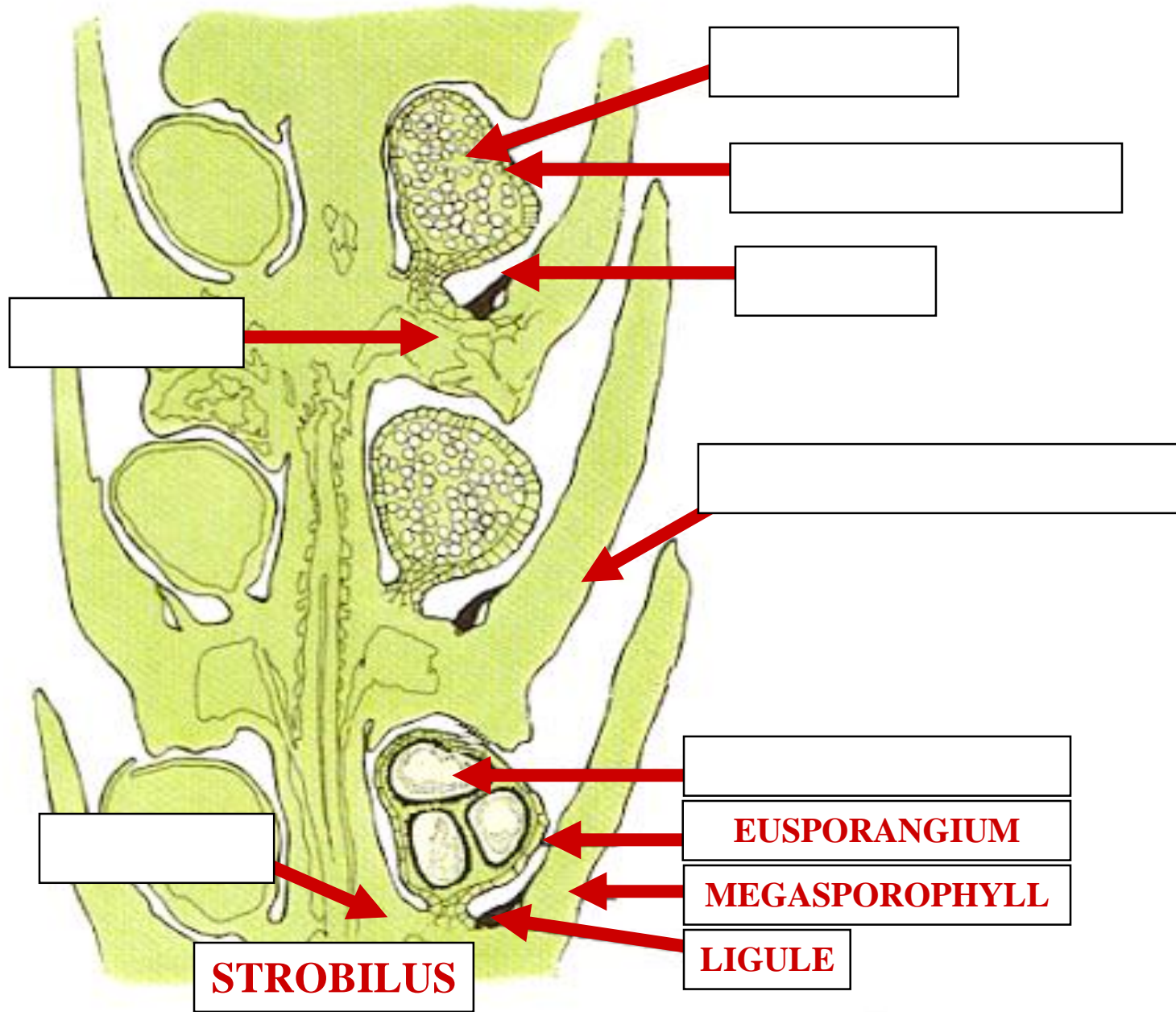
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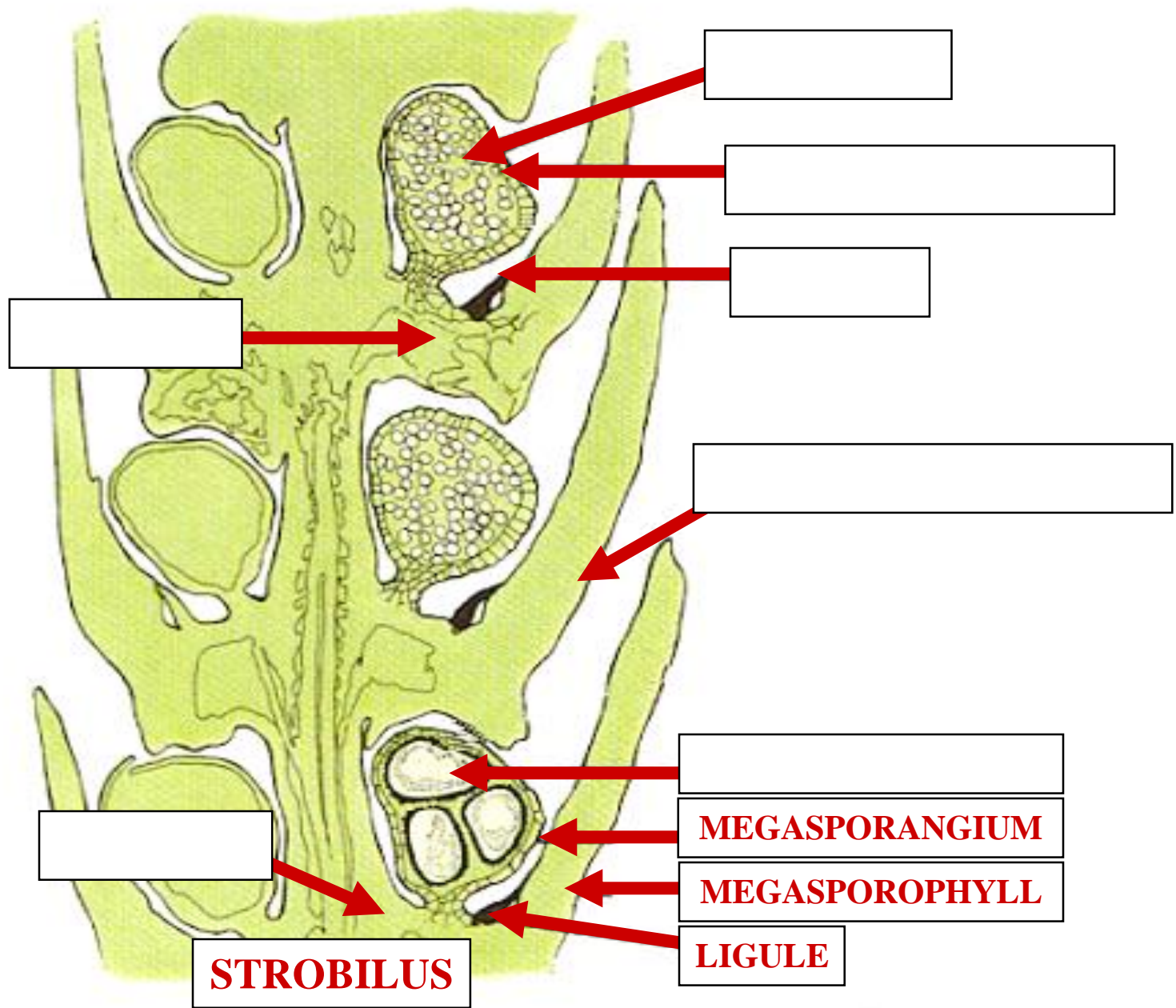
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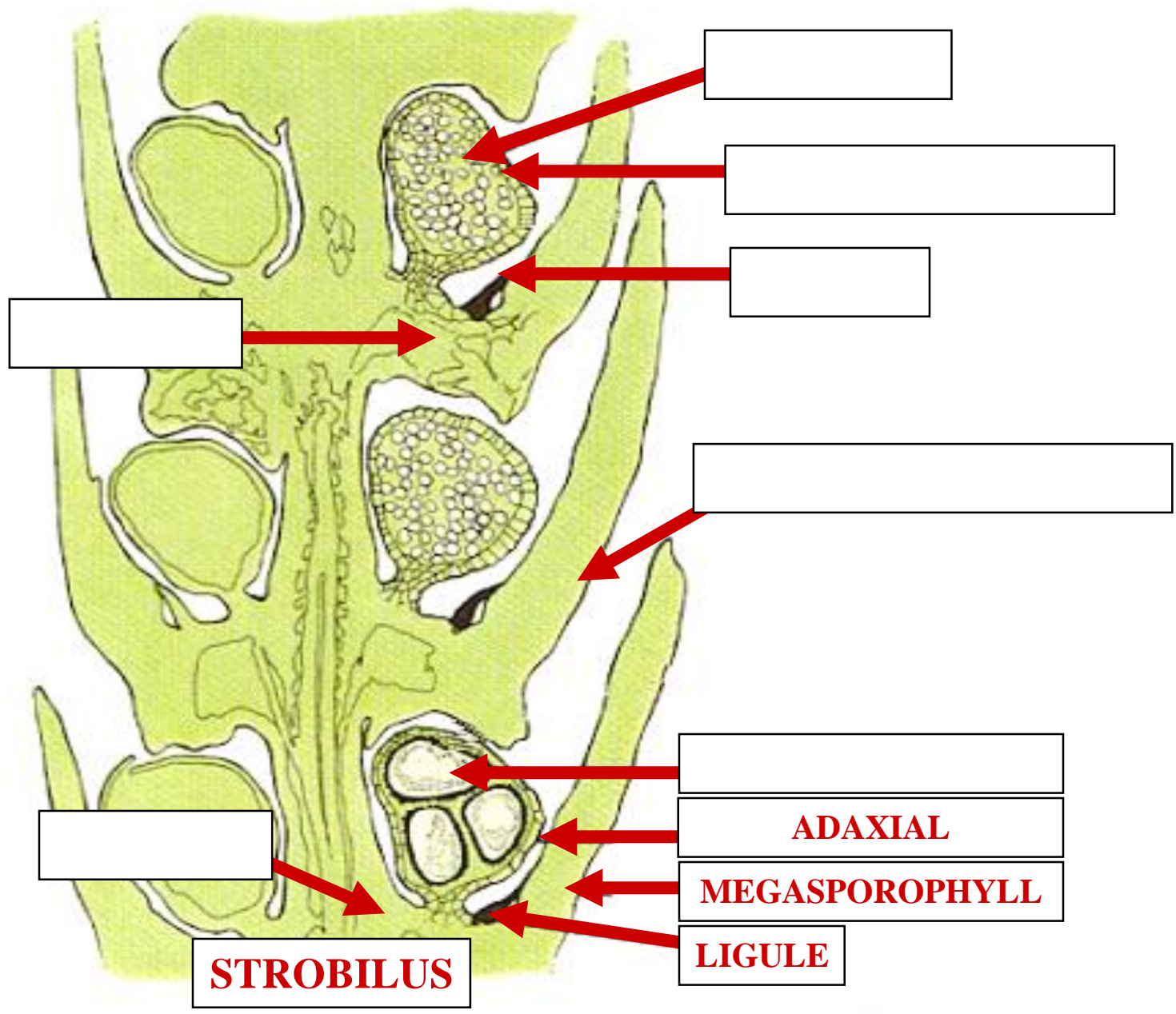
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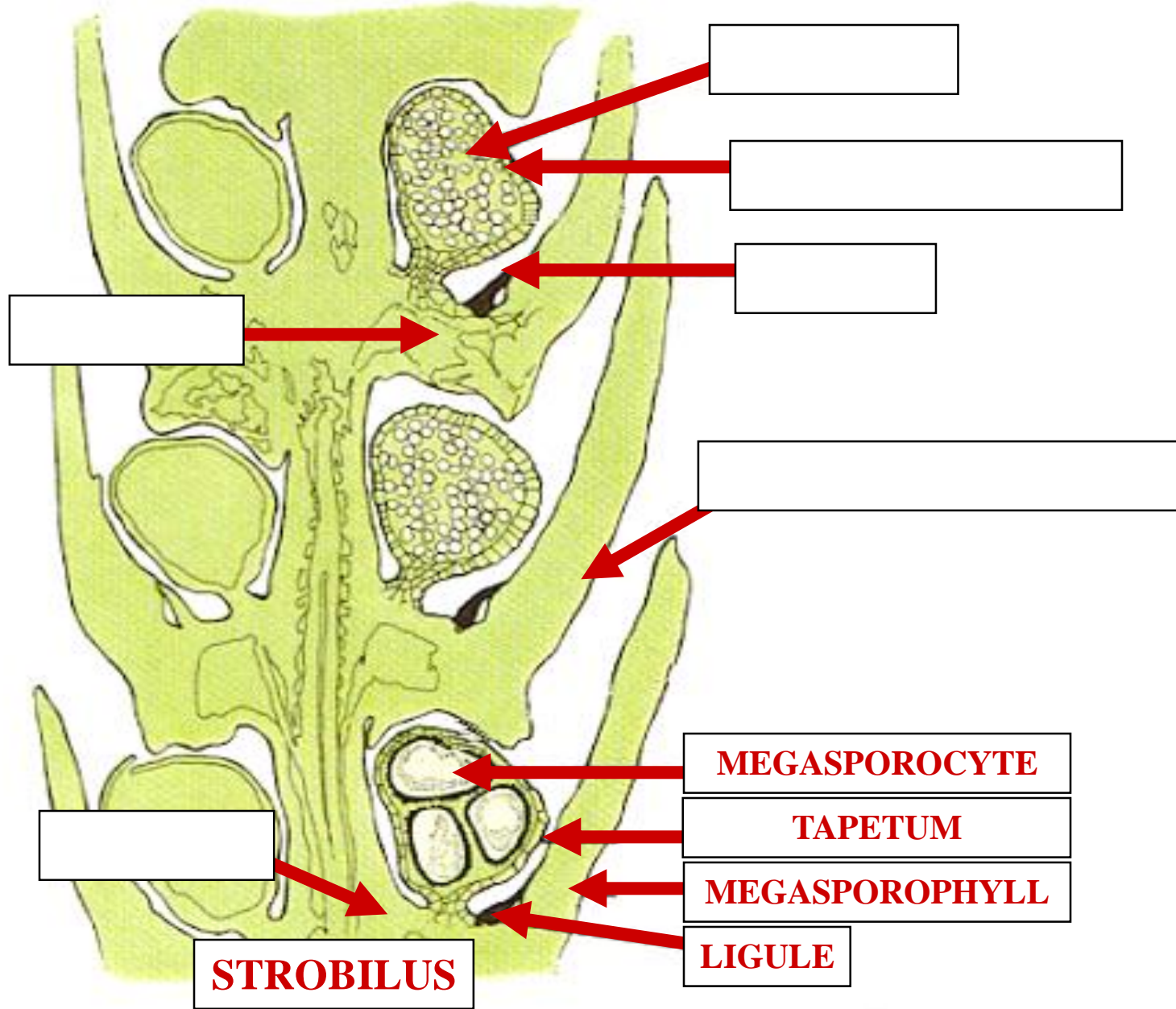
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**MEGASPOROPHYLL**

