

RAFFLESIA

MAGNOLIOPHYTA

CLASSES

**MAGNOLIOPHYTA
CLASSES**

MAGNOLIOPSIDA

**MAGNOLIOPHYTA
CLASSES**

MAGNOLIOPHYTA

CLASSES



MAGNOLIOPSIDA
LILIOPSIDA

MAGNOLIOPHYTA
CLASSES

MAGNOLIOPSIDA

COMMON NAME



DICOTS





EUDICOTS





SPECIES DIVERSITY



~170,000 SPECIES

EARTH

LILIOPSIDA

COMMON NAME



MONOCOTS





SPECIES DIVERSITY



~65,000 SPECIES

EARTH



MAGNOLIOPHYTA

CLASS

CHARACTERS

MAGNOLIOPSIDA CHARACTERS



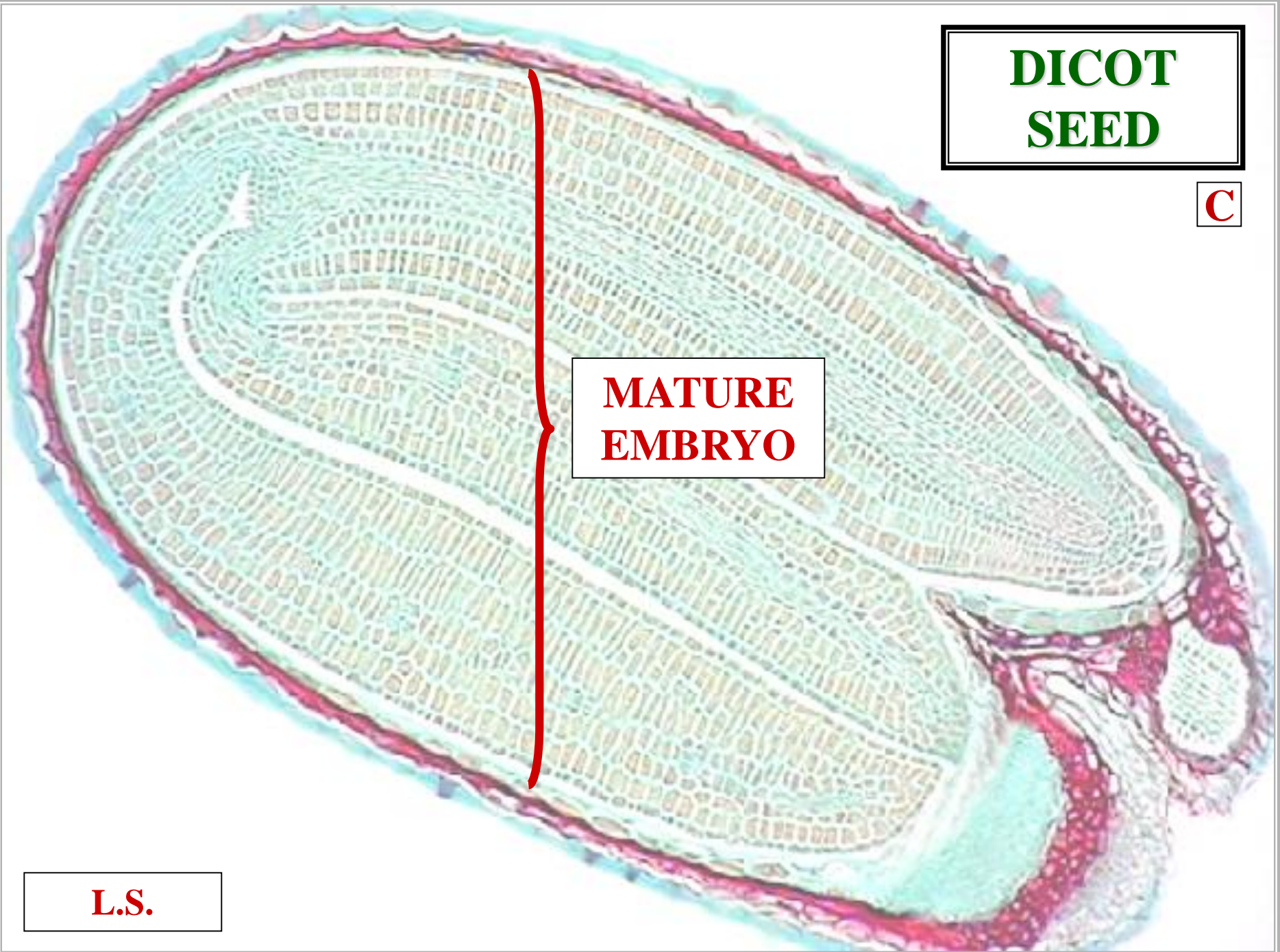
COTYLEDONS

DICOT SEED

C

MATURE
EMBRYO

L.S.



DICOT SEED

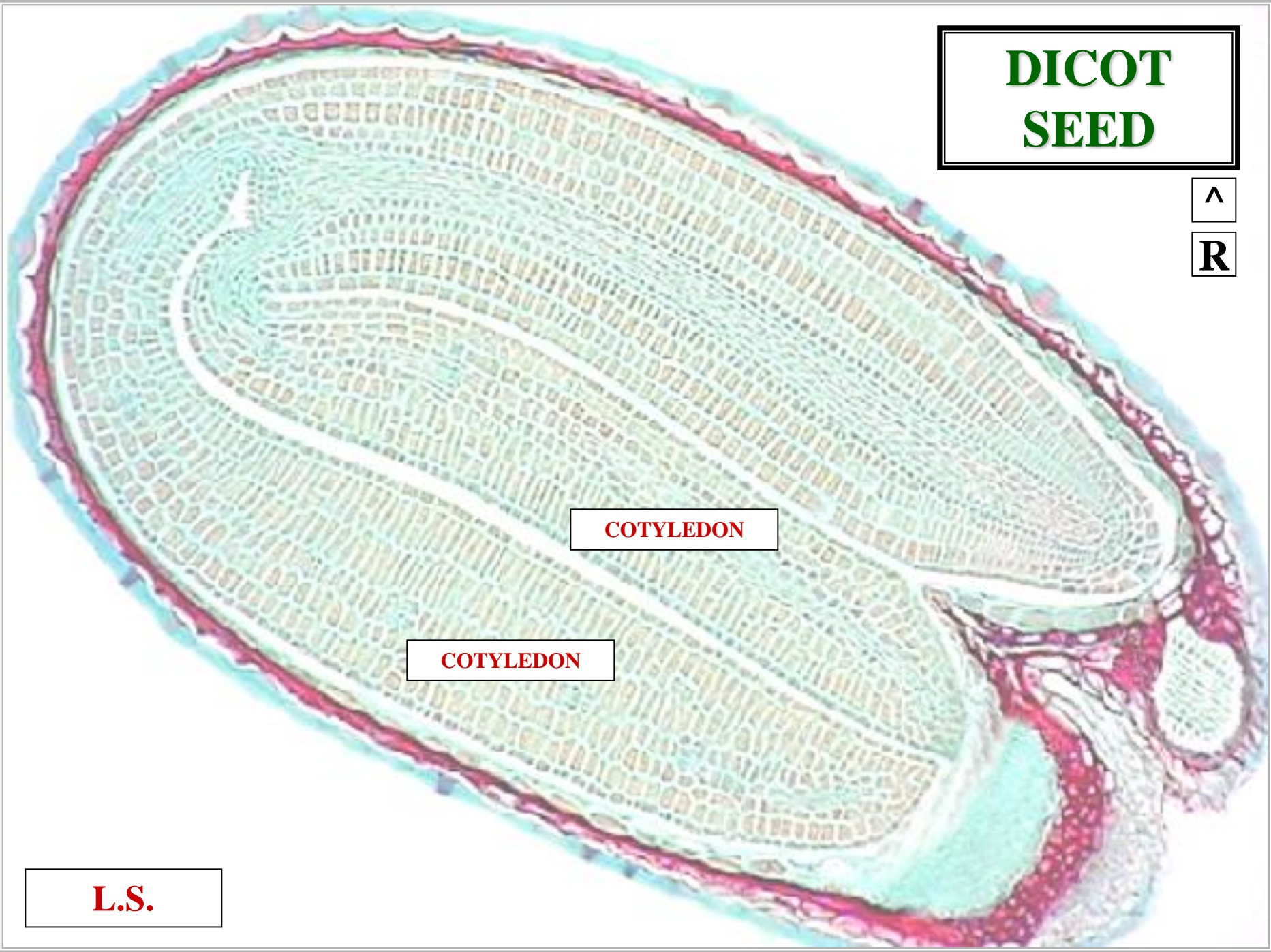
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R

COTYLEDON

COTYLEDON

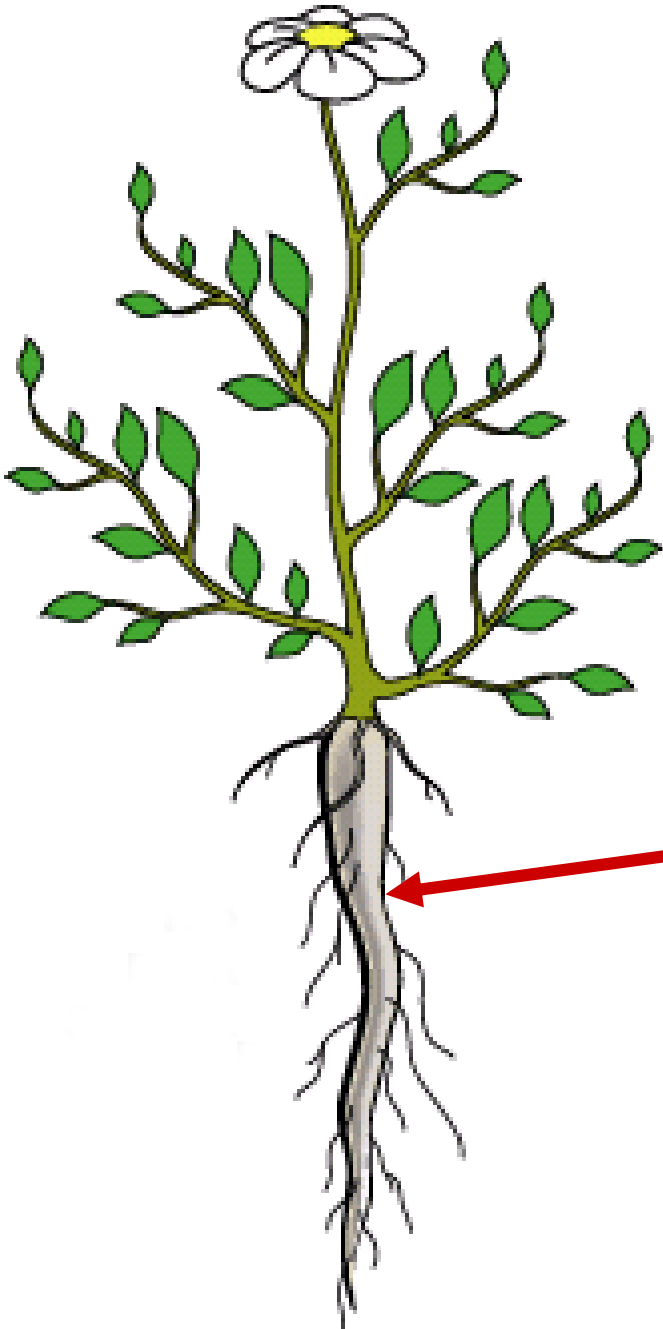
L.S.





ROOT HABIT

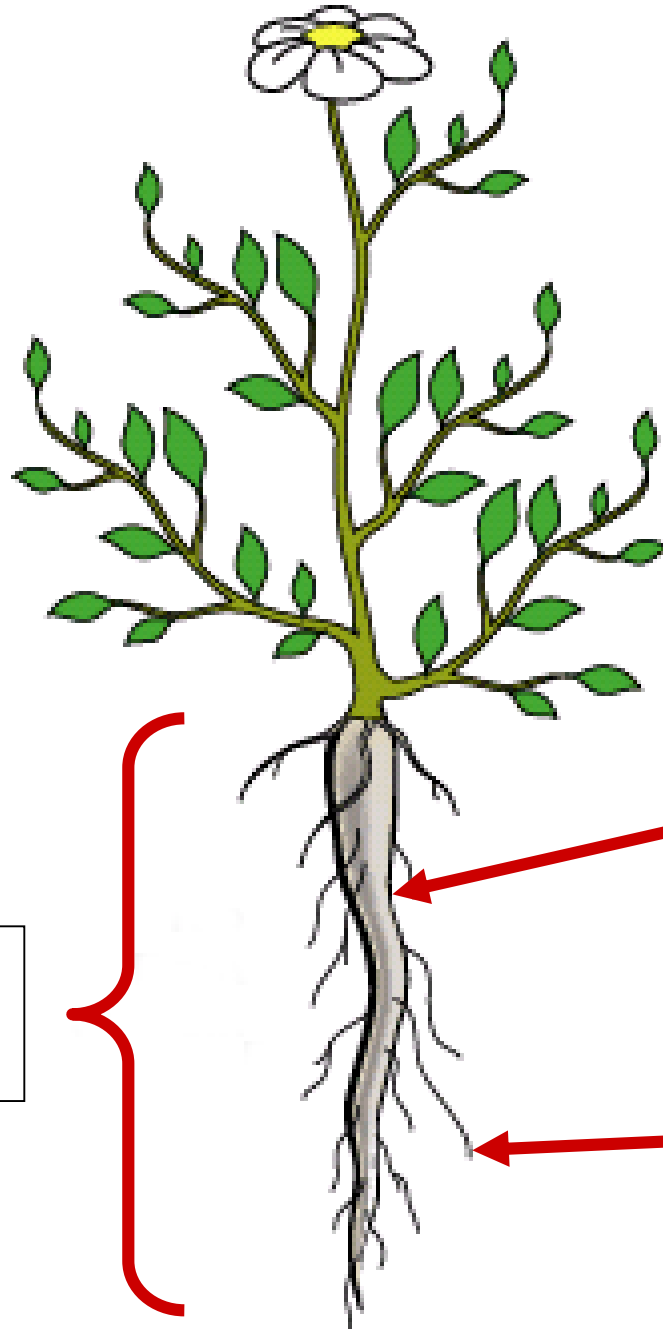
DICOT ROOT



**TAP ROOT
SYSTEM**

DICOT ROOT

**TAP ROOT
SYSTEM**



**PRIMARY
ROOT**

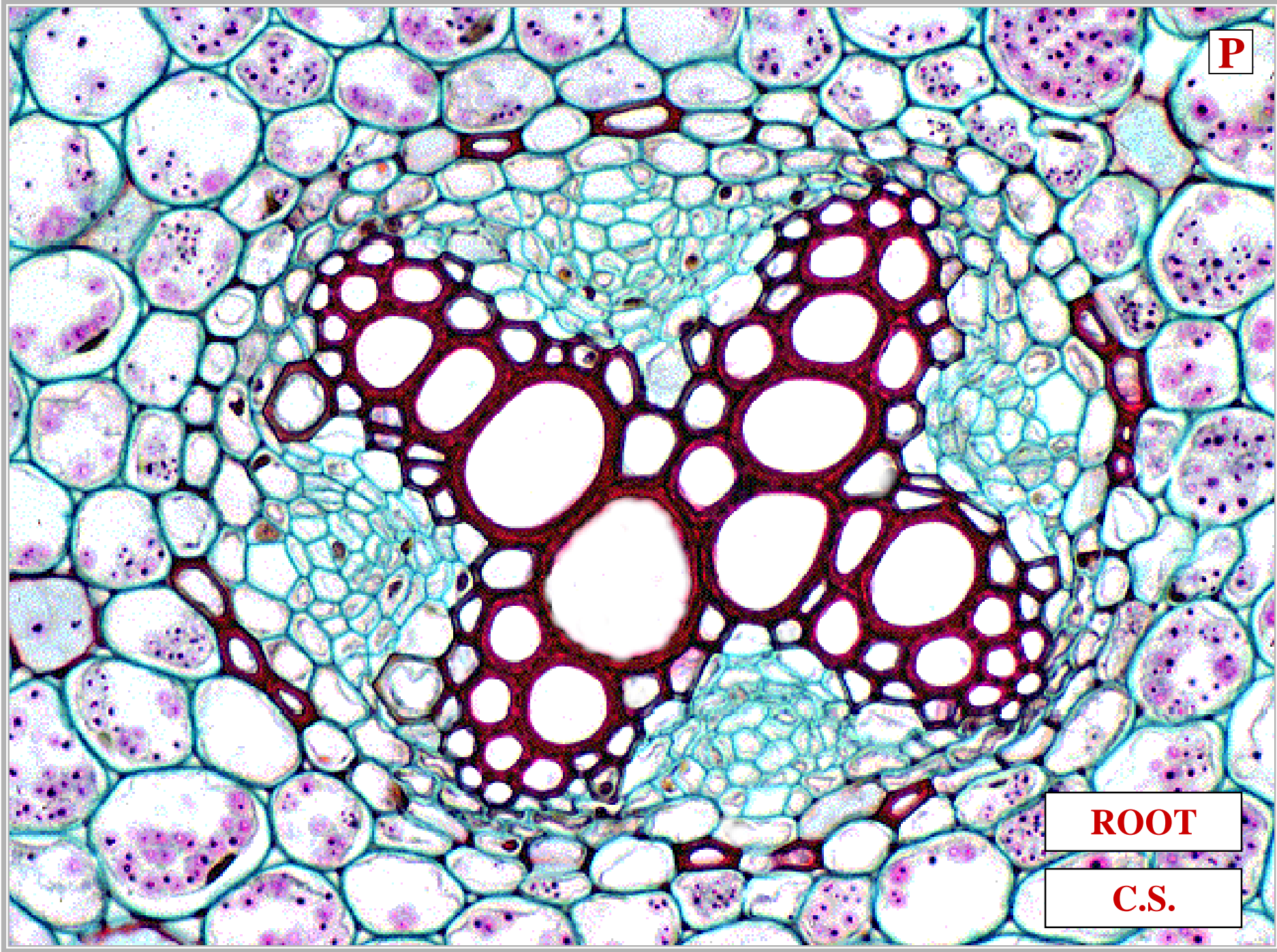
**STOUT
LATERAL
ROOT**

**DEEP SOIL
PENETRATION**



ROOT STELE

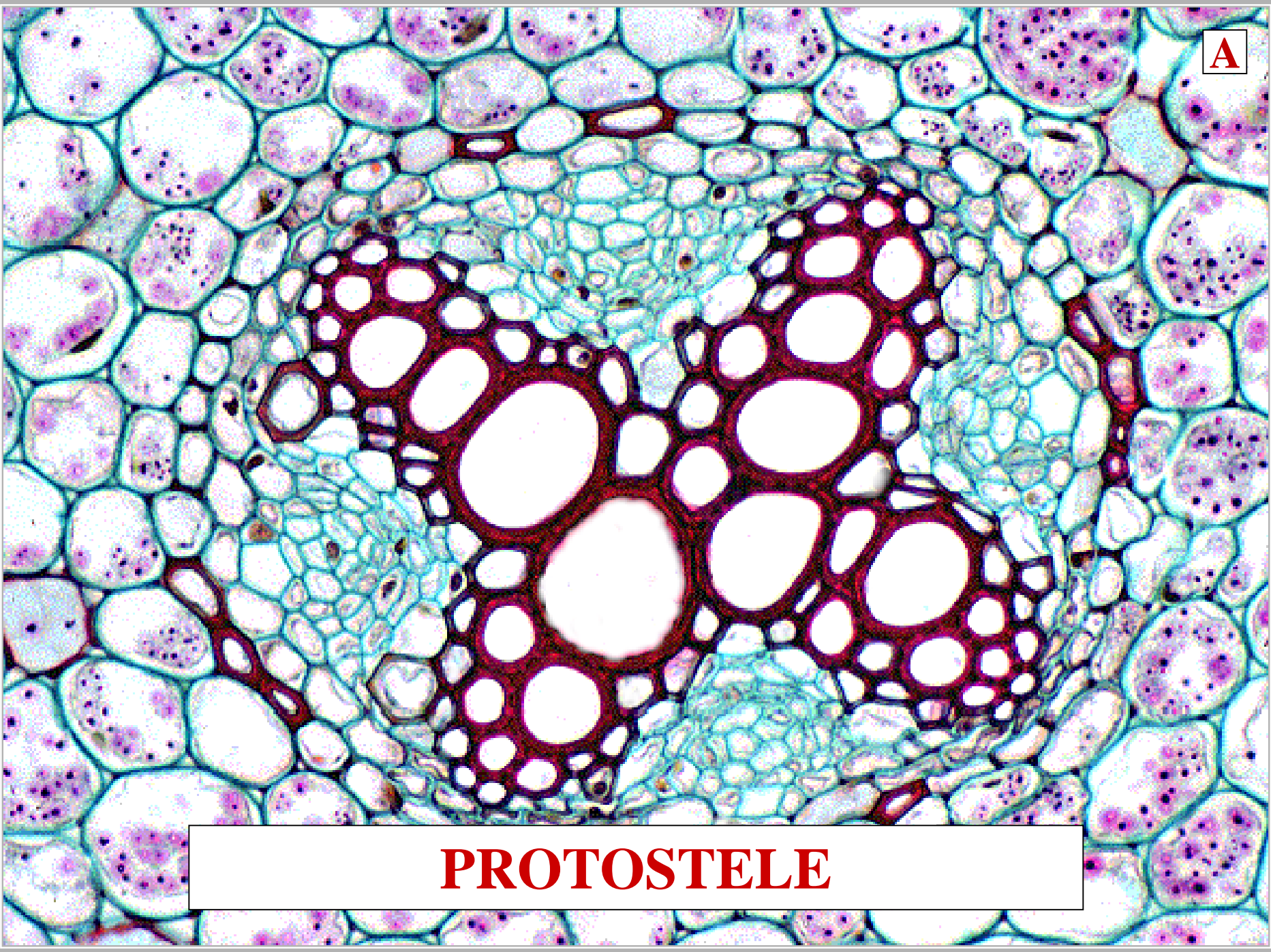
P



ROOT

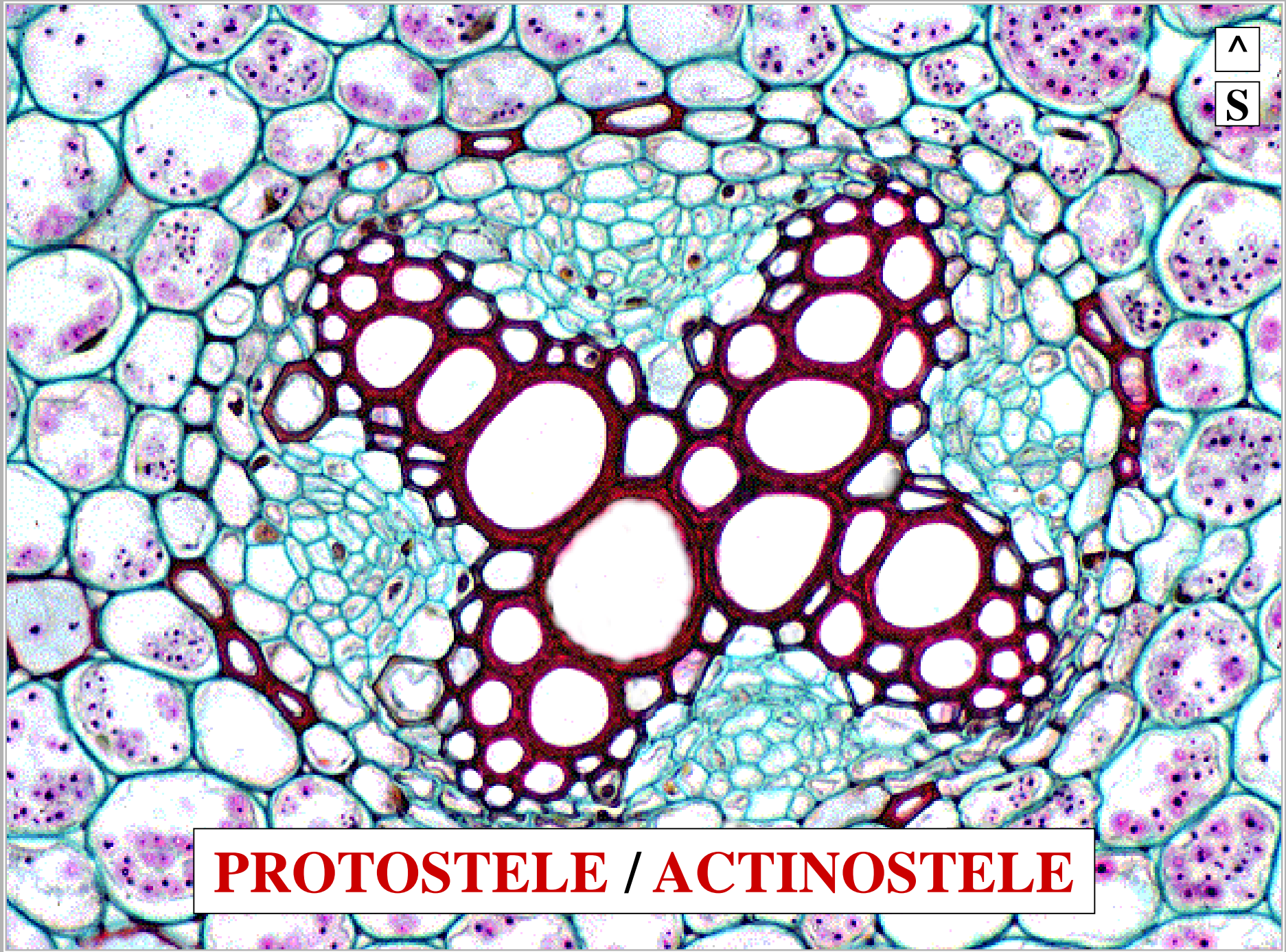
C.S.