**LIGULE**

**STROBILUS**





**STROBILUS**

**MEGASPOROCYTE**

**TAPETUM**

**MEGASPOROPHYLL**

**LIGULE**

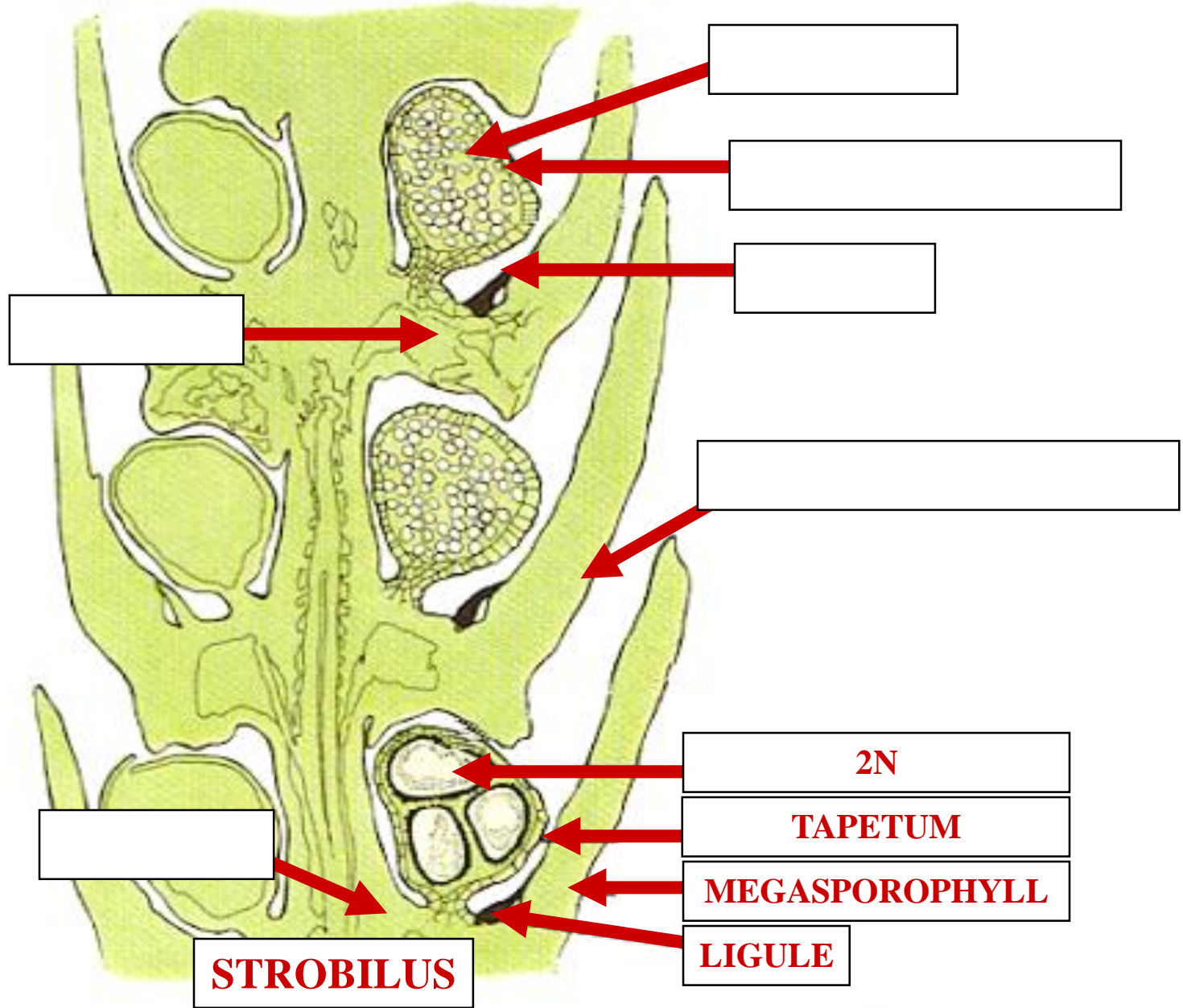
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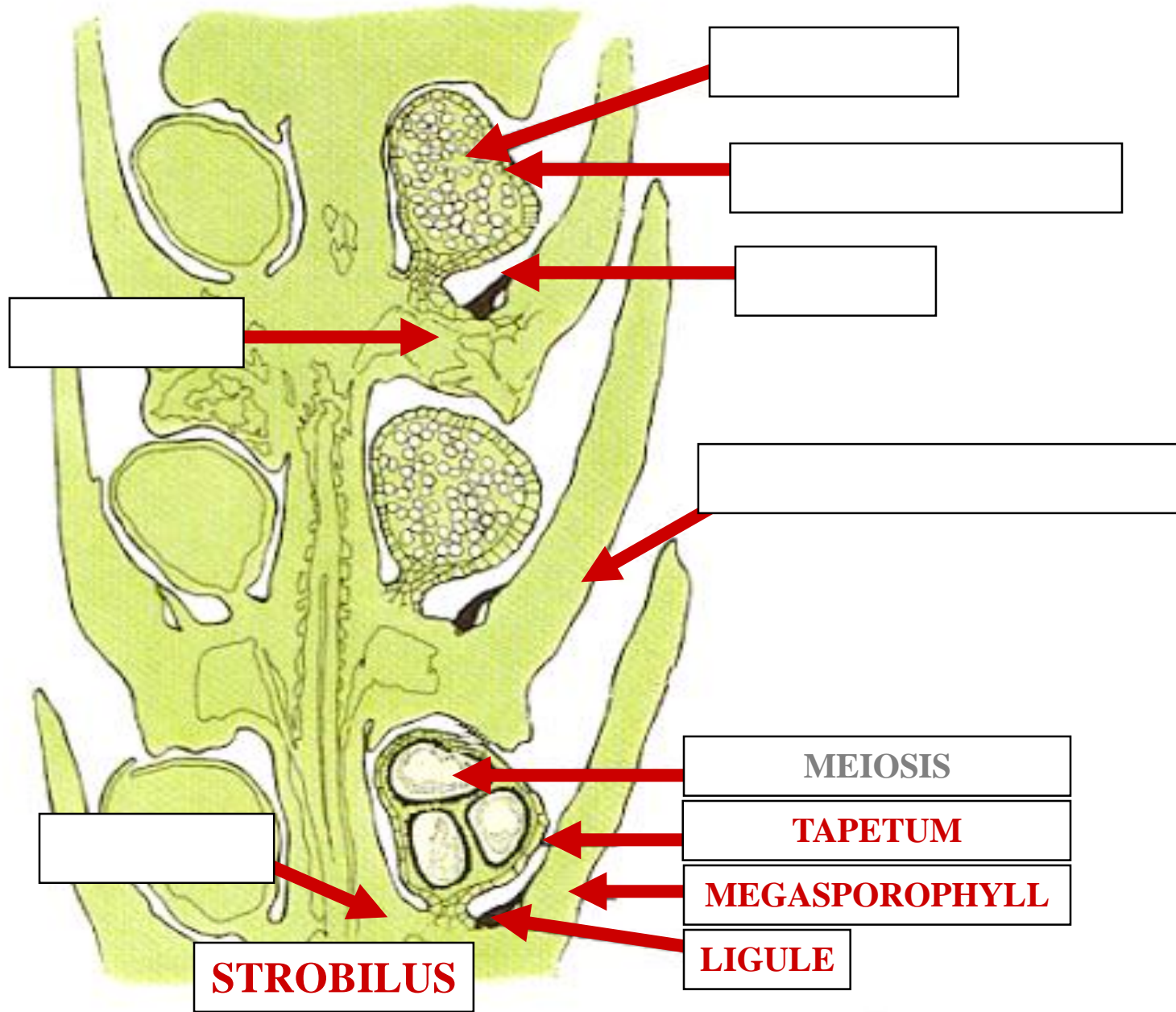
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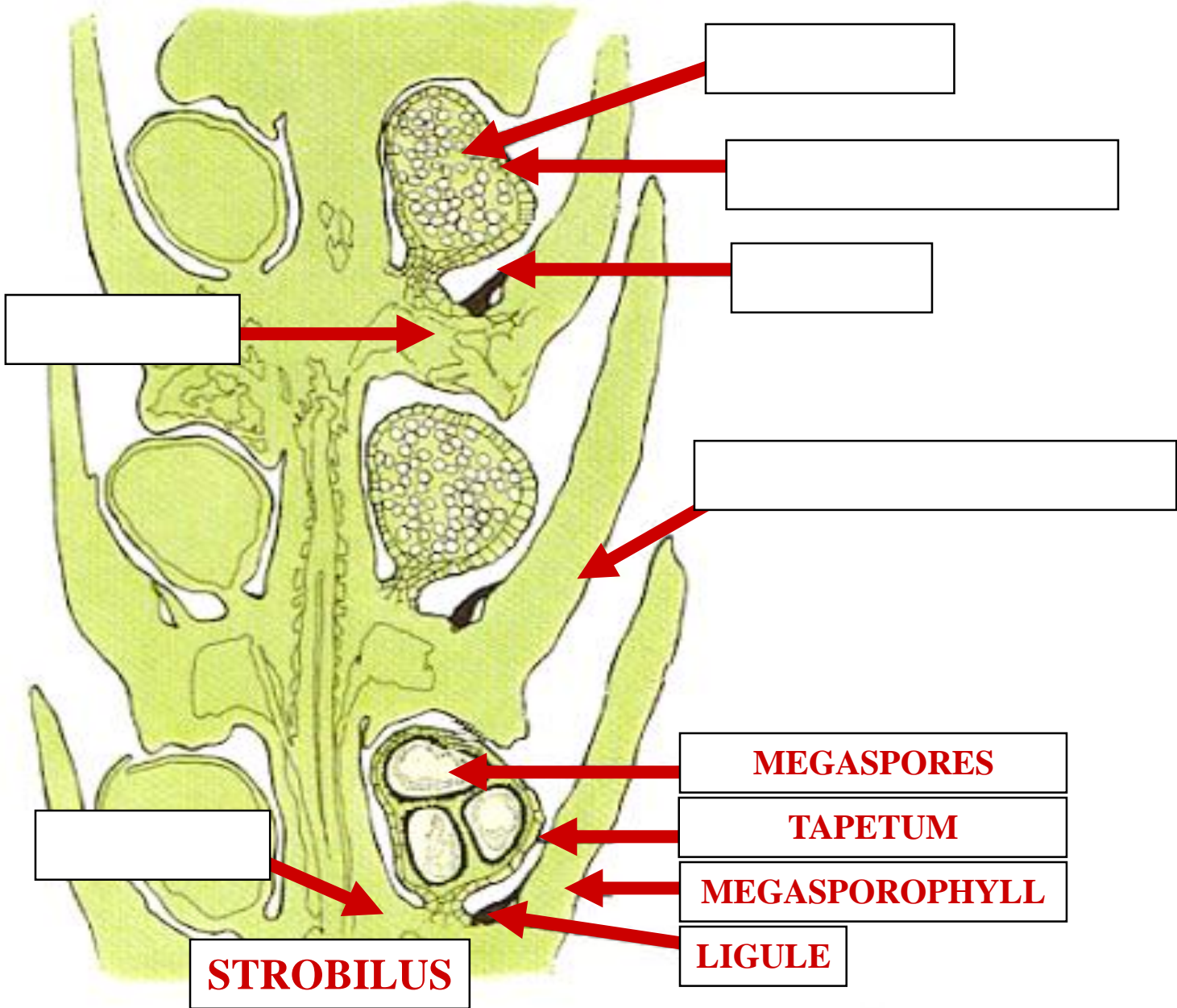
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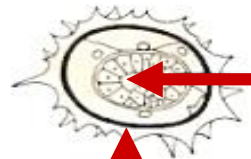
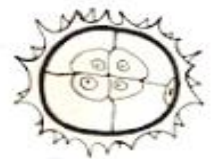
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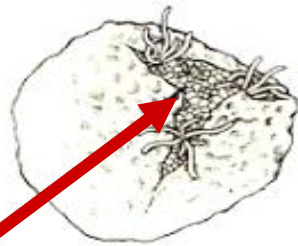
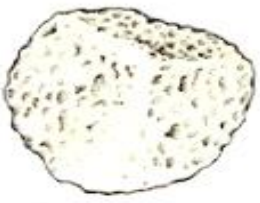






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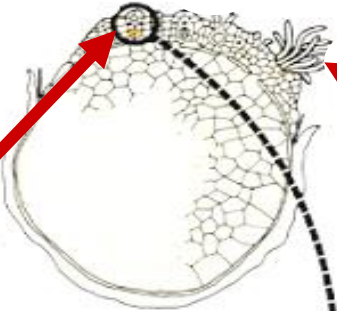
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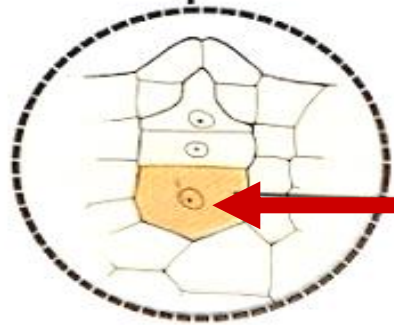
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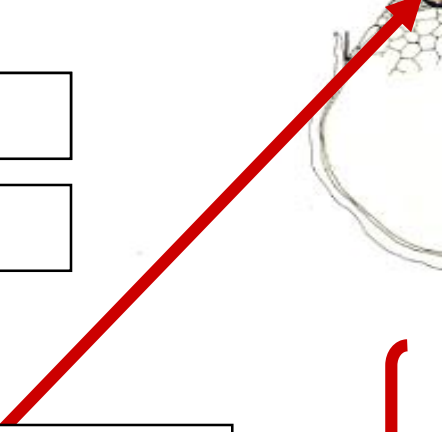
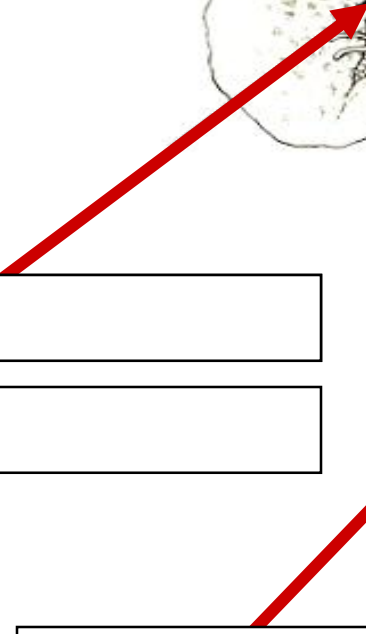


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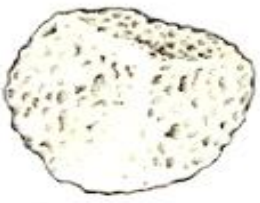


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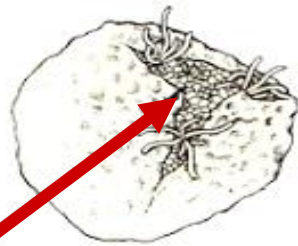




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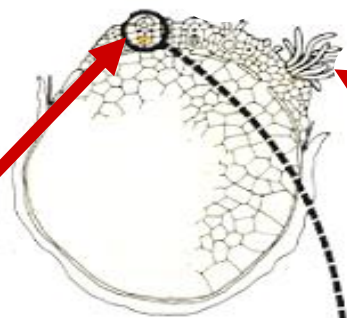
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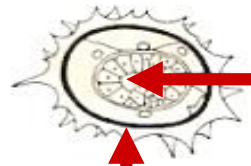
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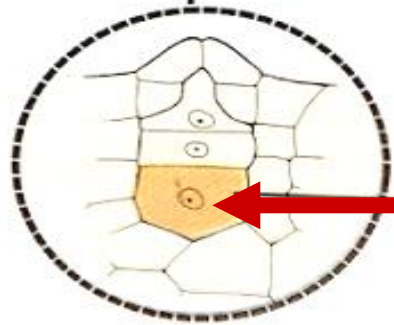
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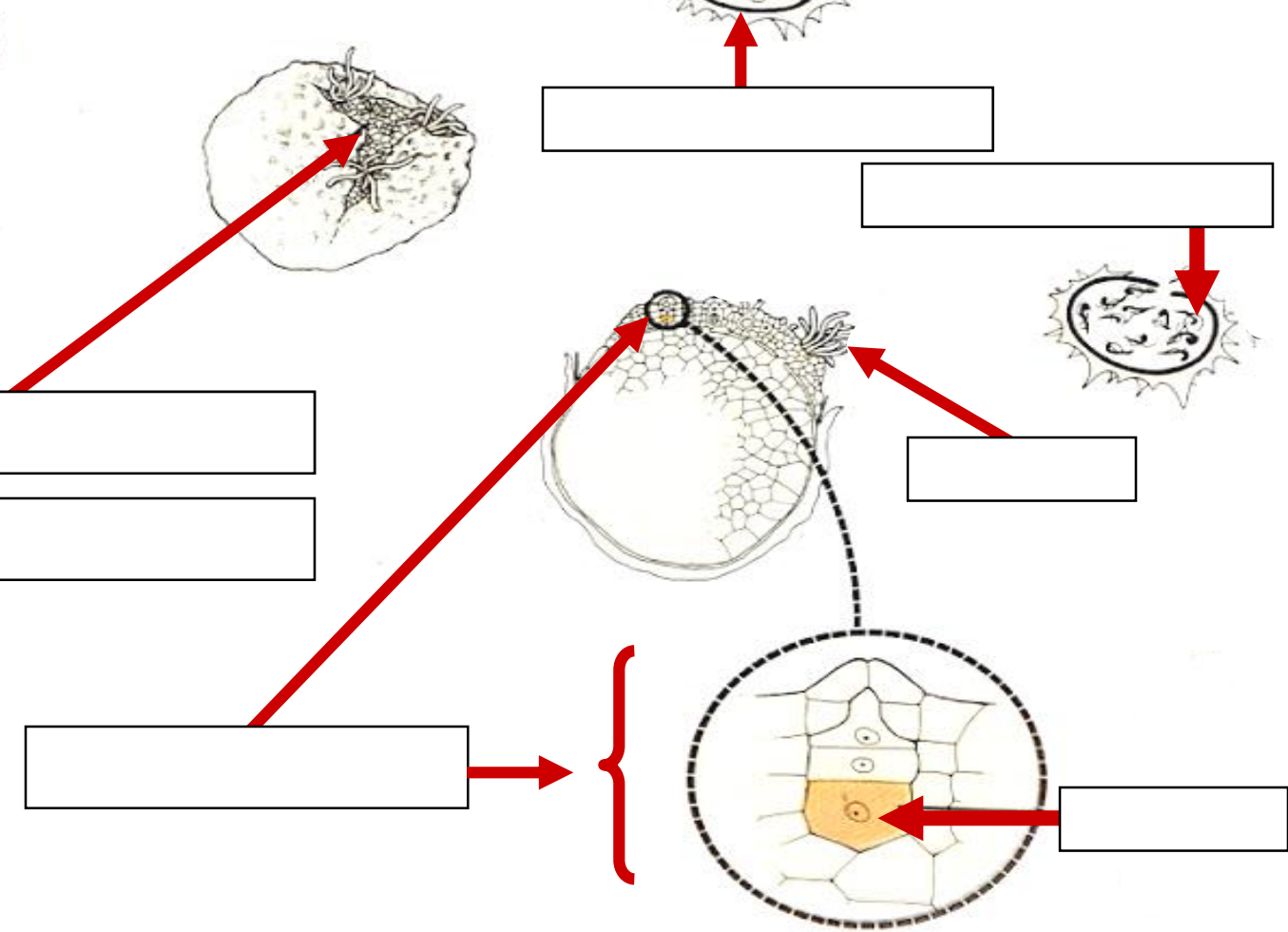
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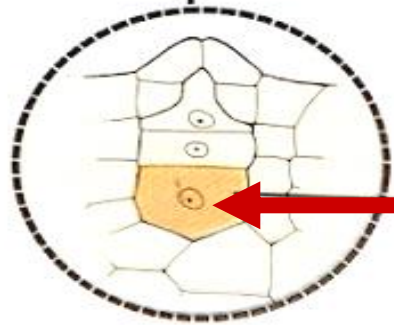
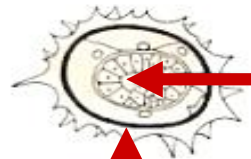
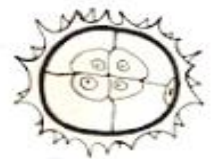