A



PROTOSTELE

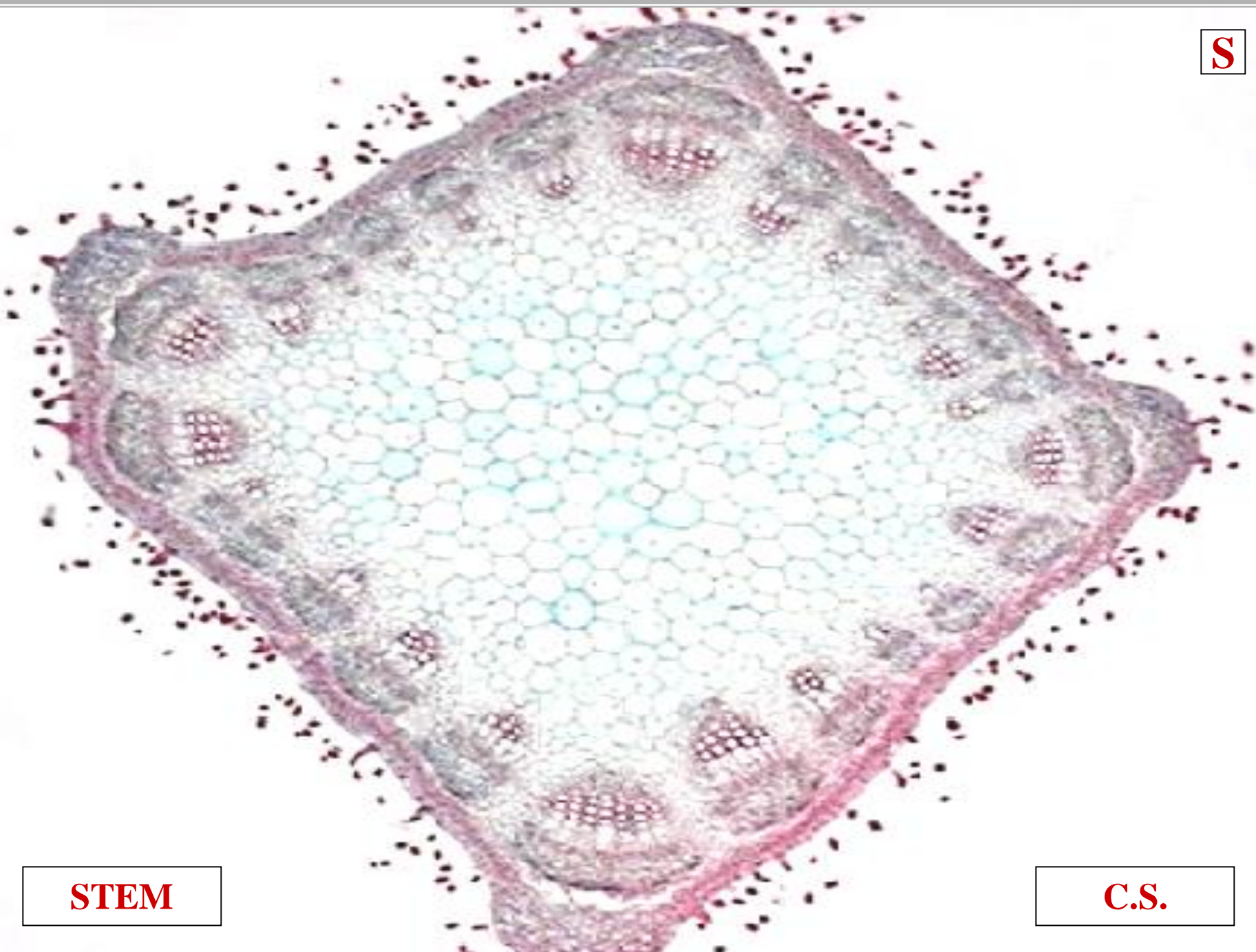
PROTOSTELE / ACTINOSTELE





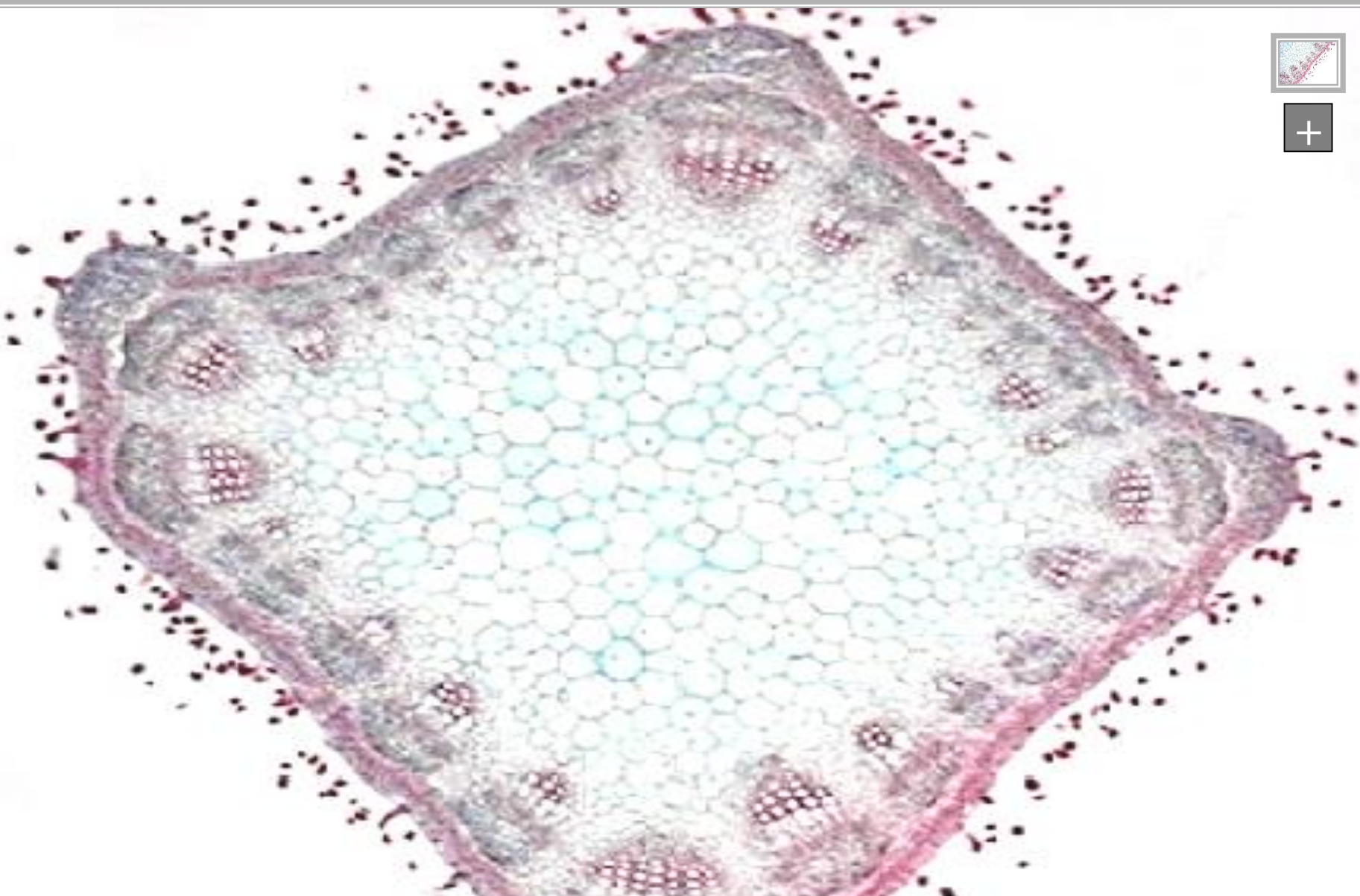
STEM STELE

S



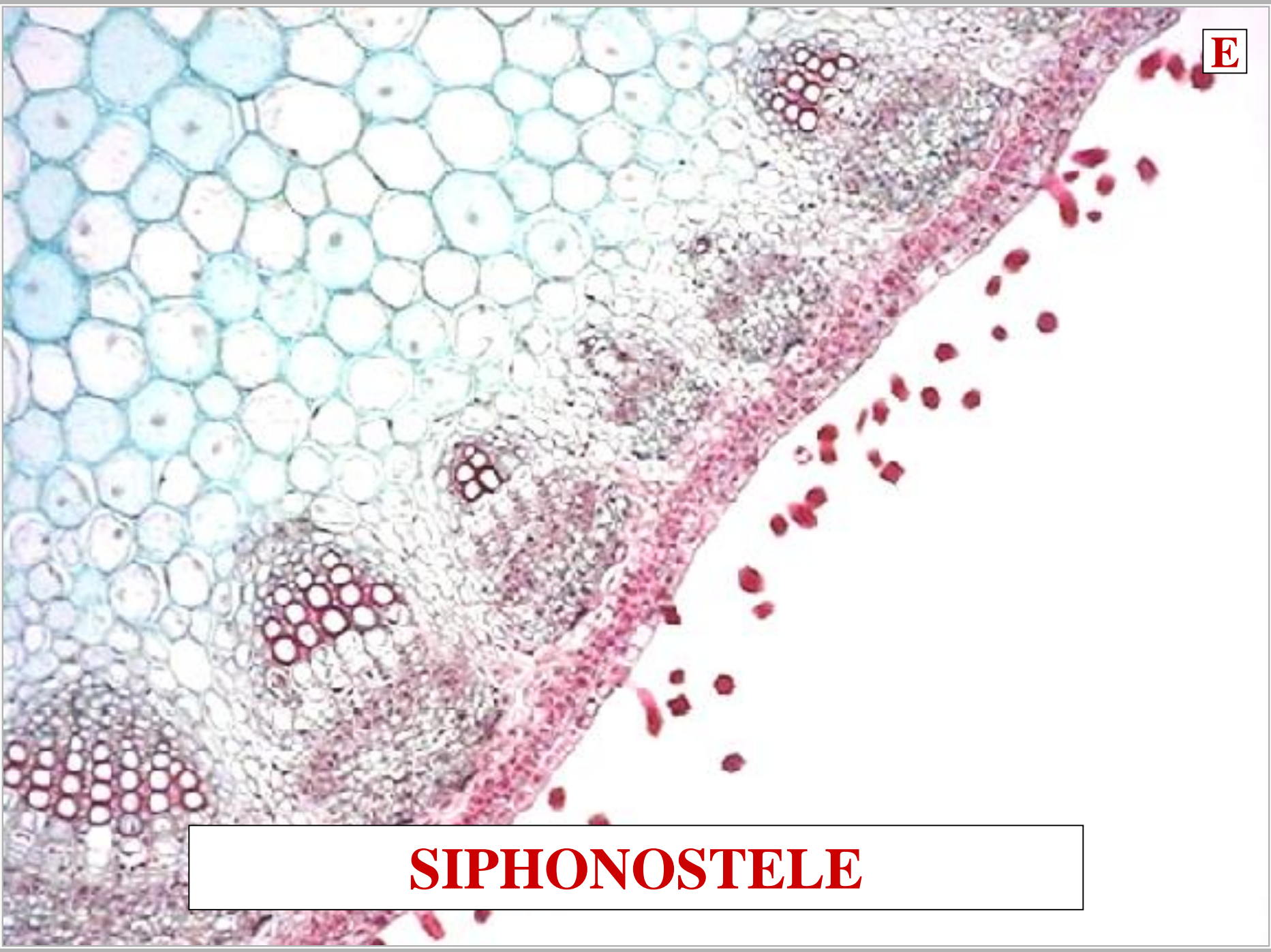
STEM

C.S.



SIPHONOSTELE

E



SIPHONOSTELE



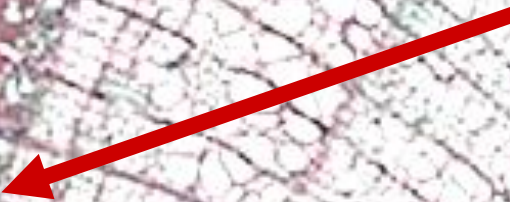
^
S

SIPHONOSTELE / EUSTELE



SECONDARY GROWTH

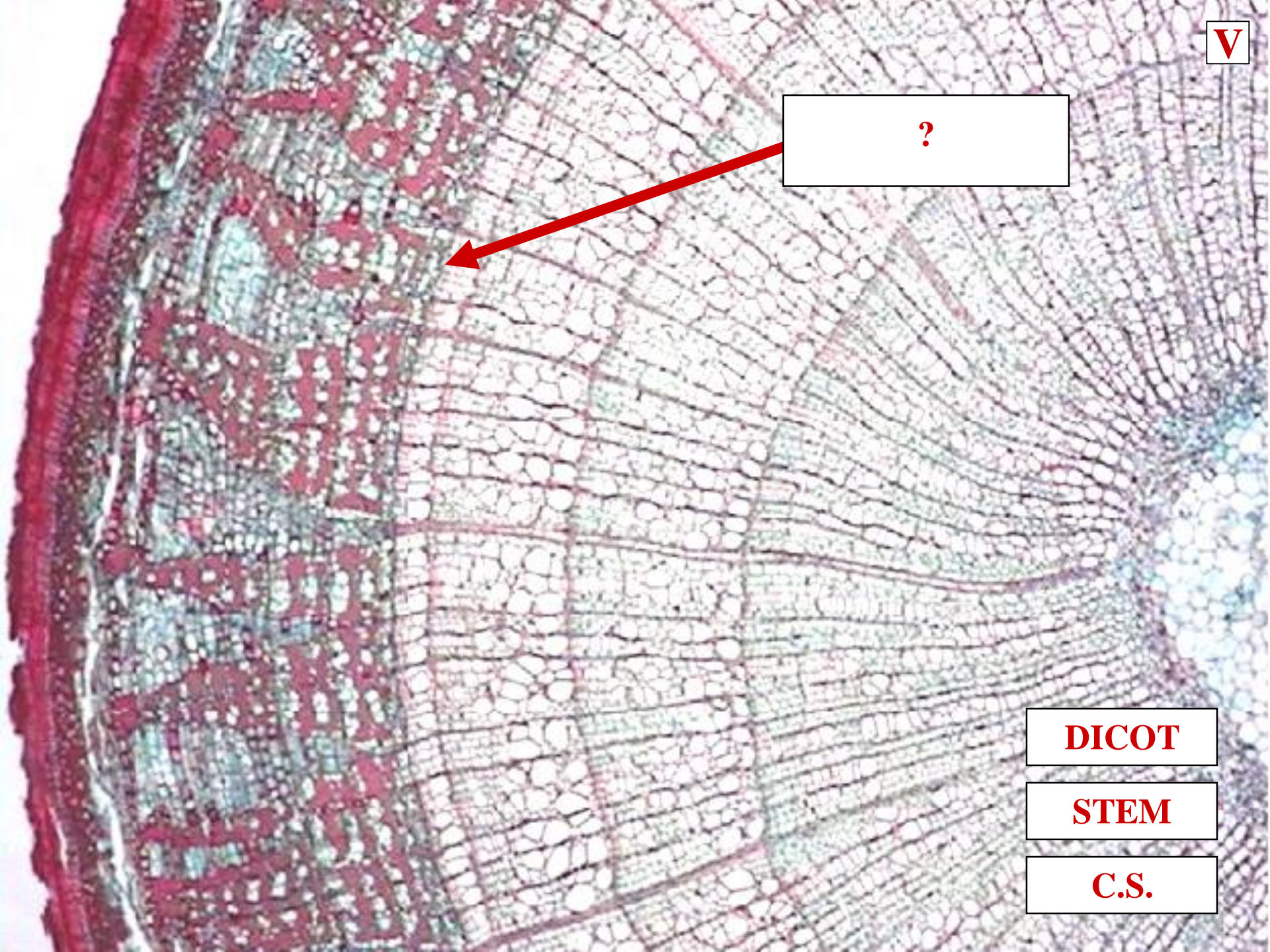
?



DICOT

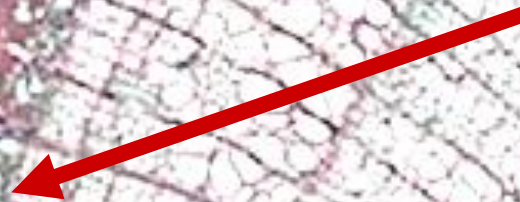
STEM

C.S.



?

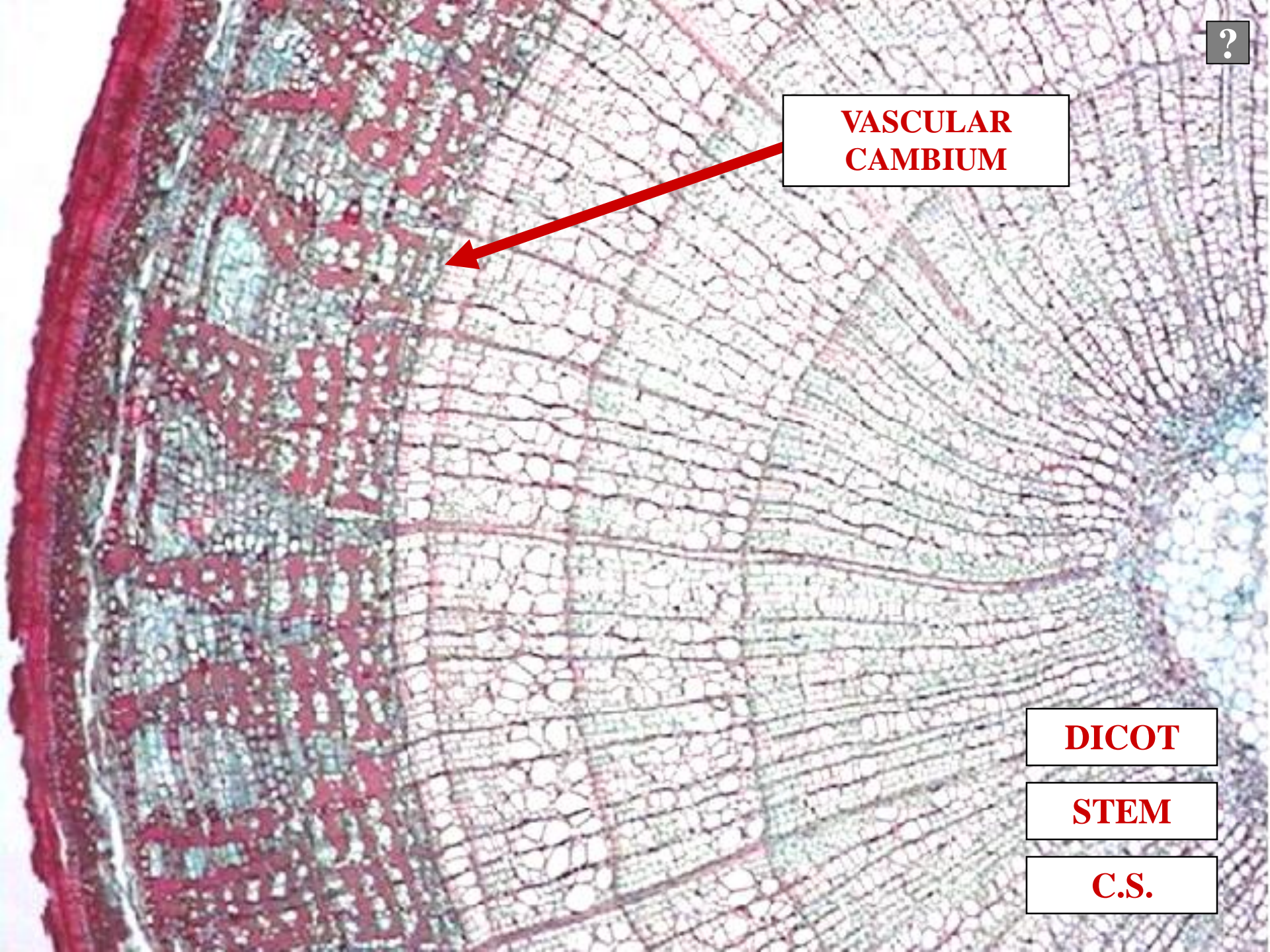
**VASCULAR
CAMBIUM**



DICOT

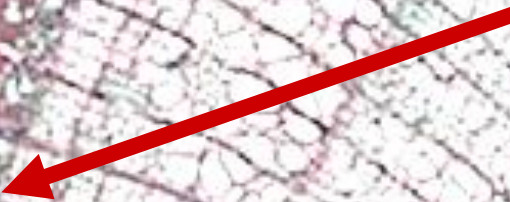
STEM

C.S.