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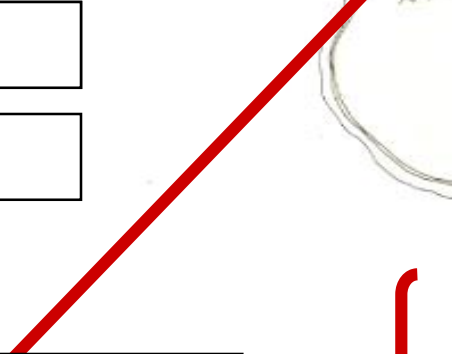
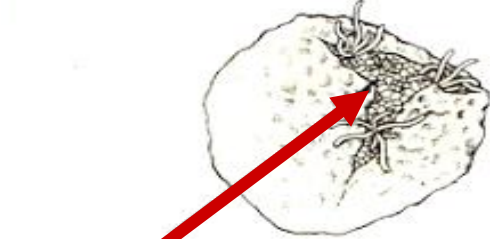
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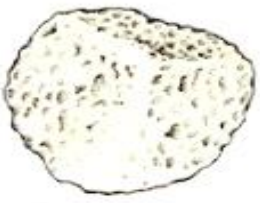
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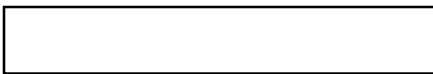
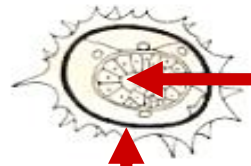
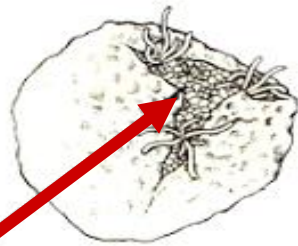
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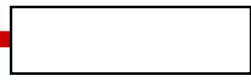
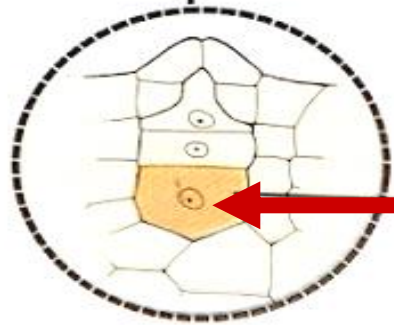
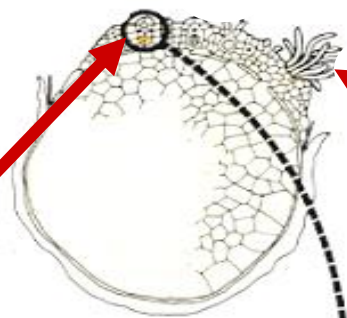


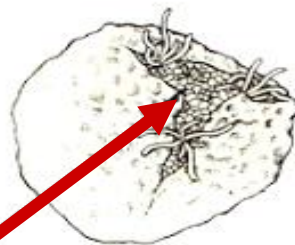
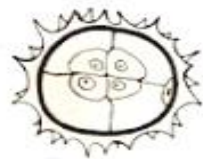
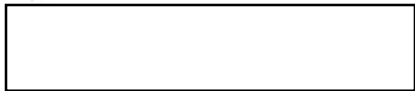


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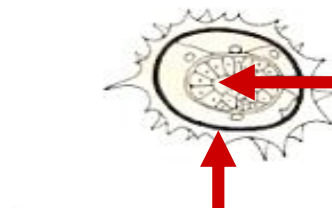


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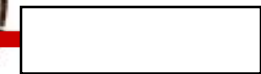
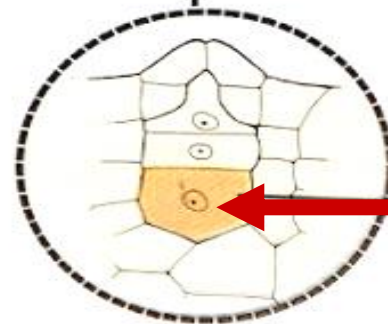
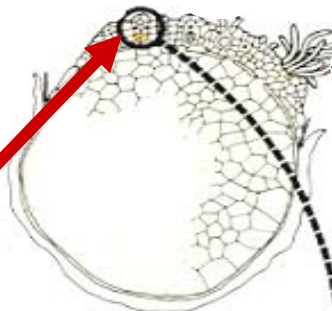
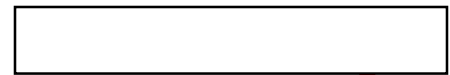
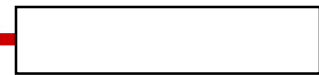




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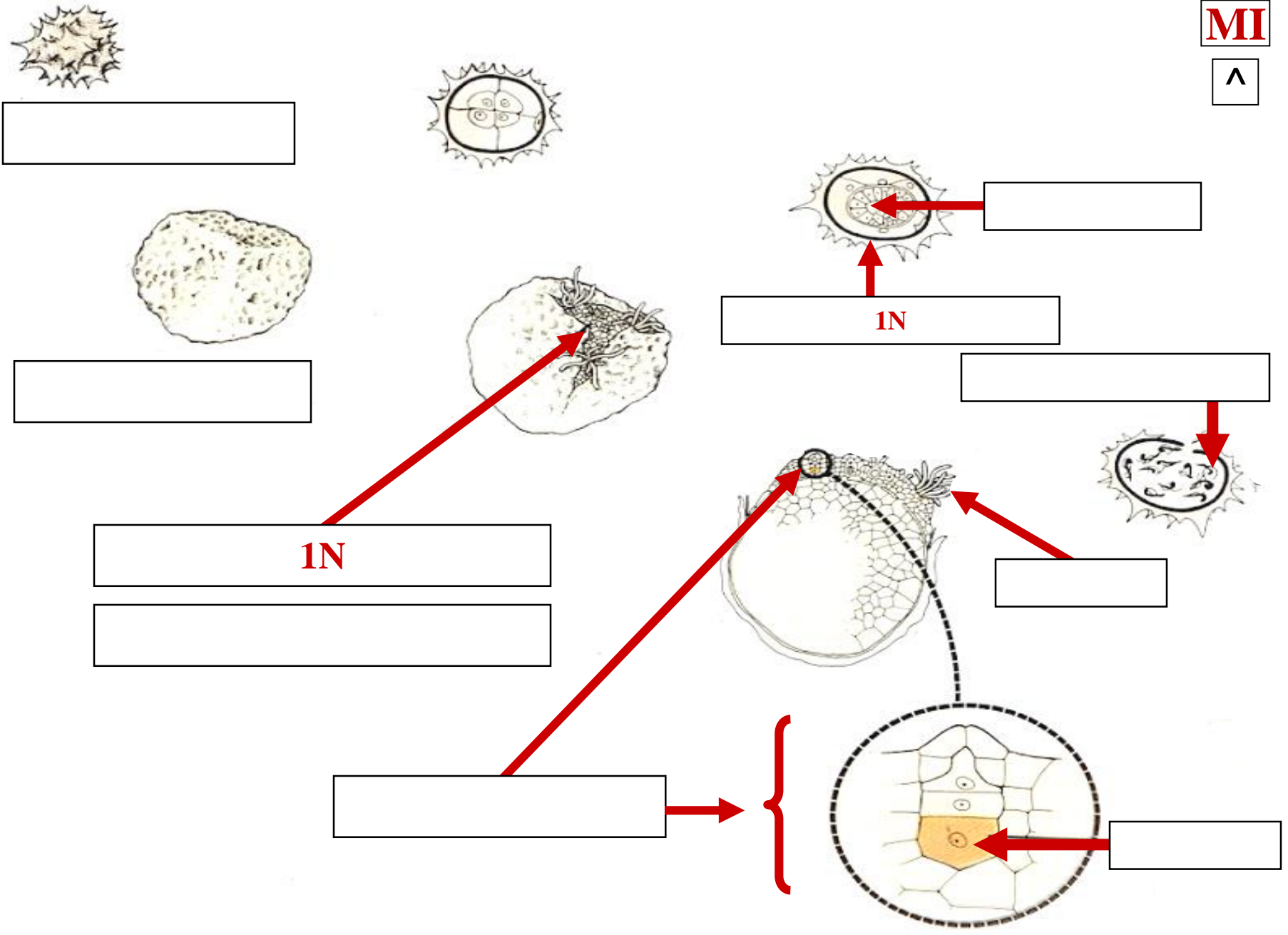
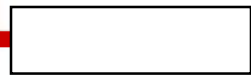
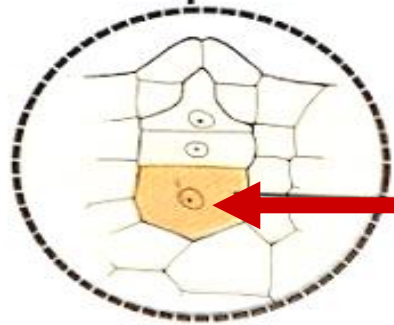
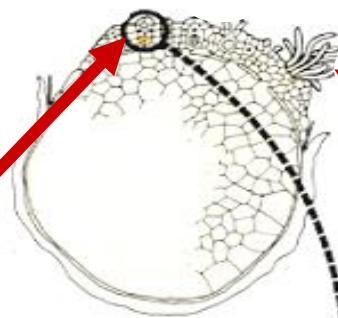
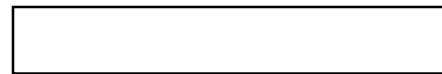
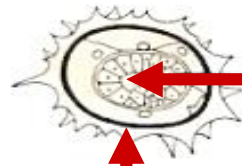
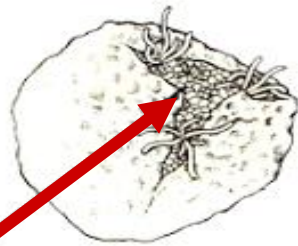
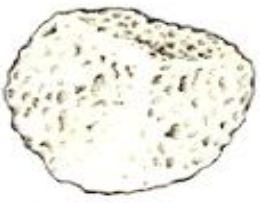
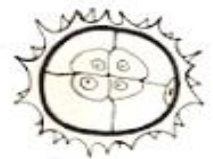


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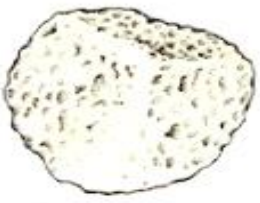
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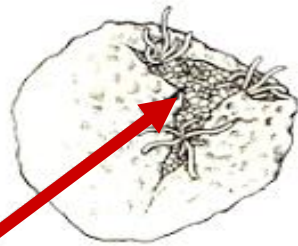




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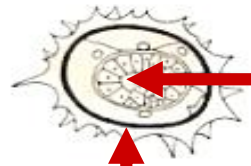


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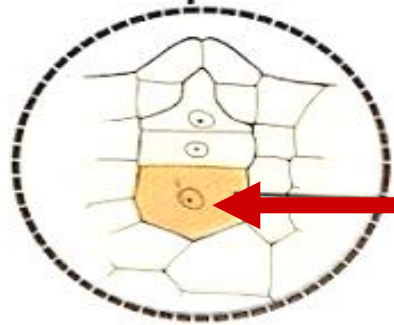
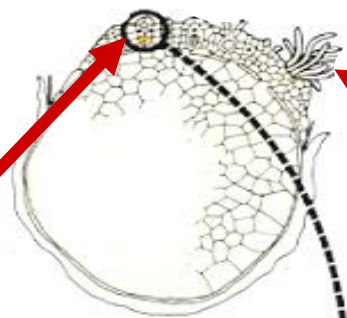


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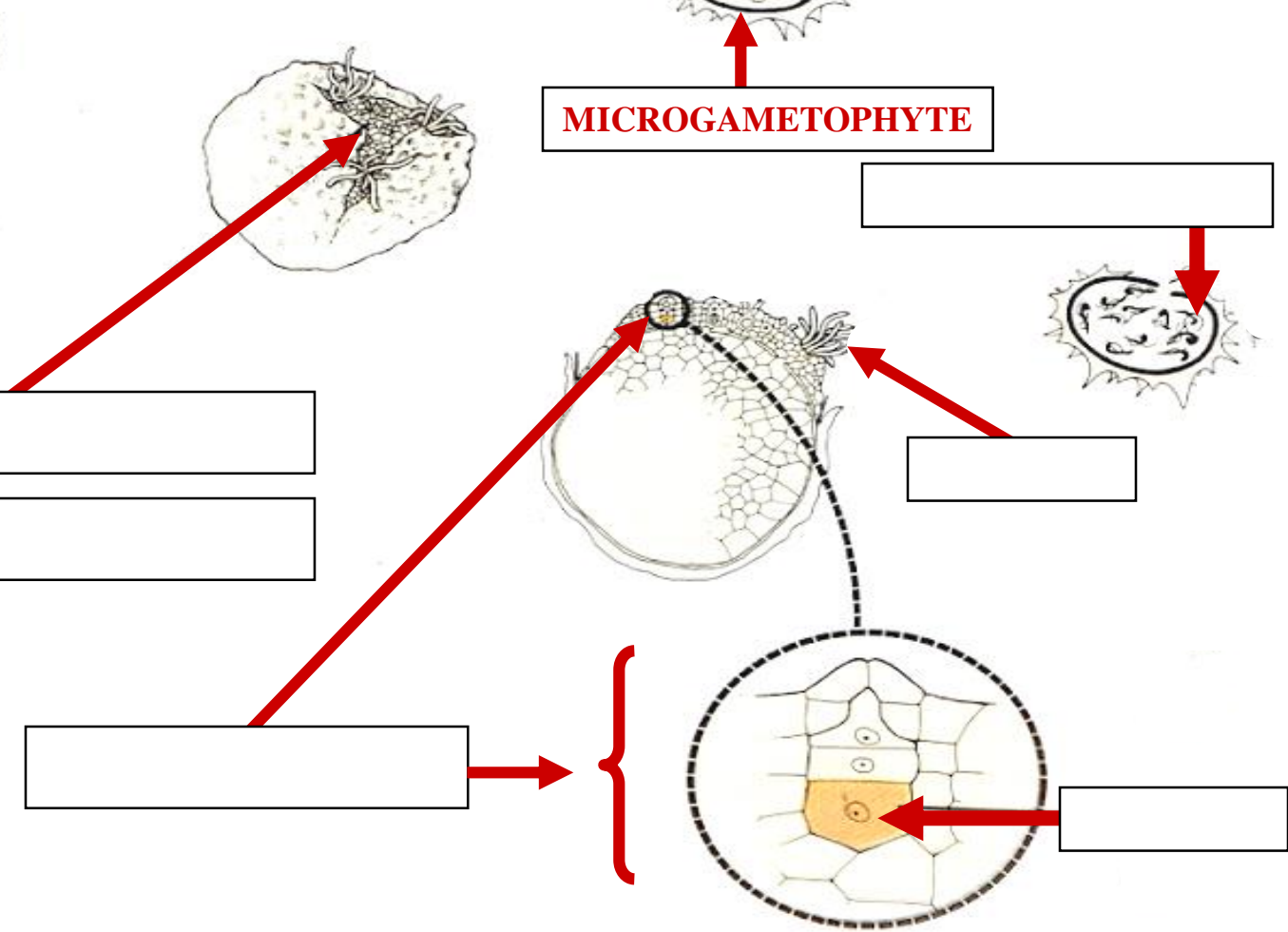
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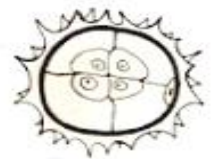
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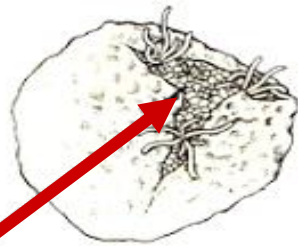