P

**VASCULAR
CAMBIUM**



?

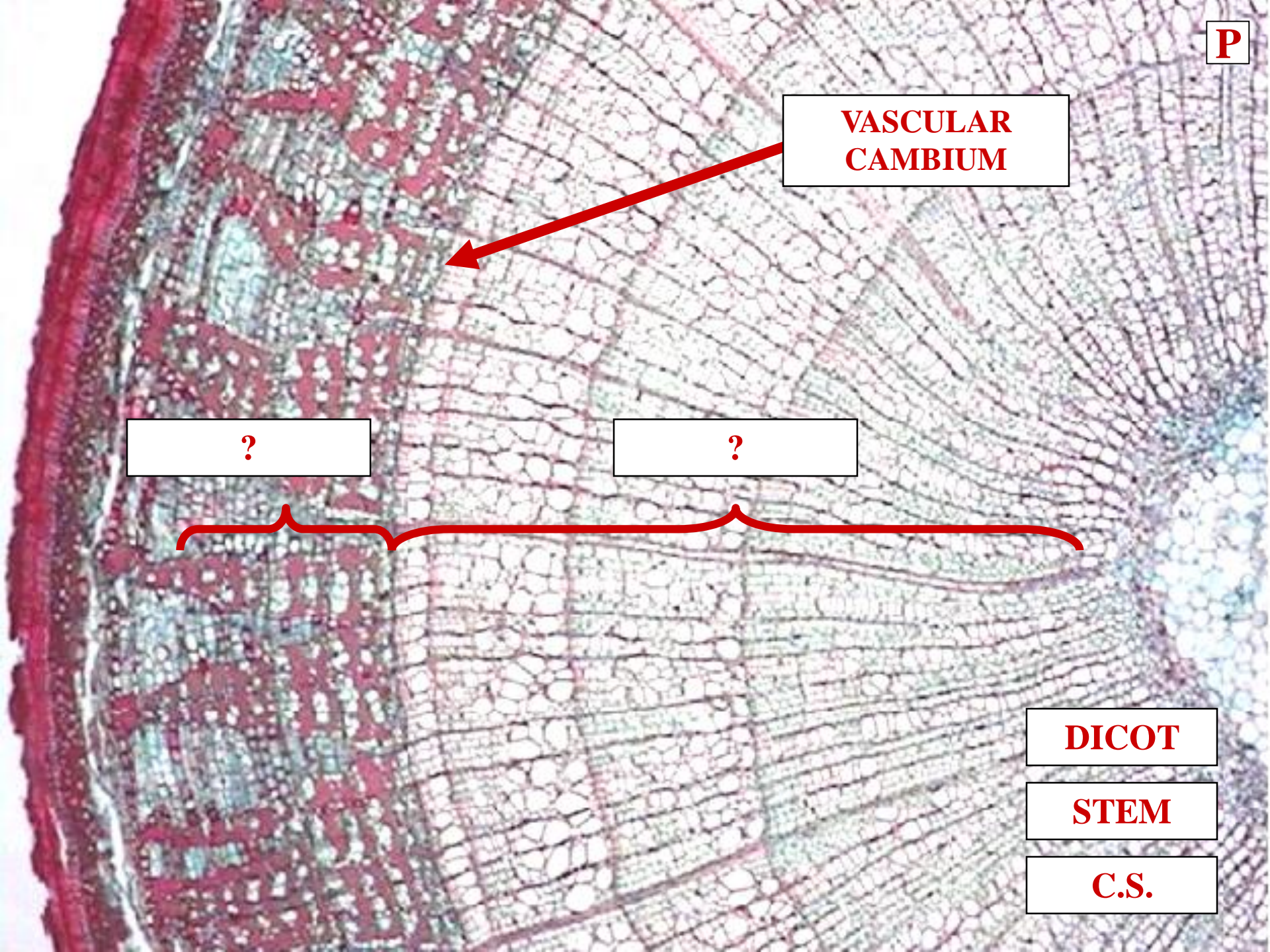
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DICOT

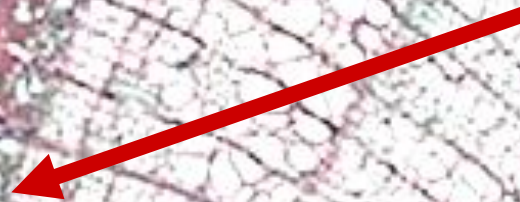
STEM

C.S.



X

VASCULAR
CAMBIUM



~2 PHLOEM

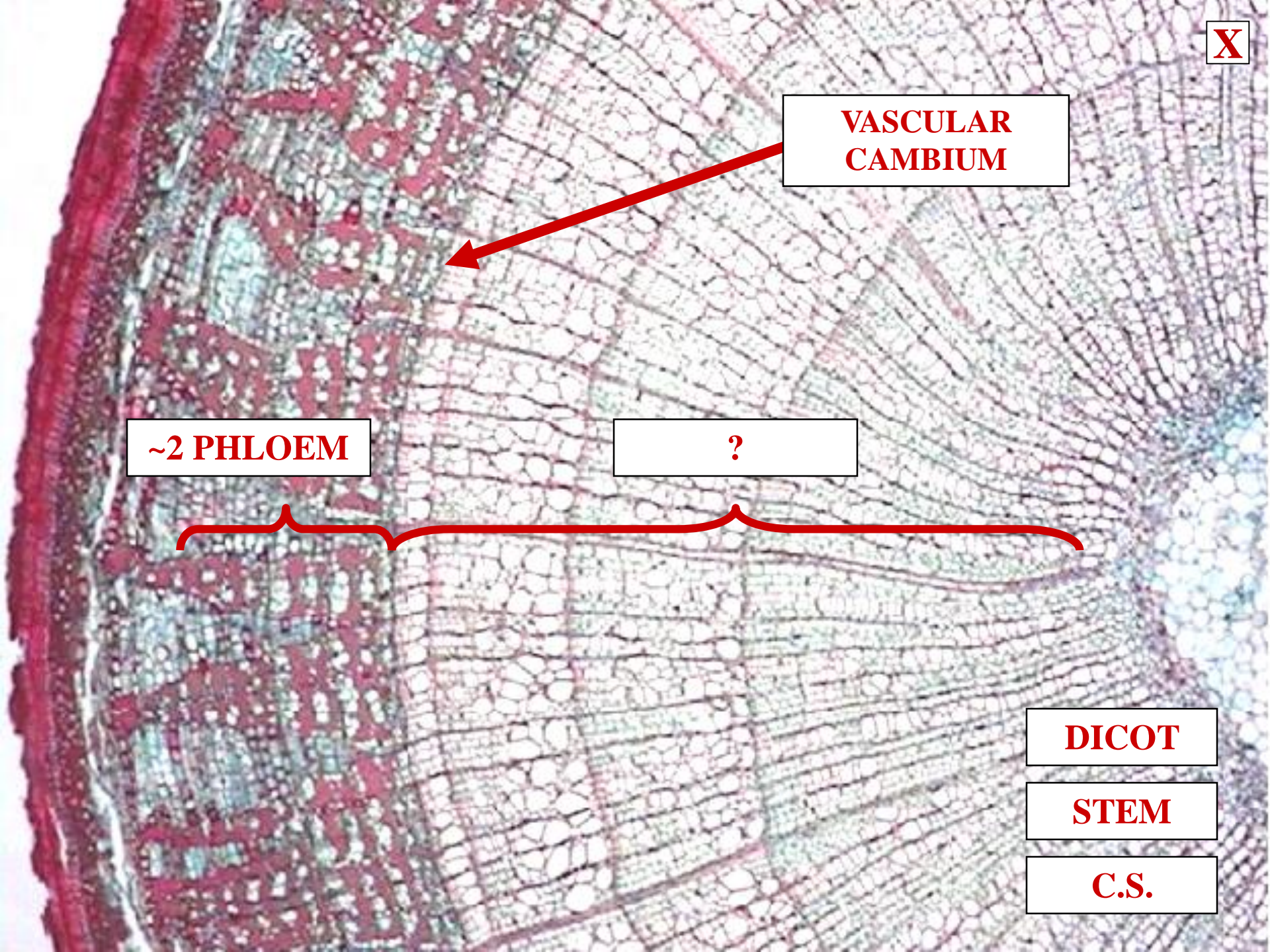
?



DICOT

STEM

C.S.