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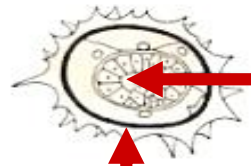
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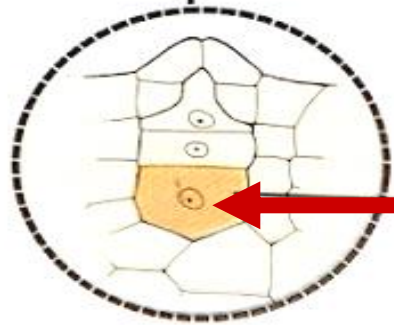
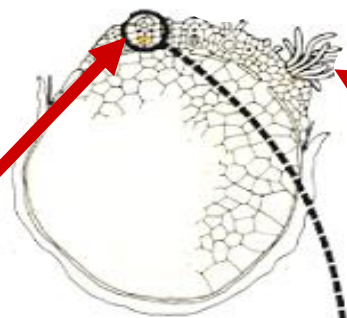
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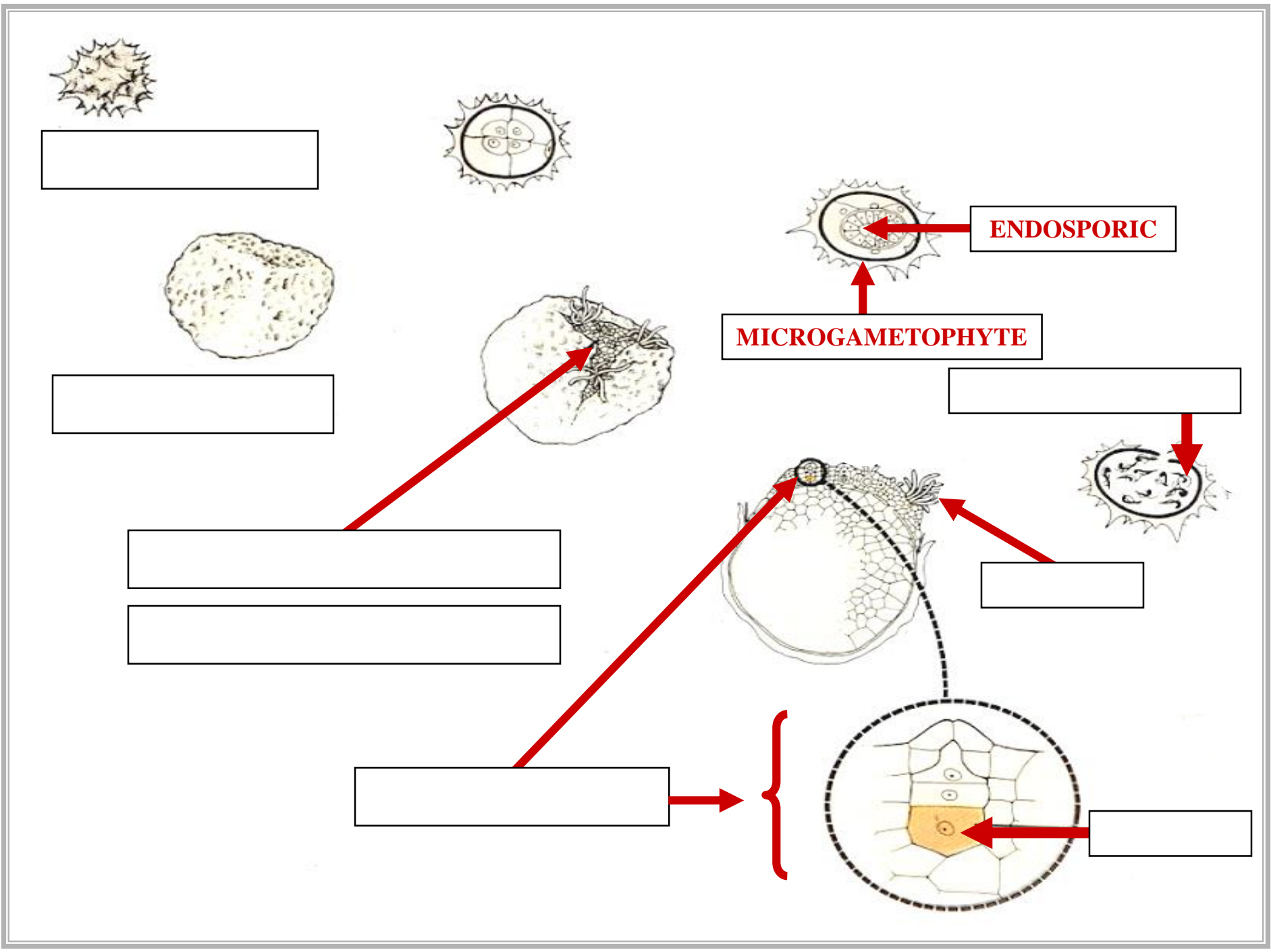
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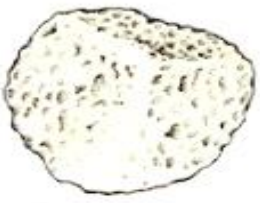
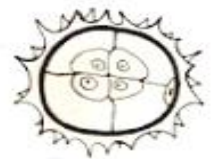


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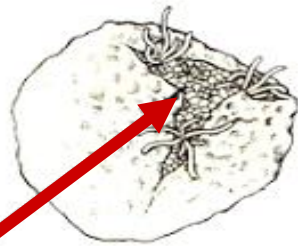




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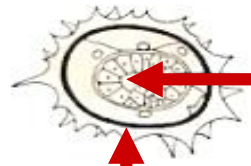
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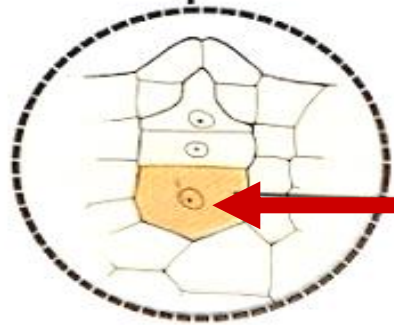
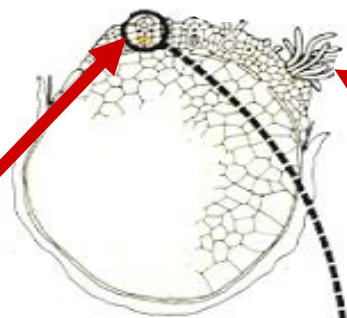
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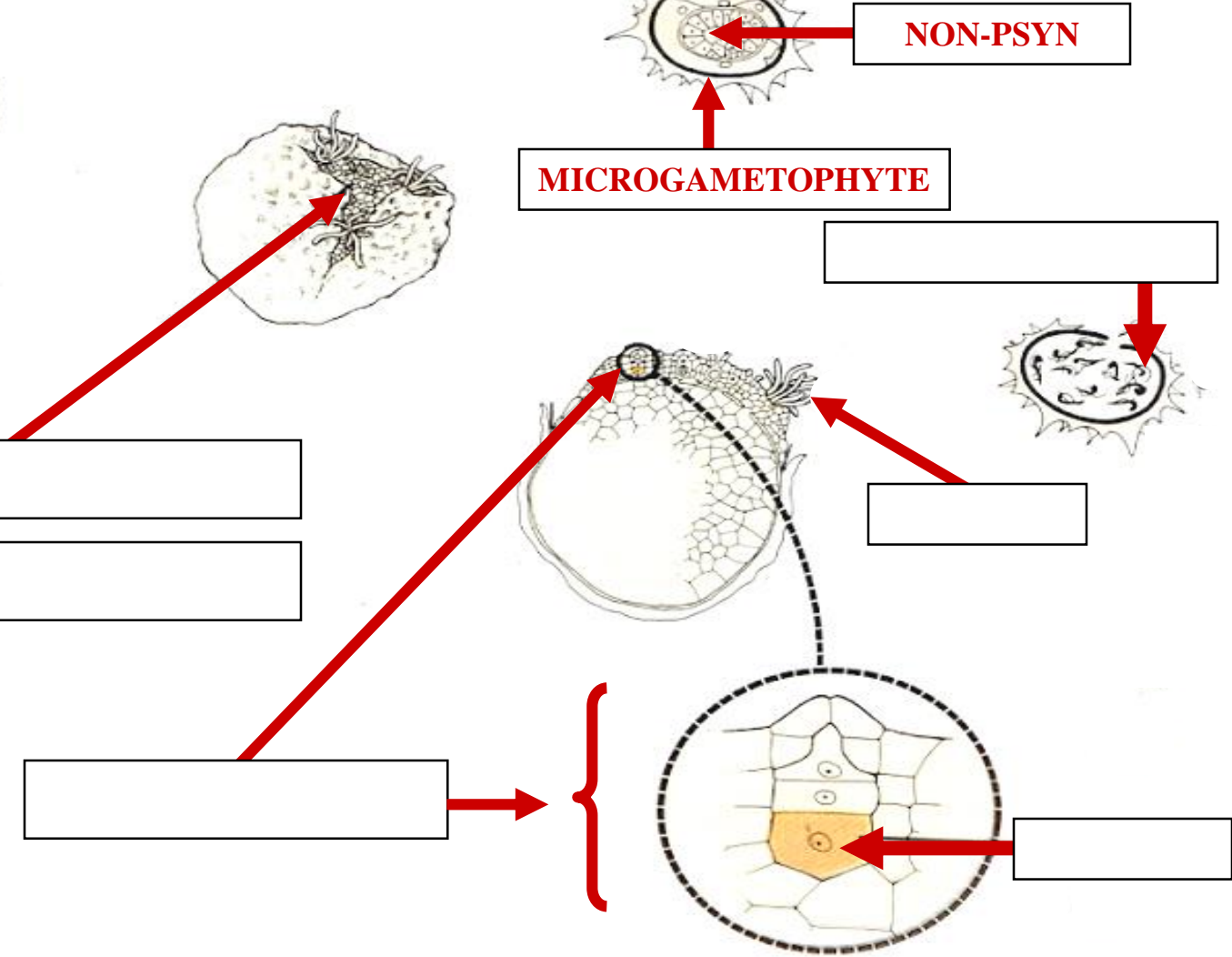
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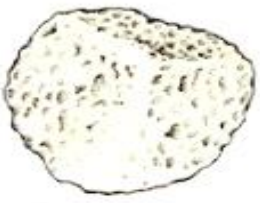


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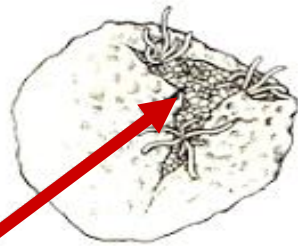




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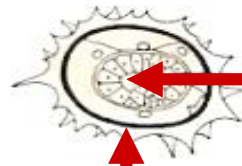
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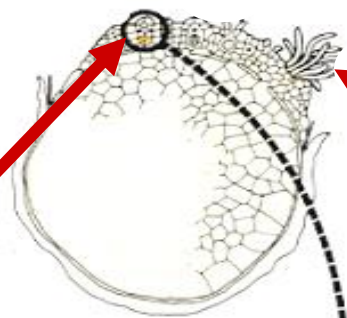
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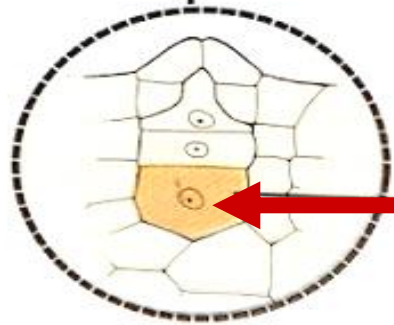
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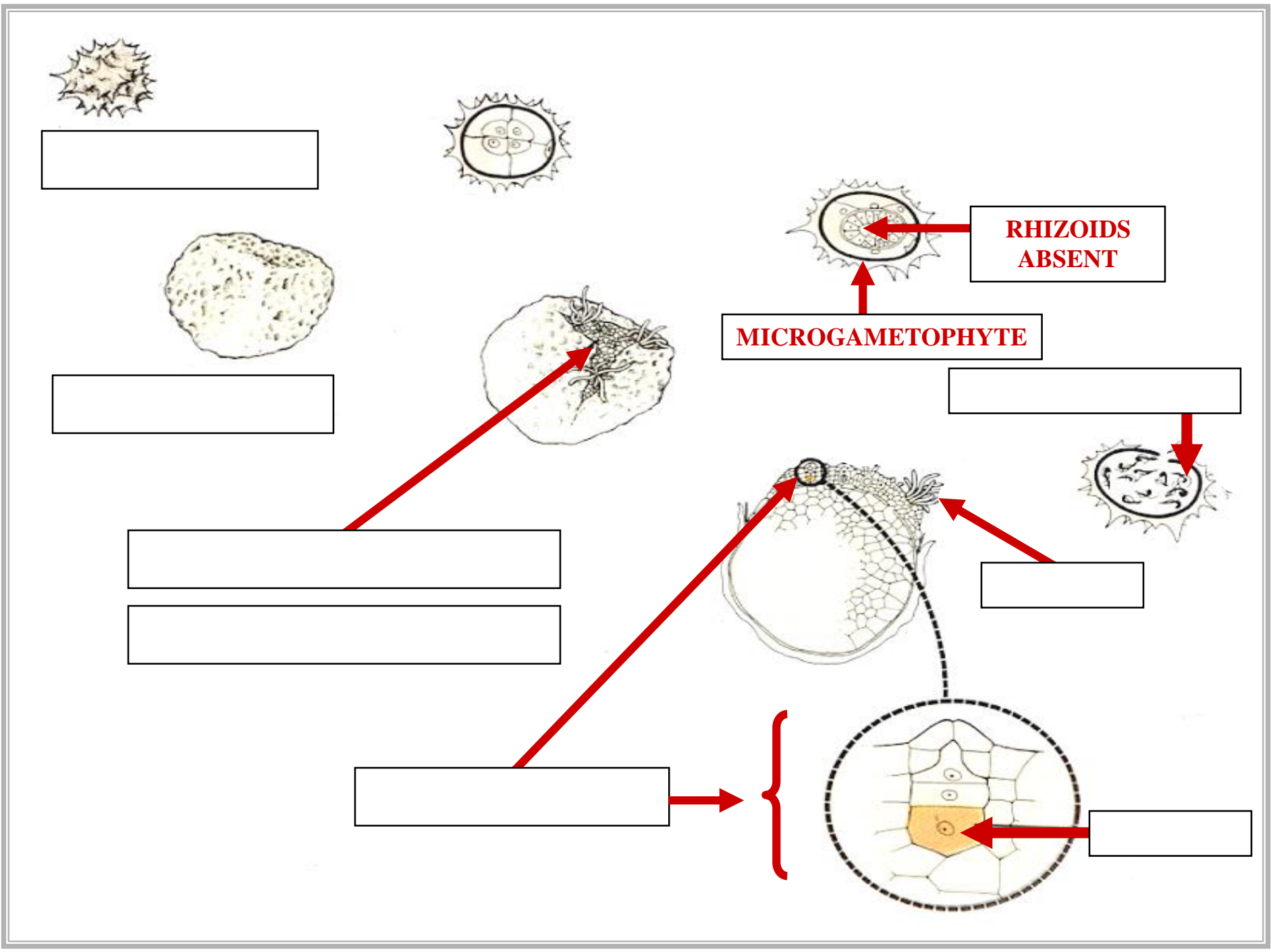
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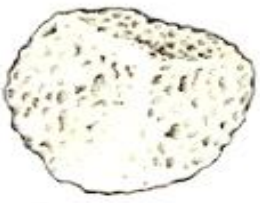
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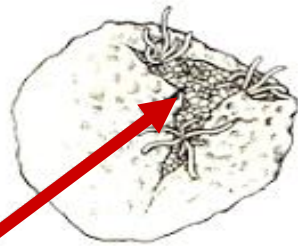




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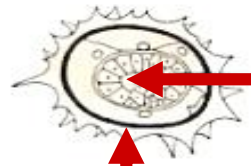
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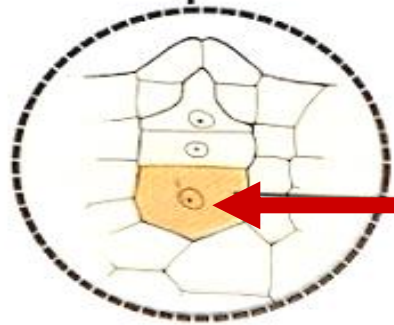
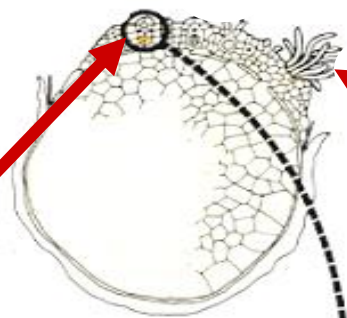
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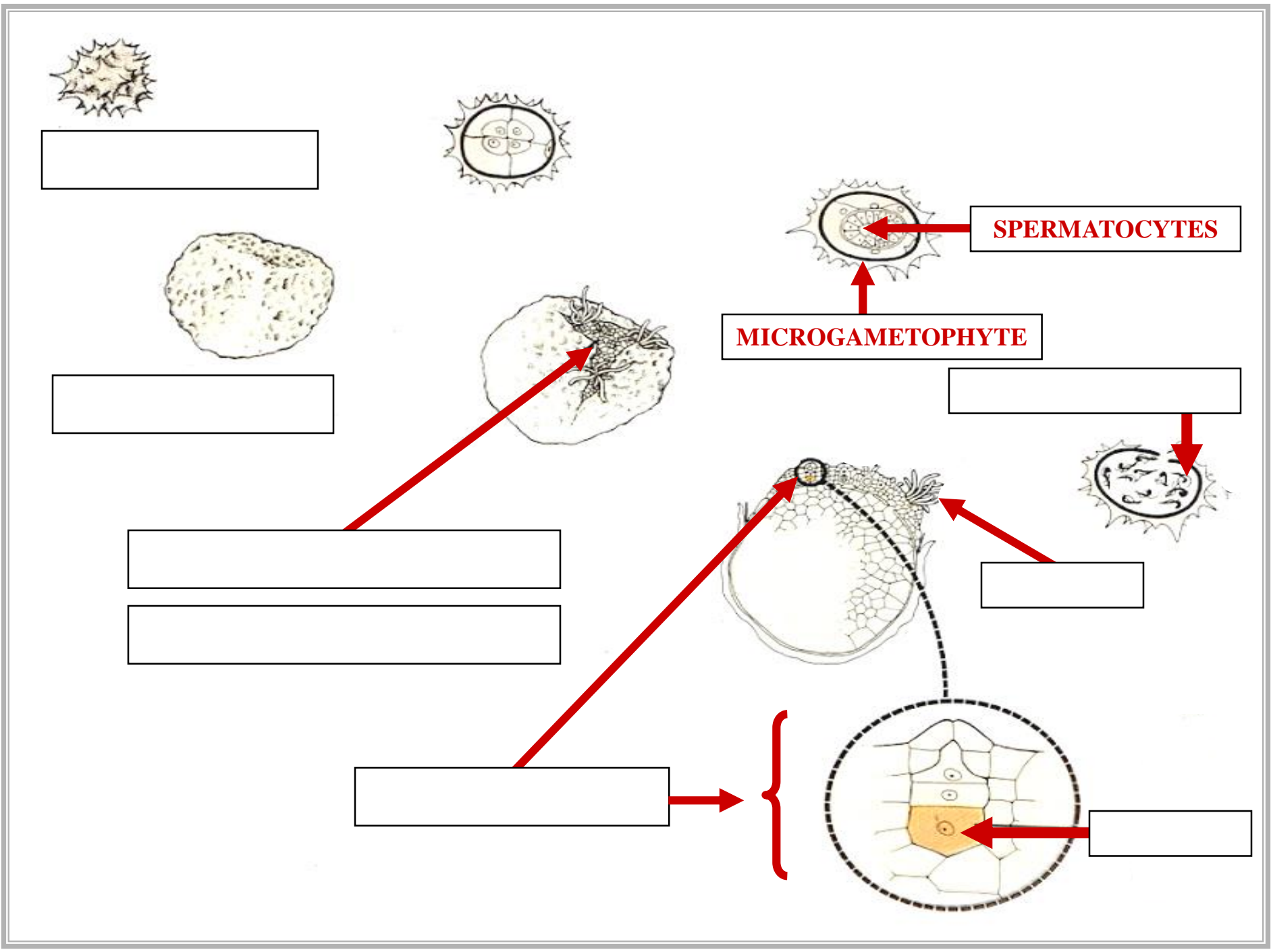
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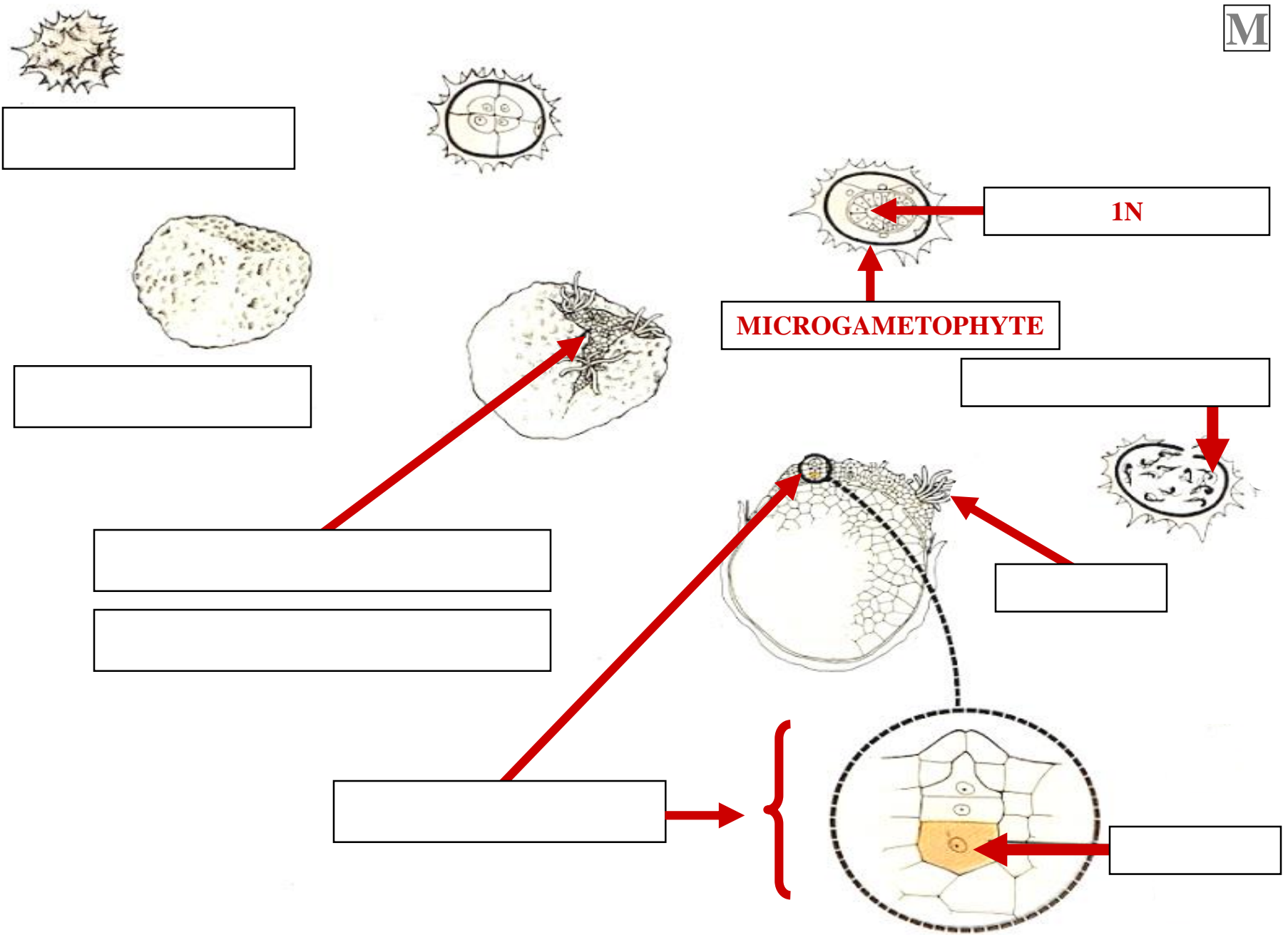


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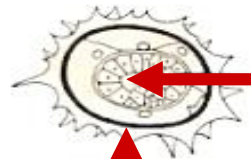
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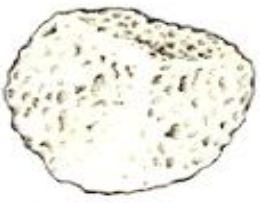




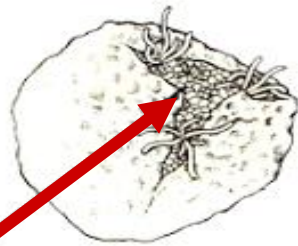
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MITOSIS



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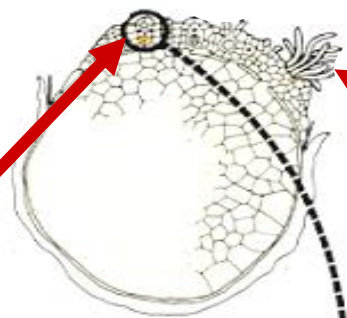


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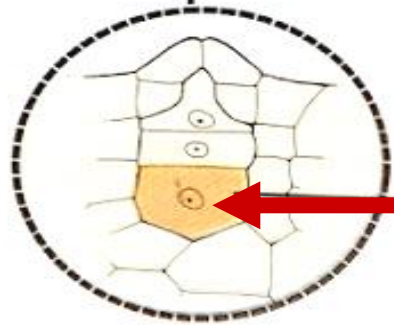
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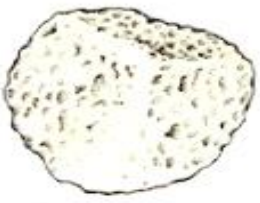
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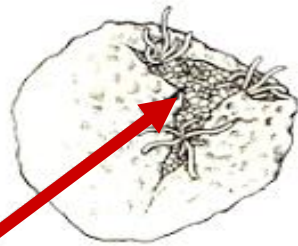
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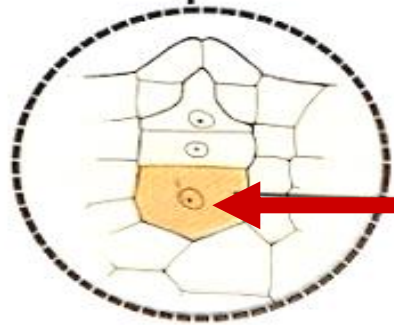
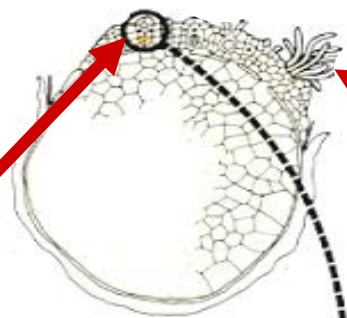
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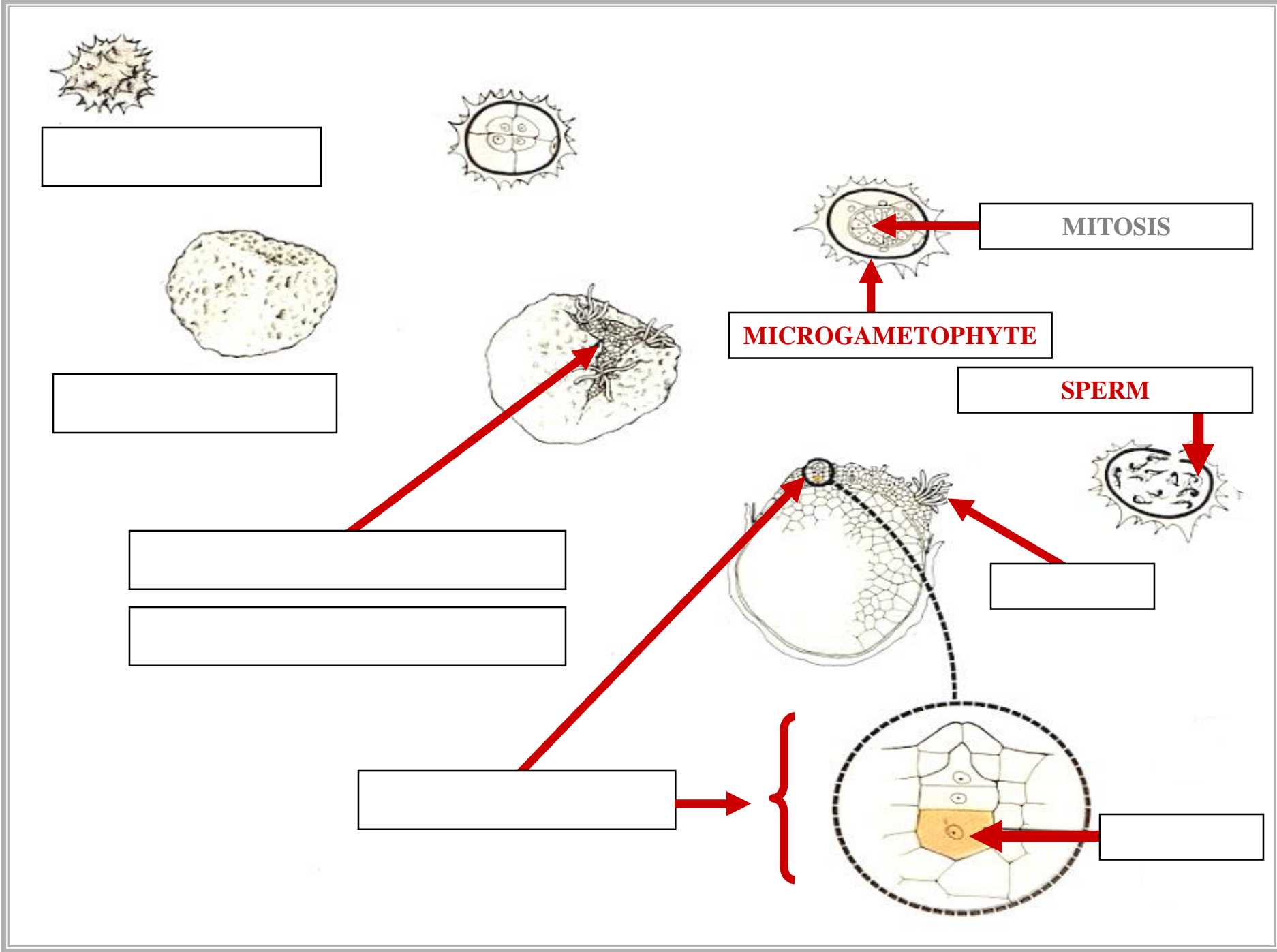
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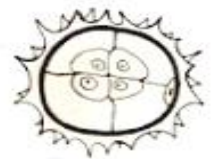
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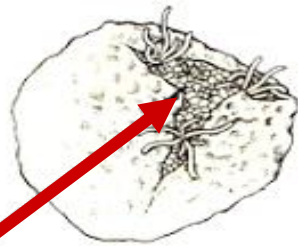