**VASCULAR
CAMBIUM**

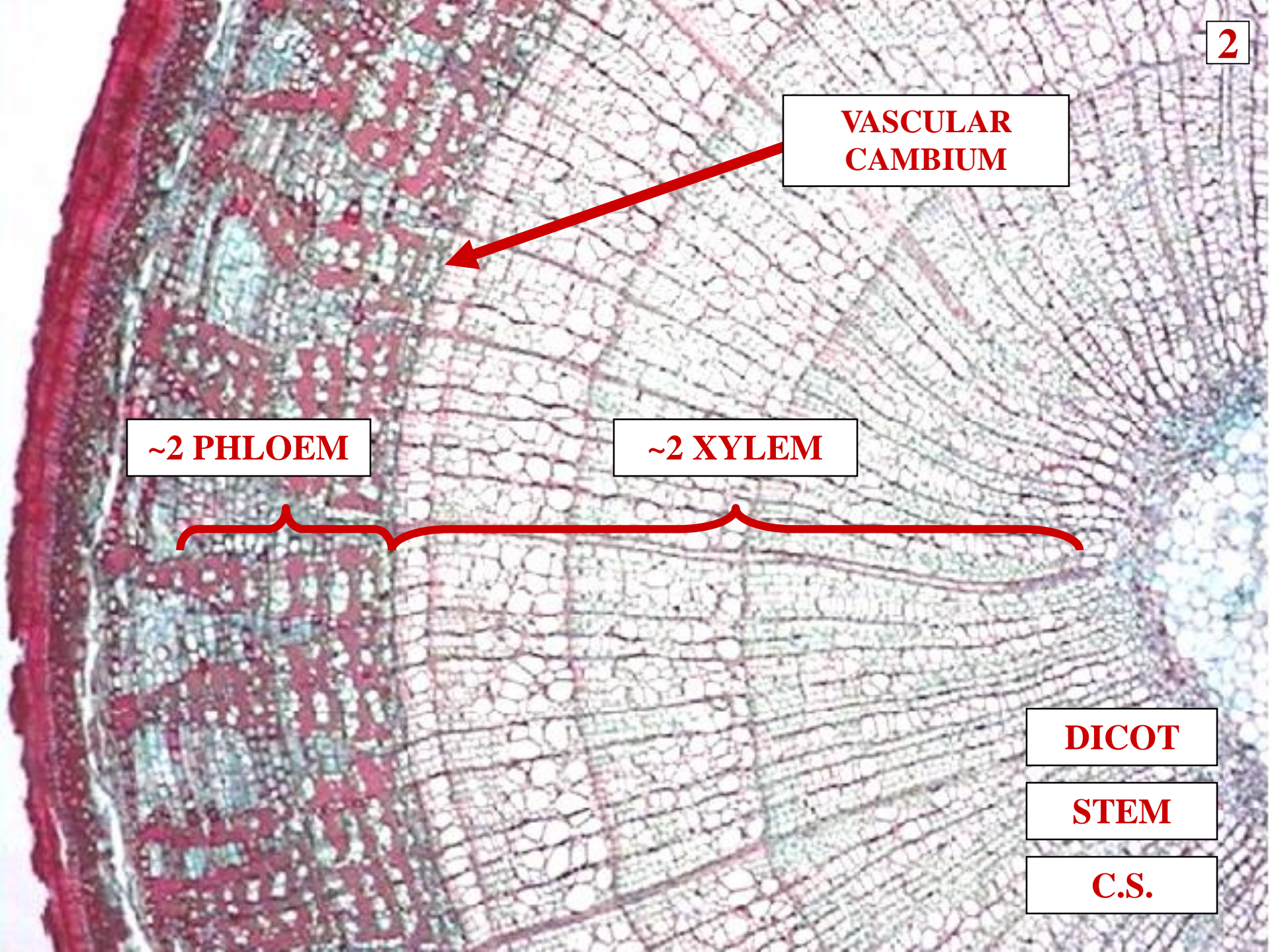
~2 PHLOEM

~2 XYLEM

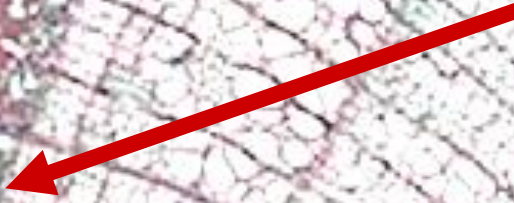
DICOT

STEM

C.S.

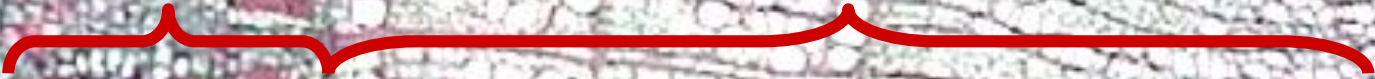


**VASCULAR
CAMBIUM**



~2 PHLOEM

~2 XYLEM

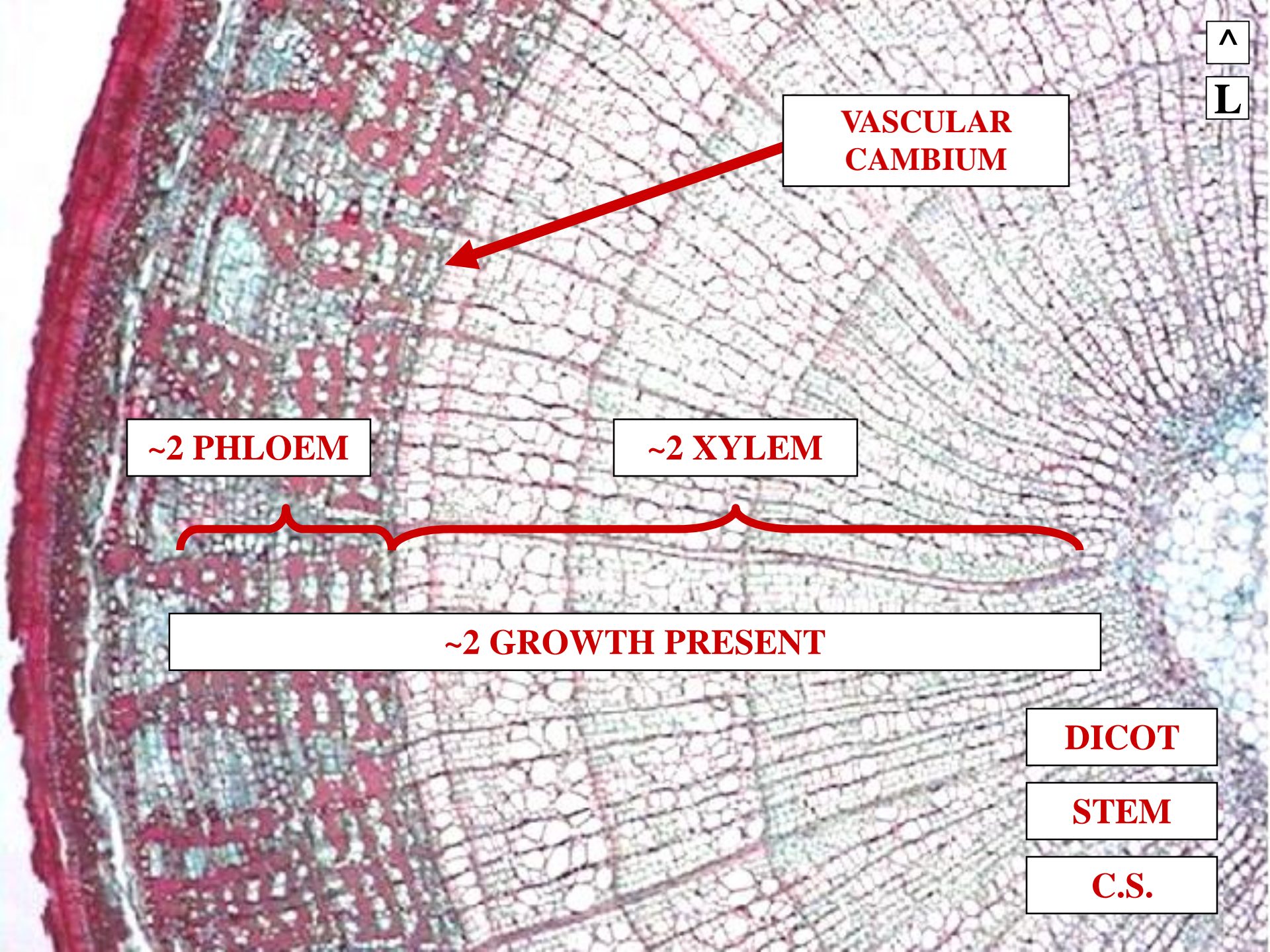


~2 GROWTH PRESENT

DICOT

STEM

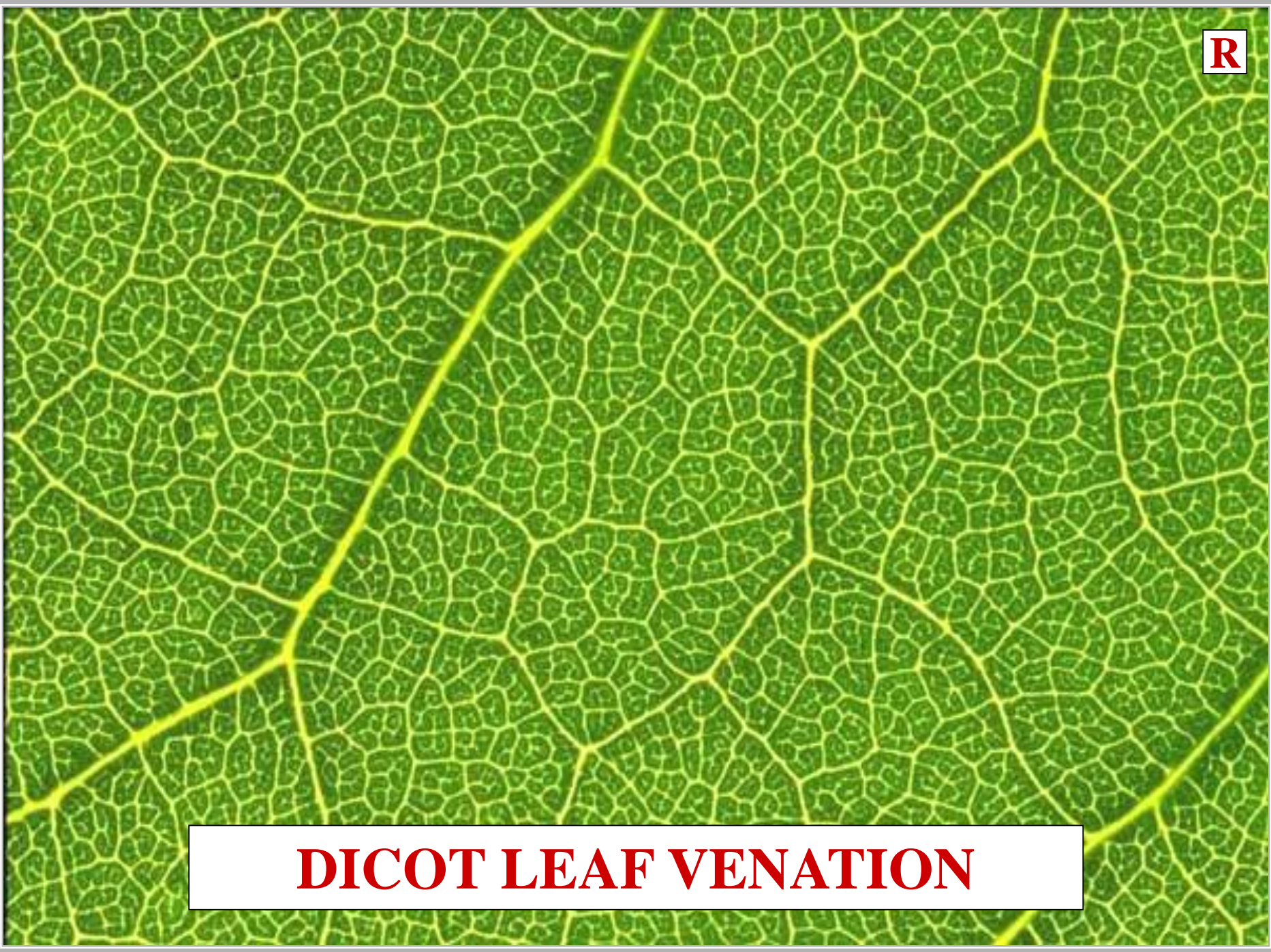
C.S.