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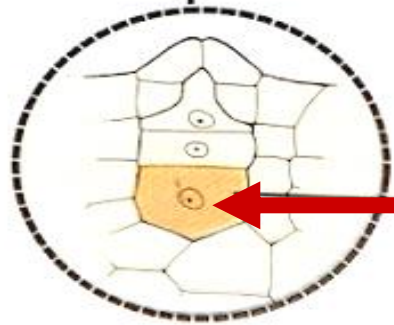
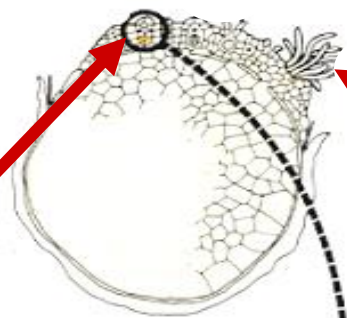
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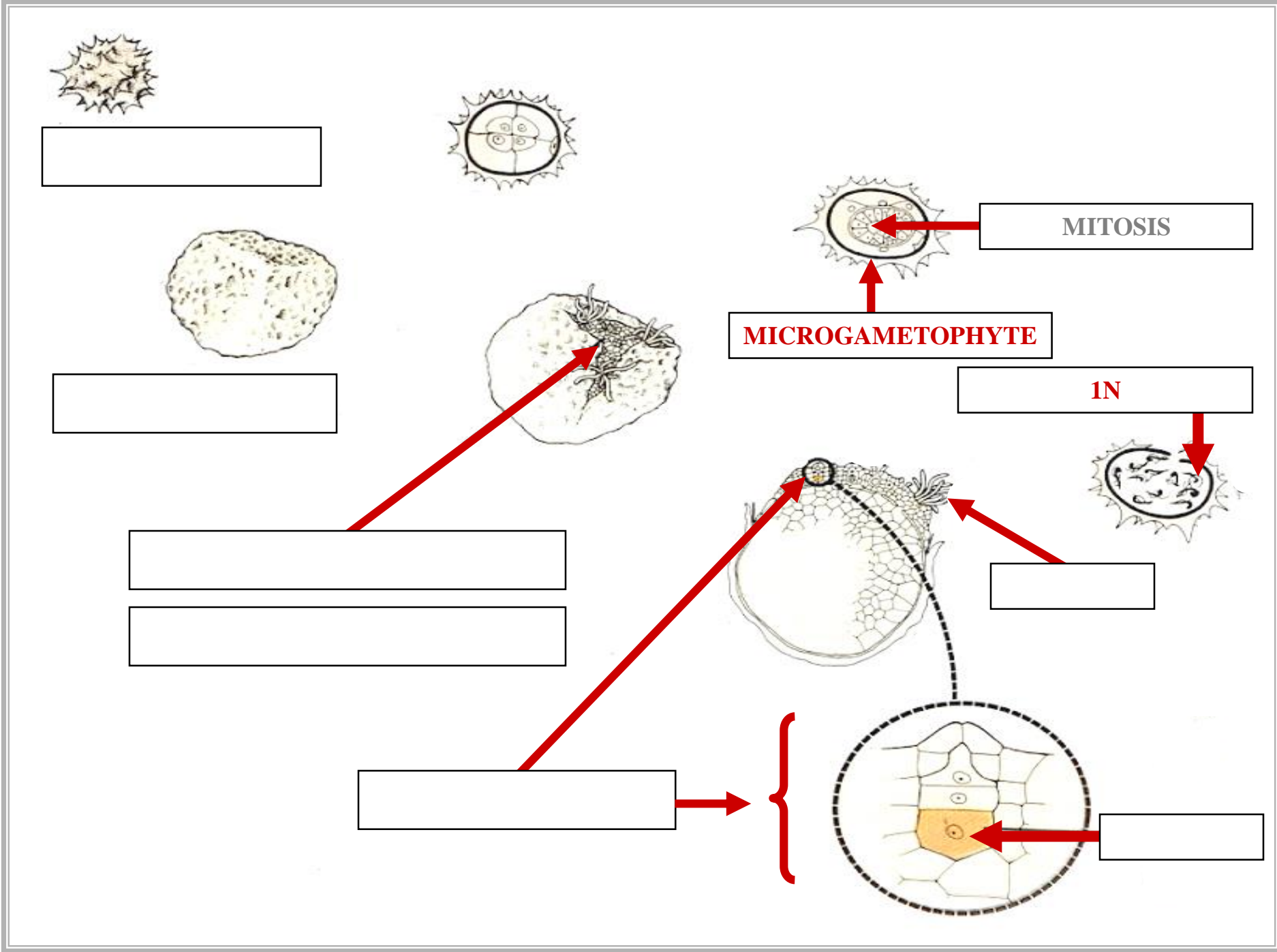
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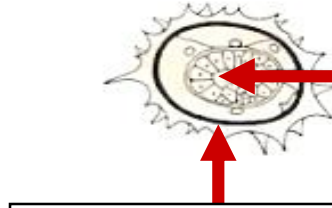
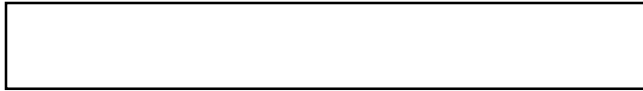
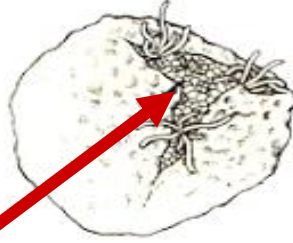
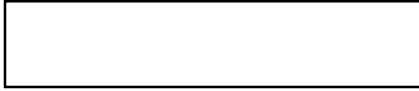
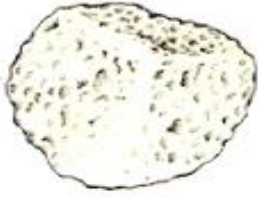


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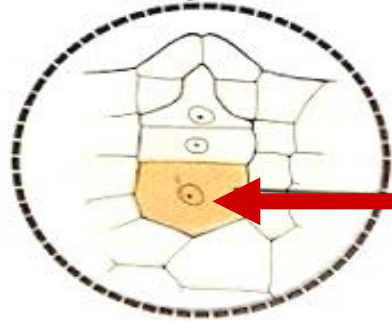
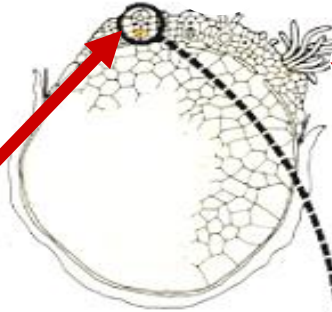


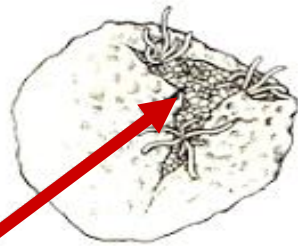
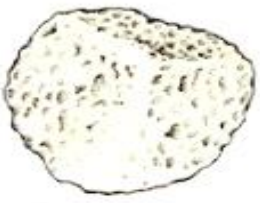


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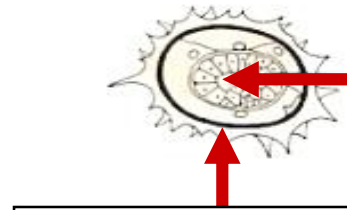
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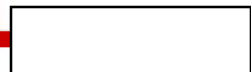
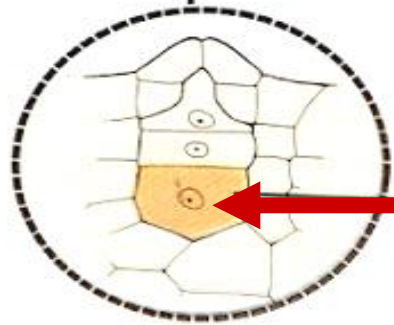
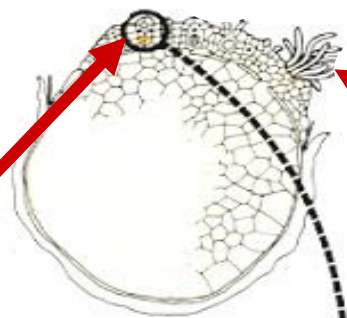


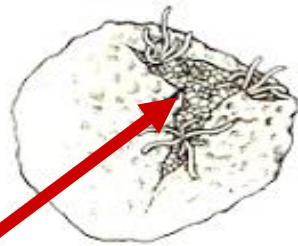
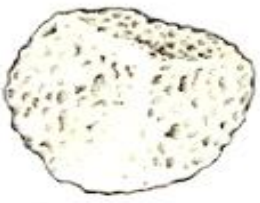
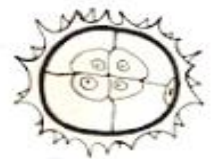
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**MICROGAMETOPHYTE**

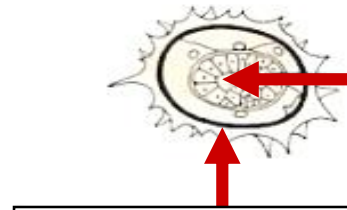
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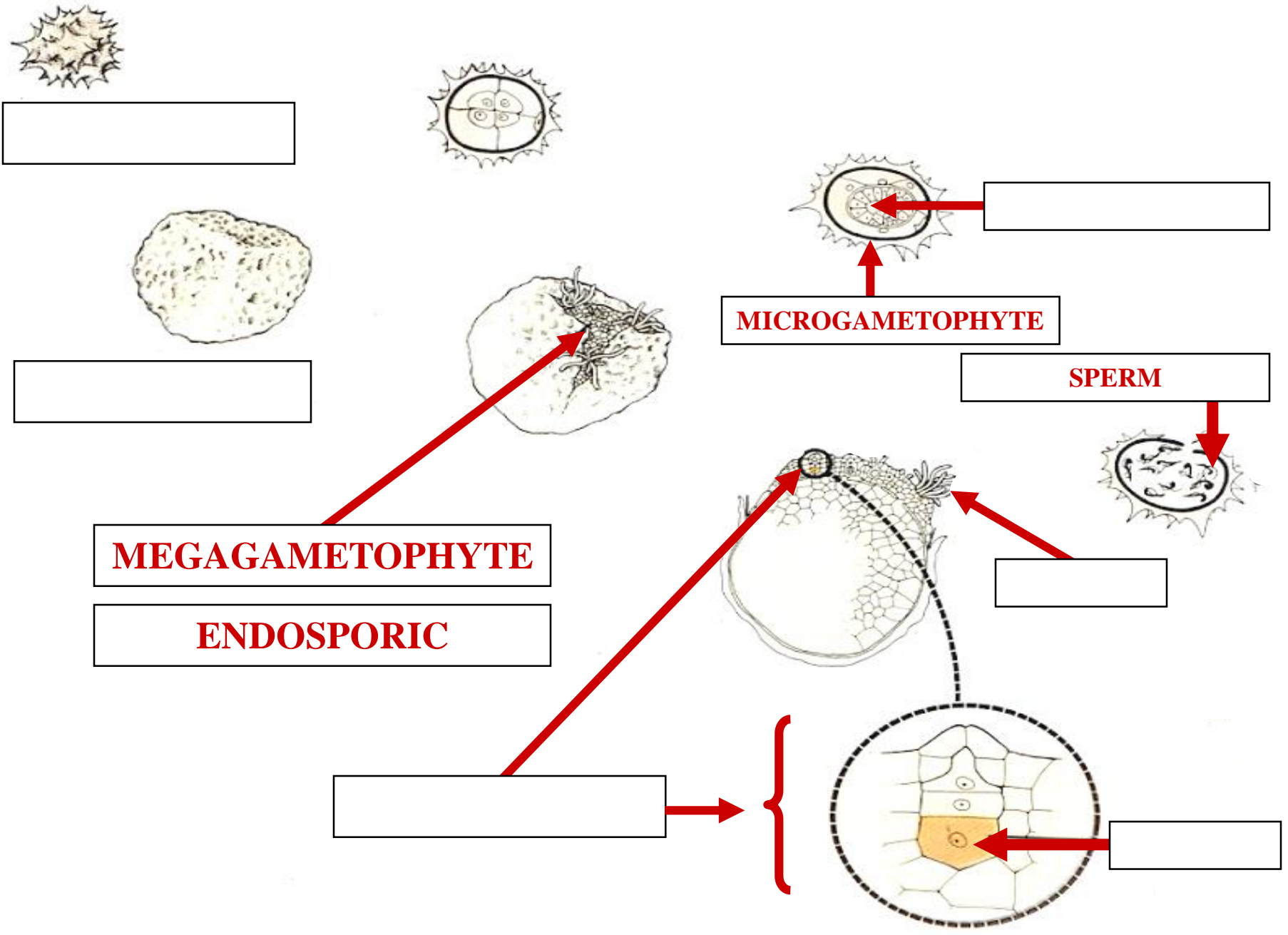
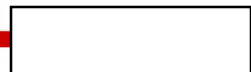
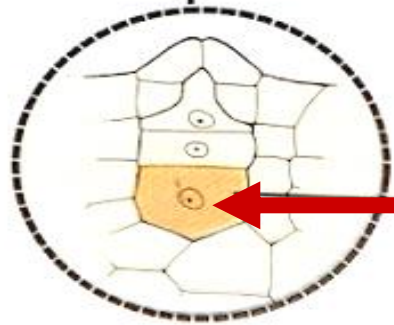
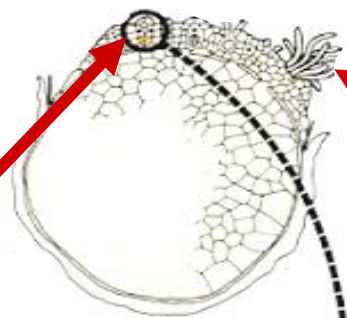
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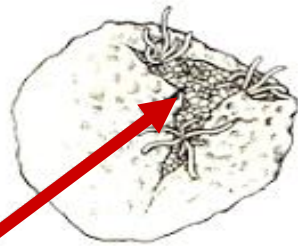
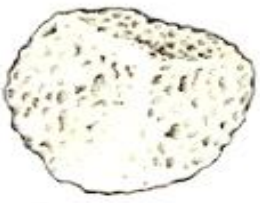


**MICROGAMETOPHYTE**



**SPERM**



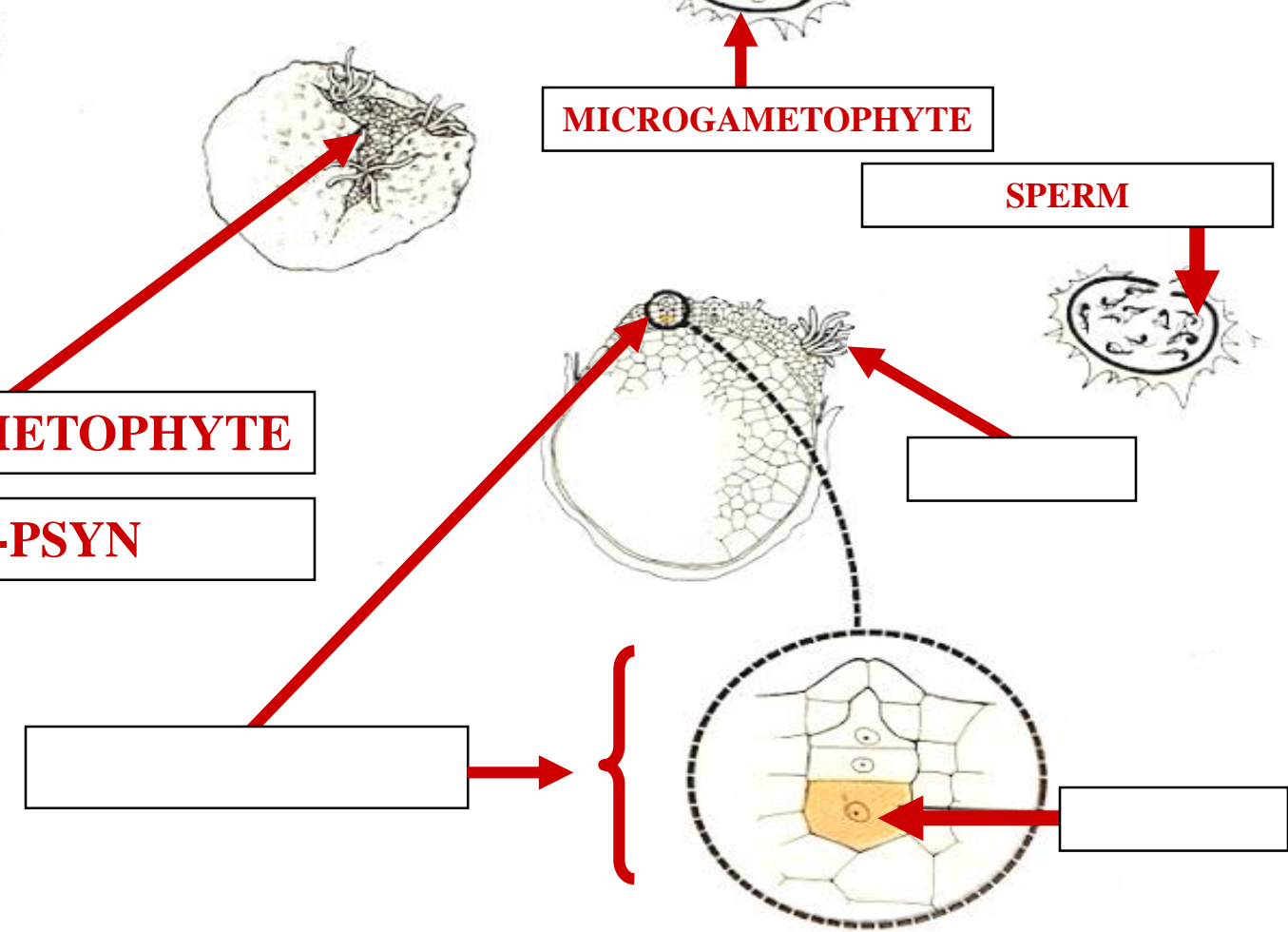
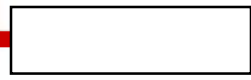
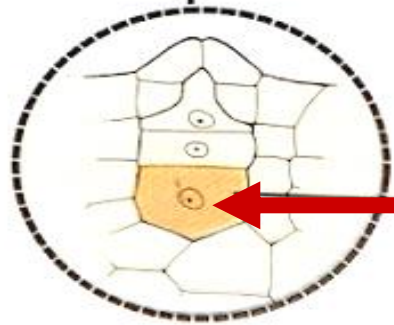
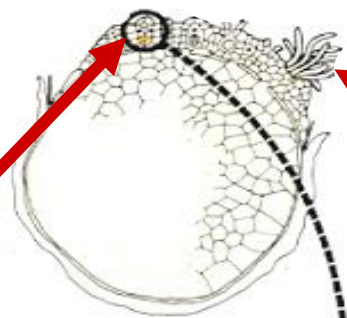
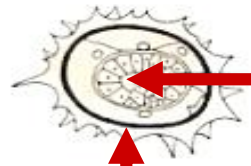