LEAF VENATION

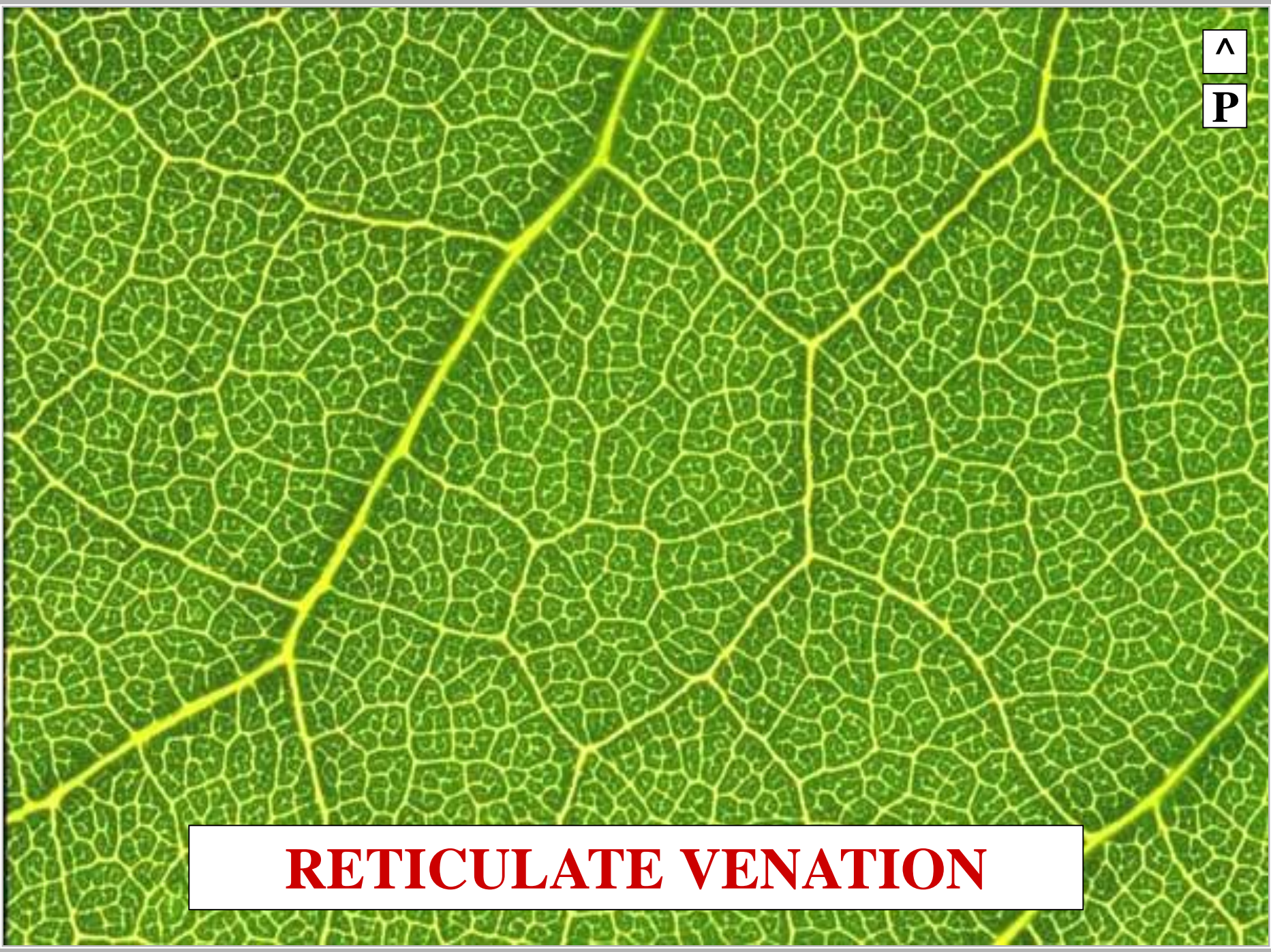
DICOT LEAF VENATION



^

P

RETICULATE VENATION





PERIANTH



DICOT FLOWER

^

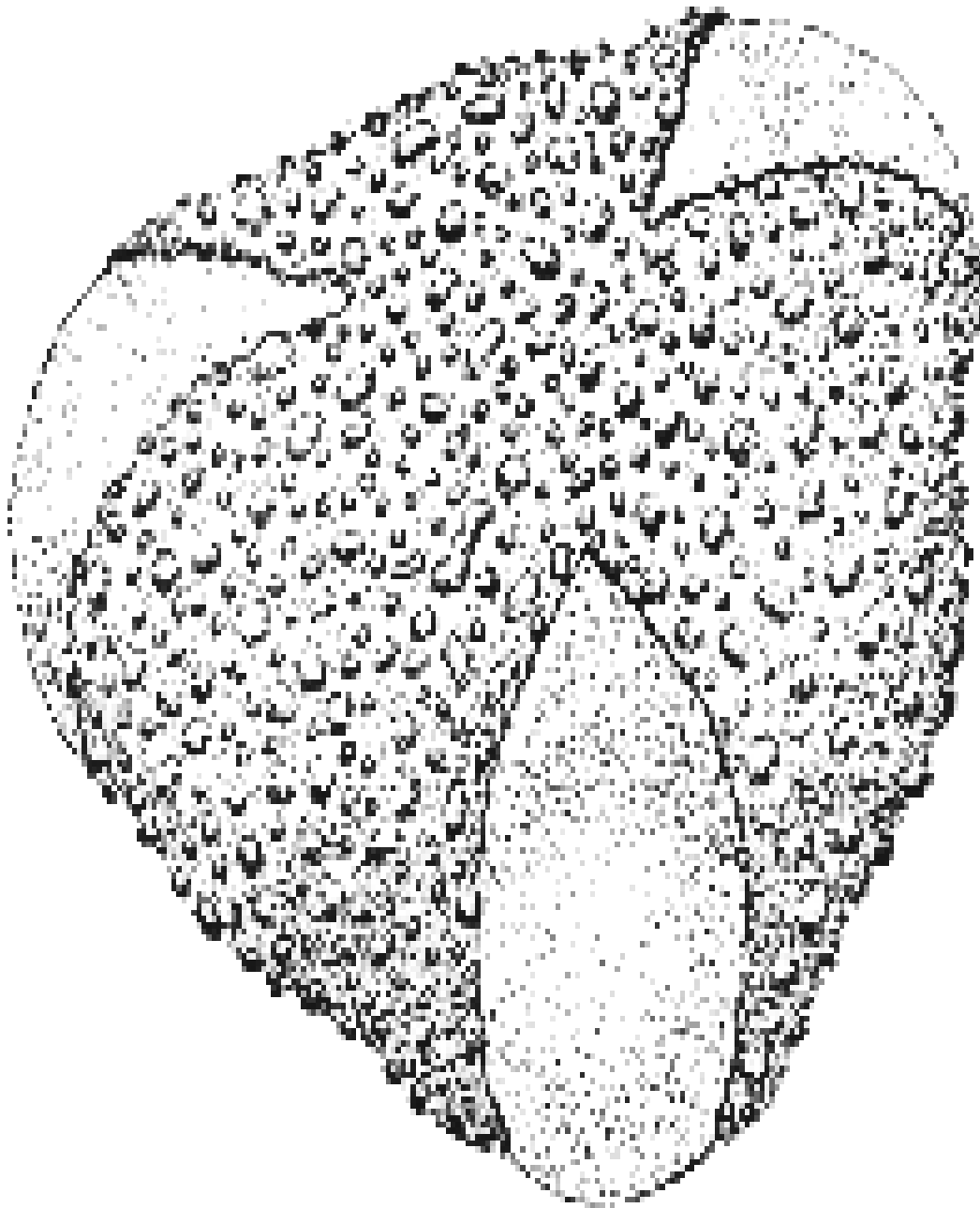
P



4-5 PERIANTH SEGMENTS



POLLEN

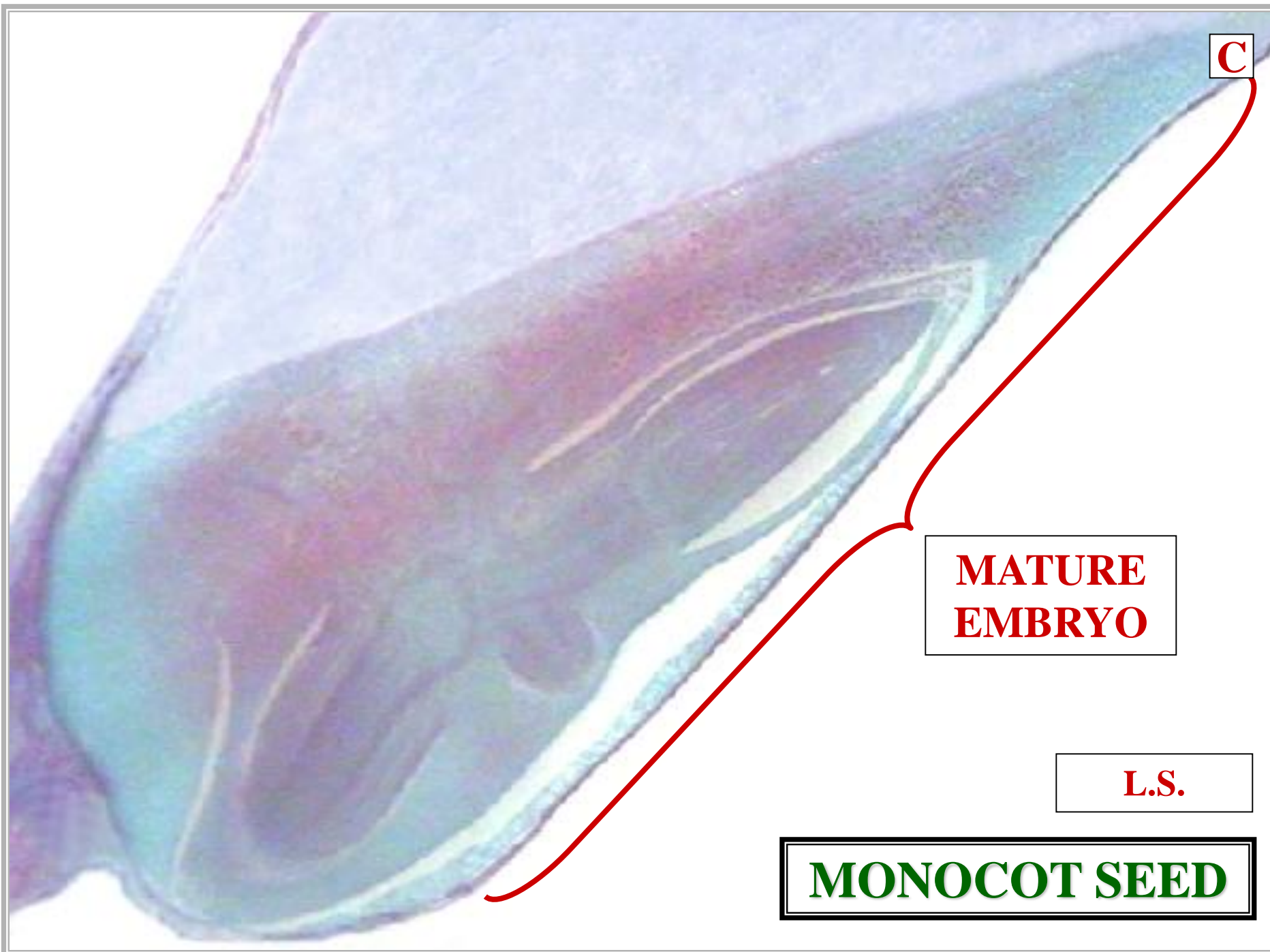


**DICOT
TRICOLPATE
POLLEN**

LILIOPSIDA CHARACTERS