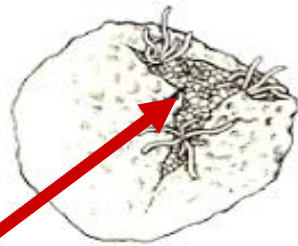
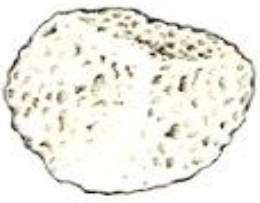
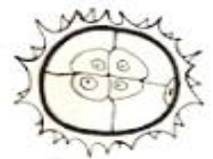
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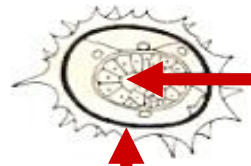
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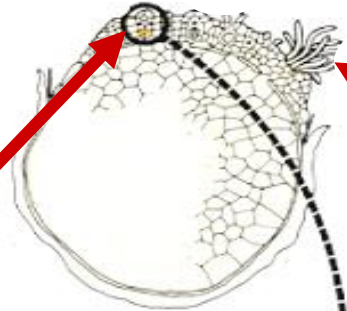
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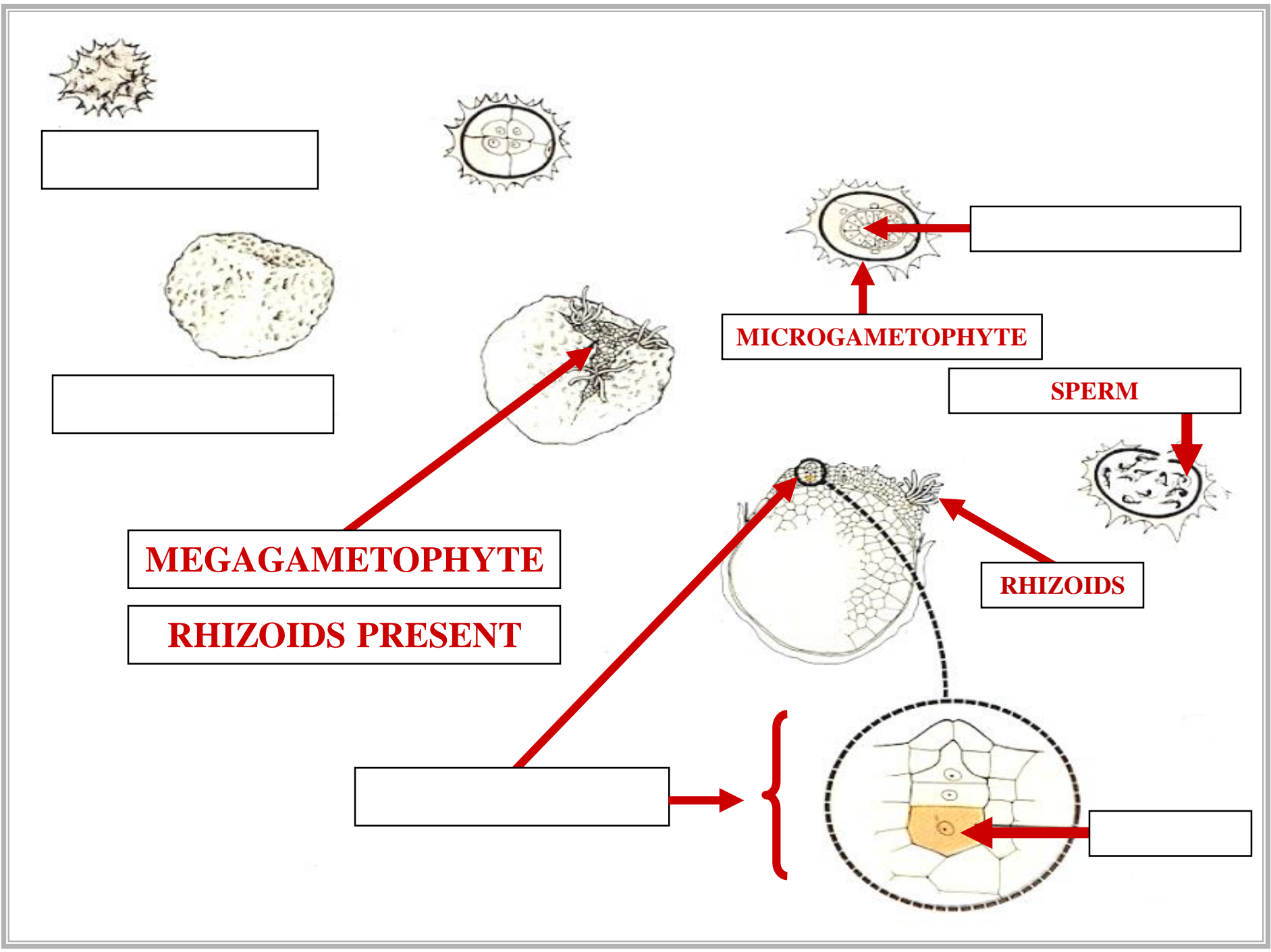
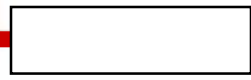
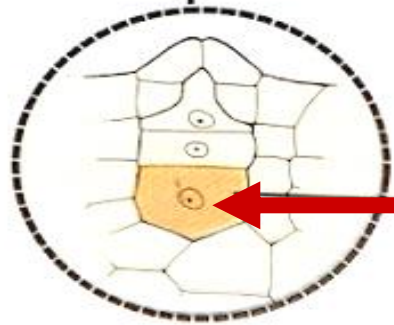


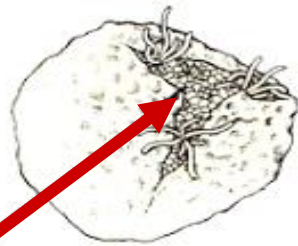
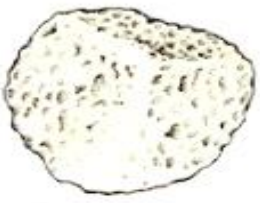
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**RHIZOIDS**





**MEGAGAMETOPHYTE**

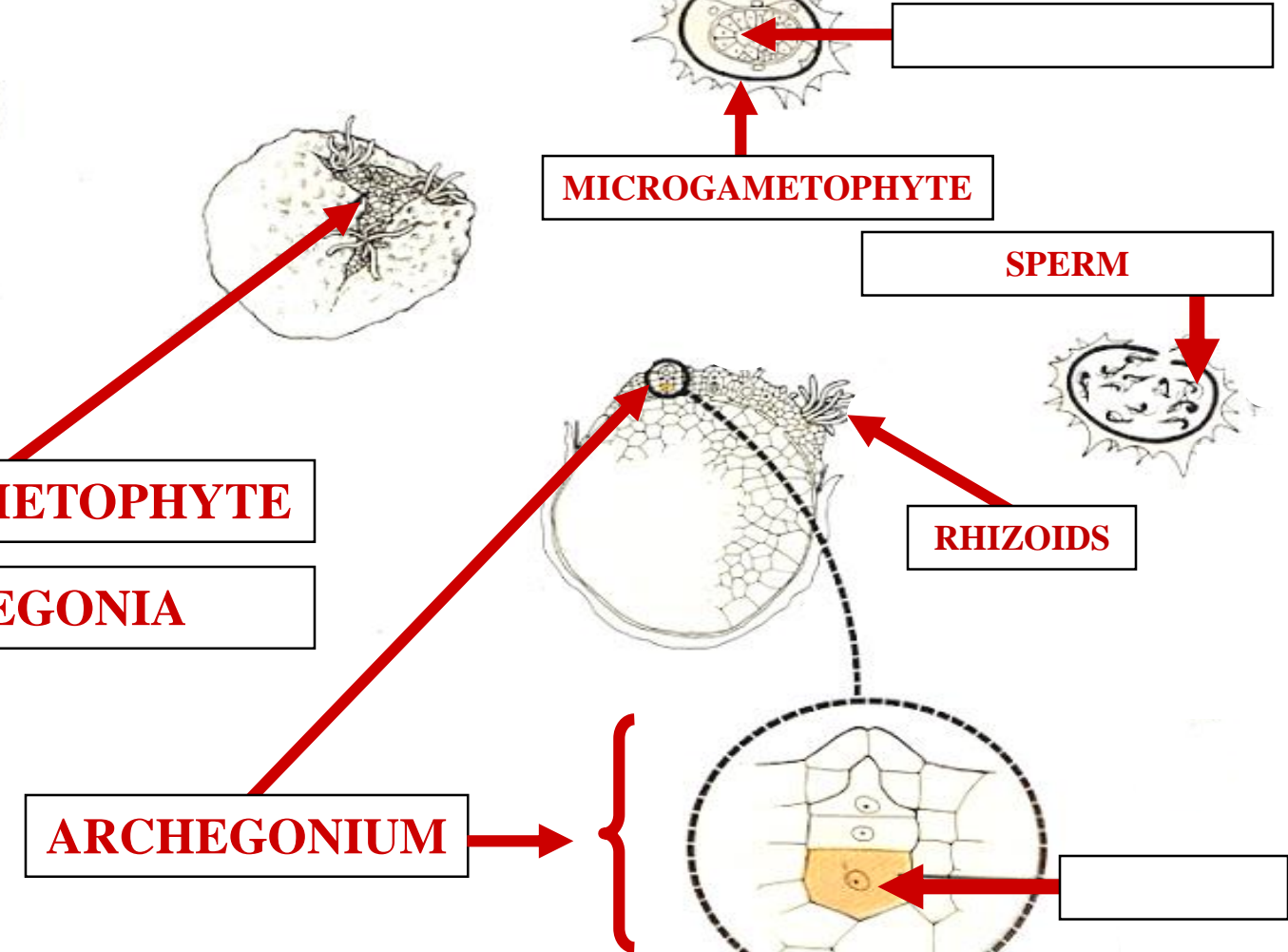
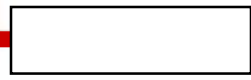
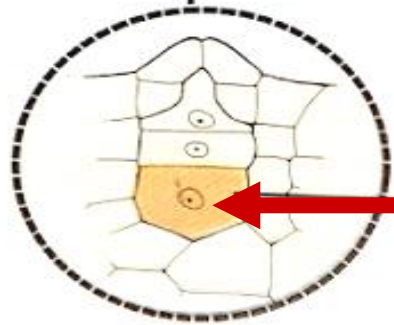
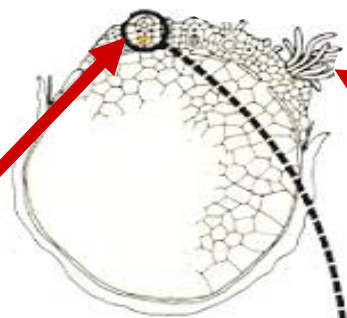
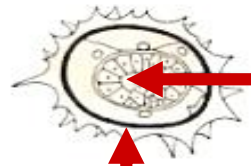
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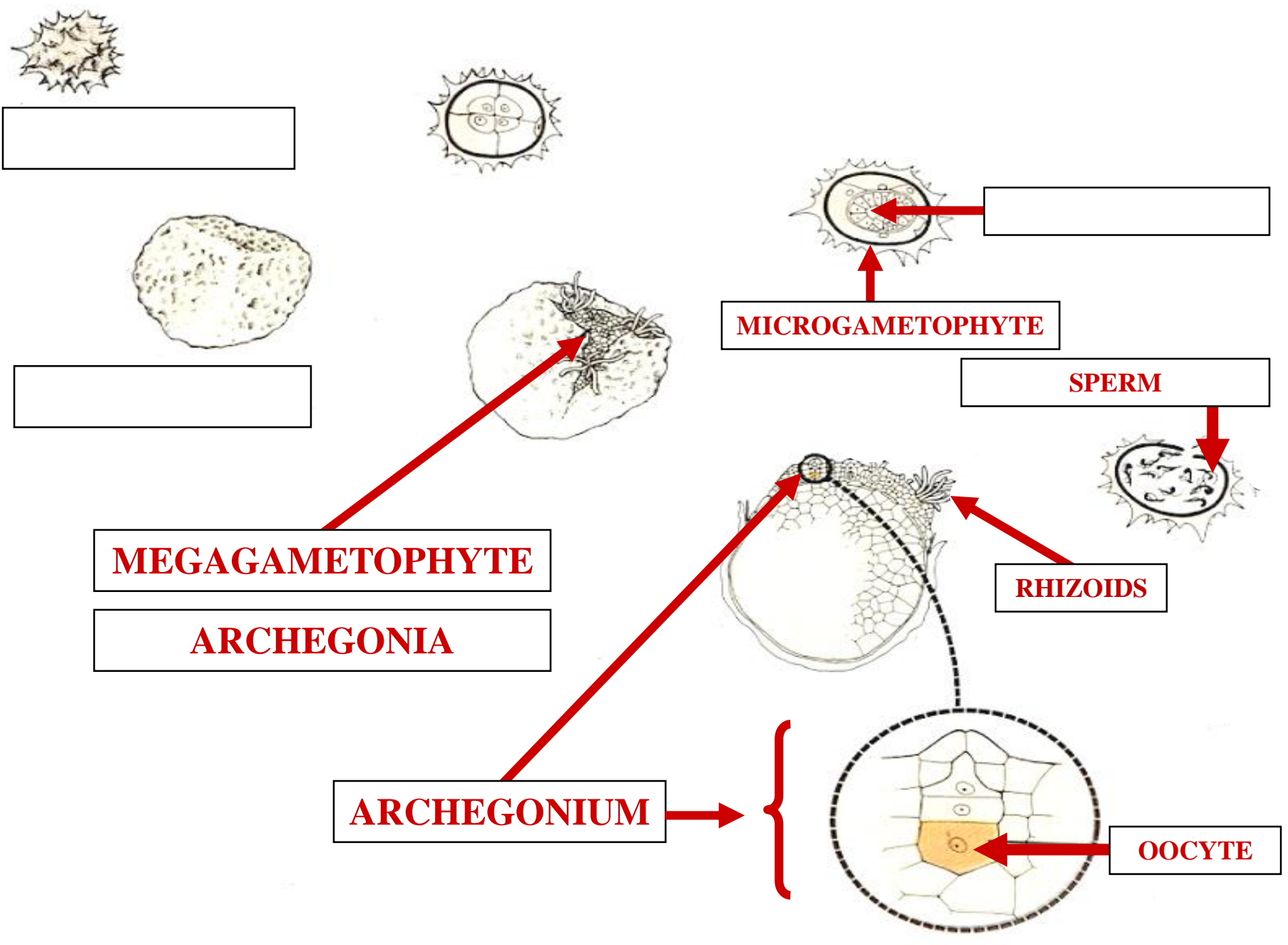
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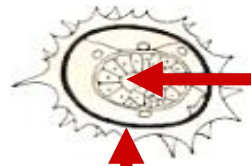
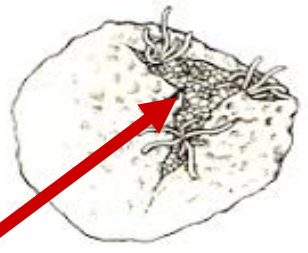
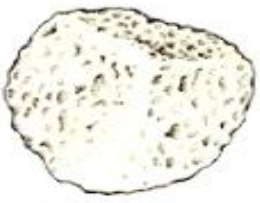
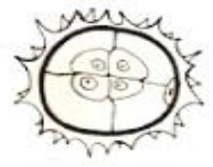
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**RHIZOIDS**









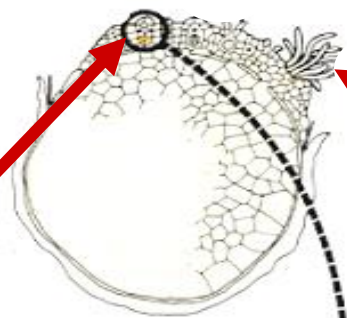
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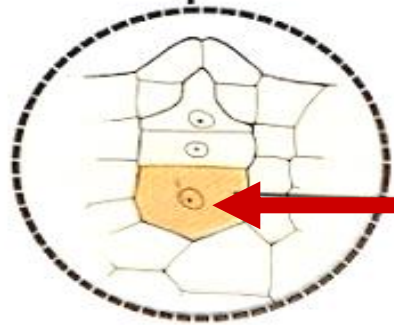
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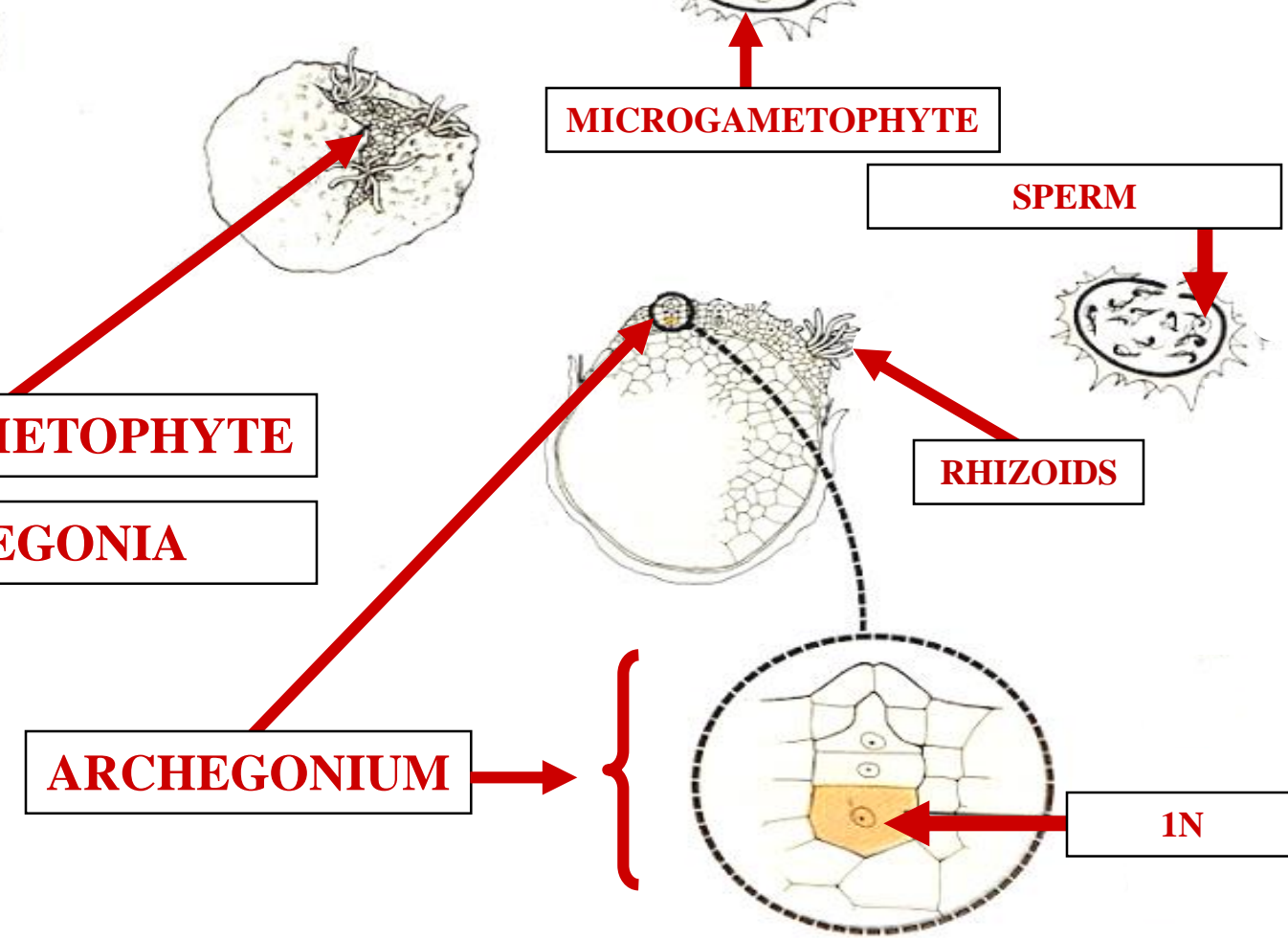


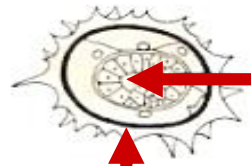
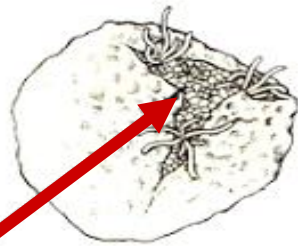
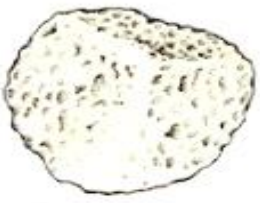
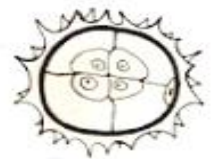
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**1N**



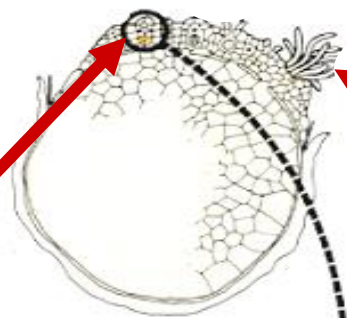


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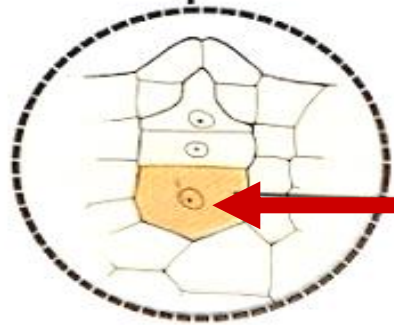
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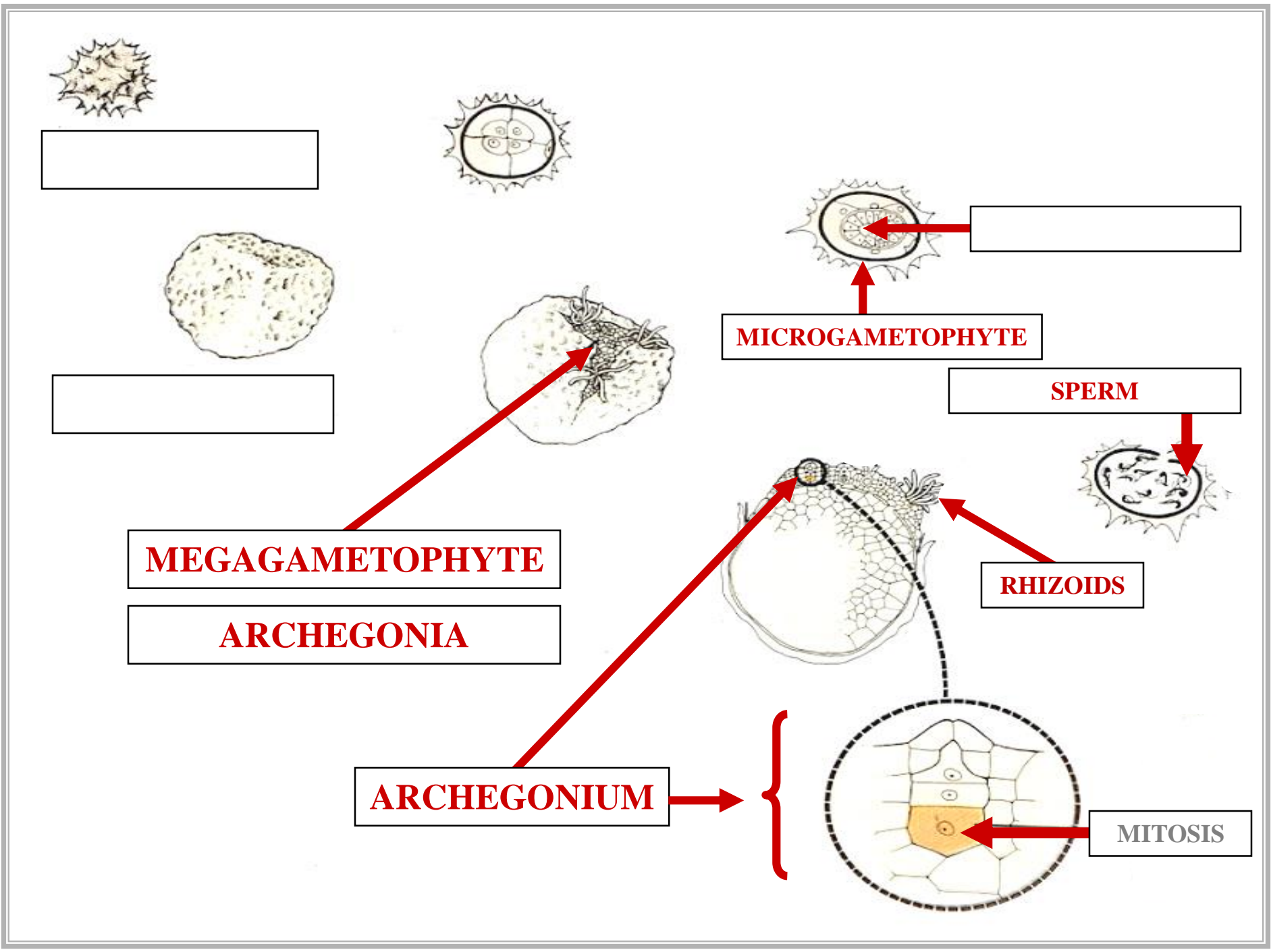


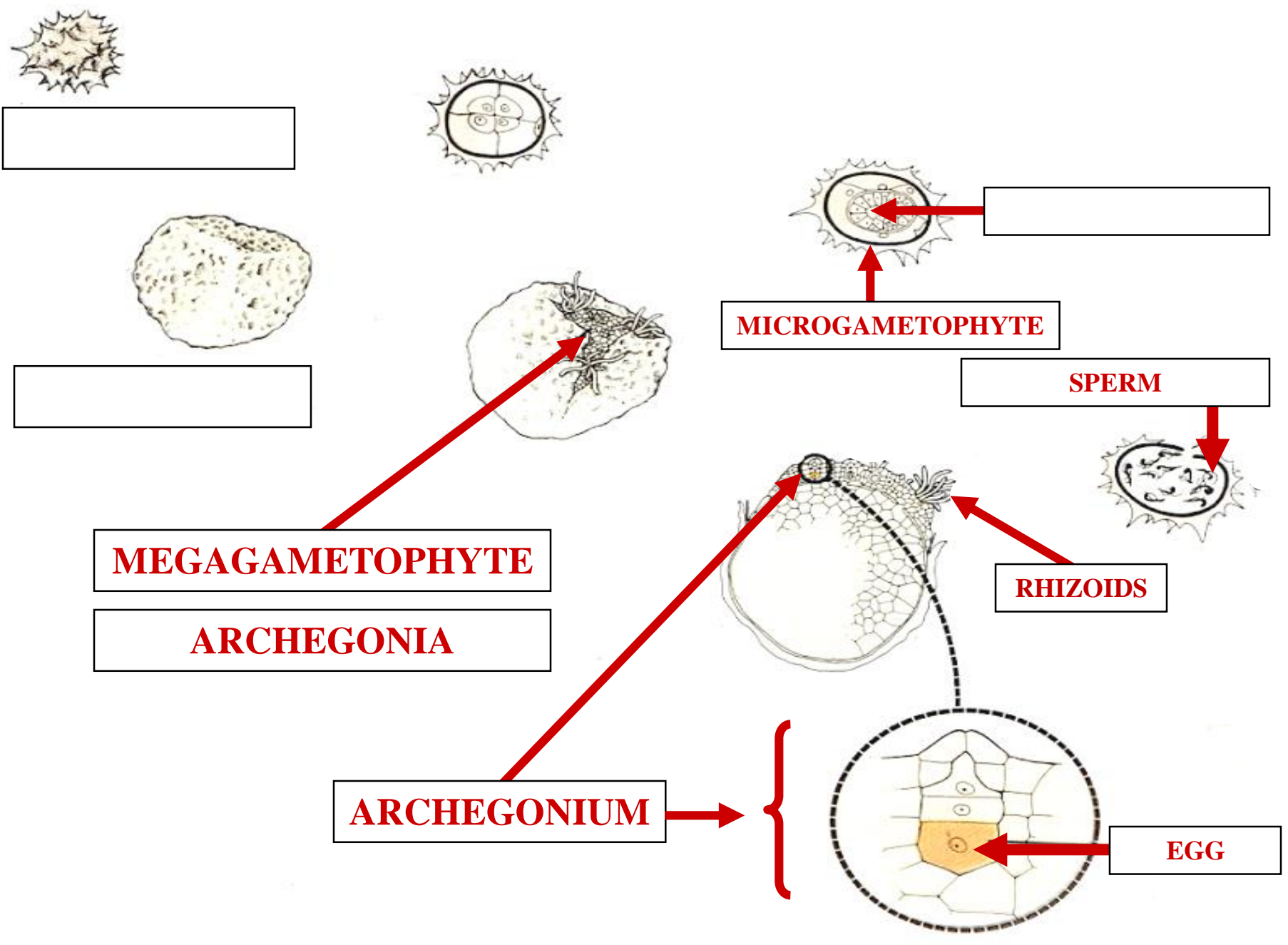
**RHIZOIDS**

**ARCHEGONIUM**



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**MEGAGAMETOPHYTE**

**ARCHEGONIA**

**MICROGAMETOPHYTE**

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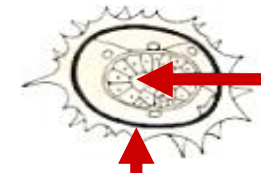
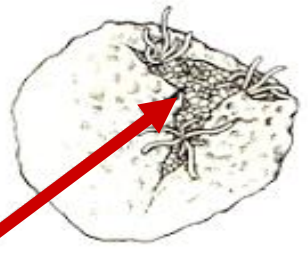
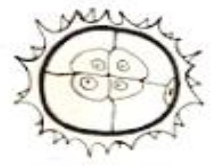
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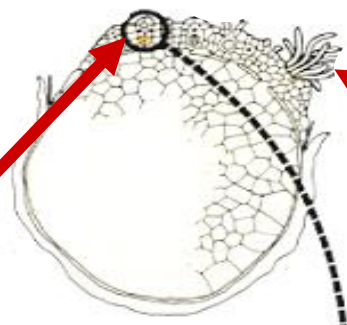


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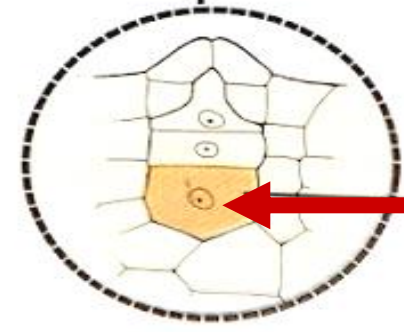
**MEGAGAMETOPHYTE**

**ARCHEGONIA**



**RHIZOIDS**

**ARCHEGONIUM**



**1N**