COTYLEDONS

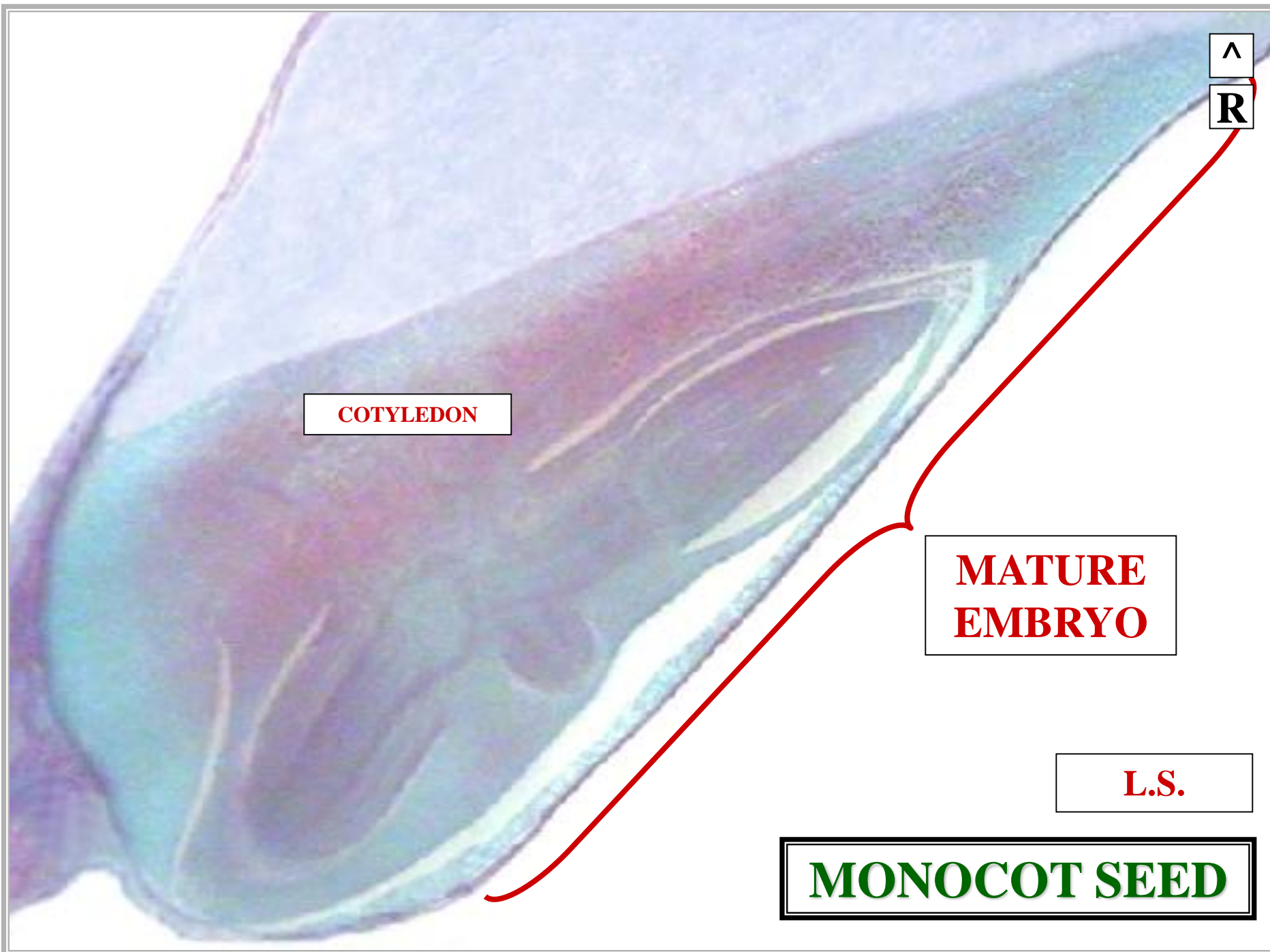


C

**MATURE
EMBRYO**

L.S.

MONOCOT SEED



COTYLEDON

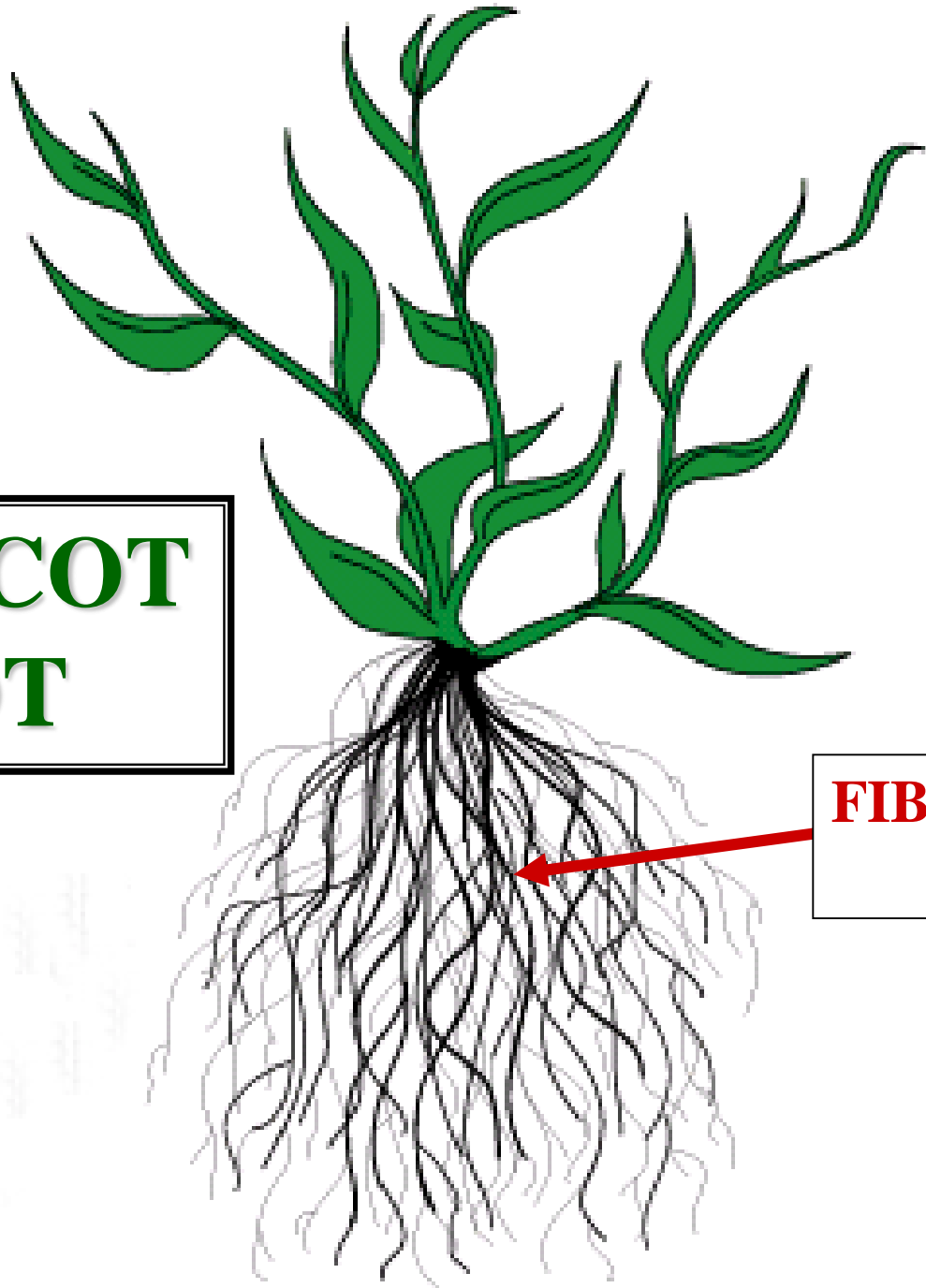
**MATURE
EMBRYO**

L.S.

MONOCOT SEED

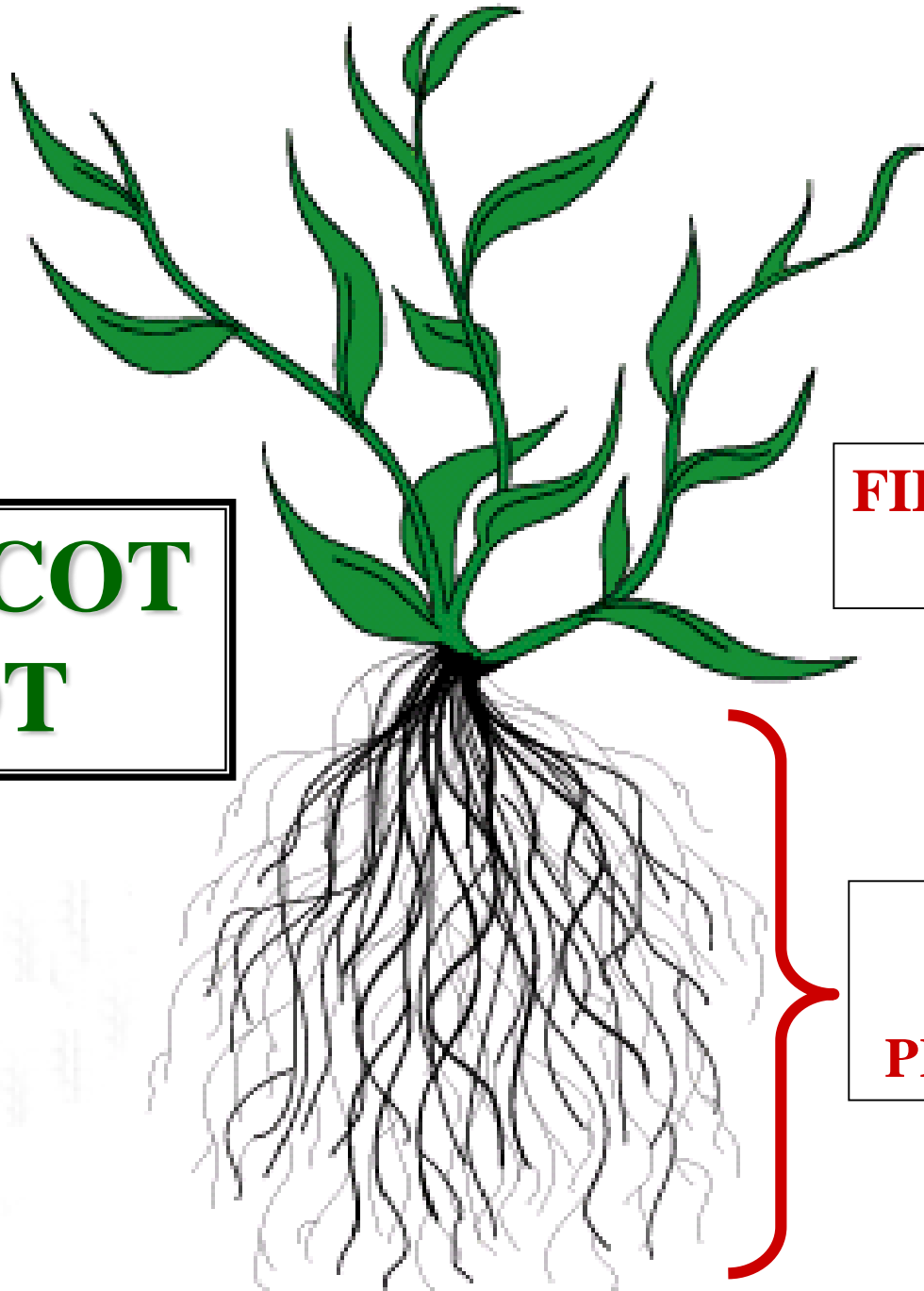
^
R

ROOT HABIT



**MONOCOT
ROOT**

**FIBROUS ROOT
SYSTEM**



**MONOCOT
ROOT**

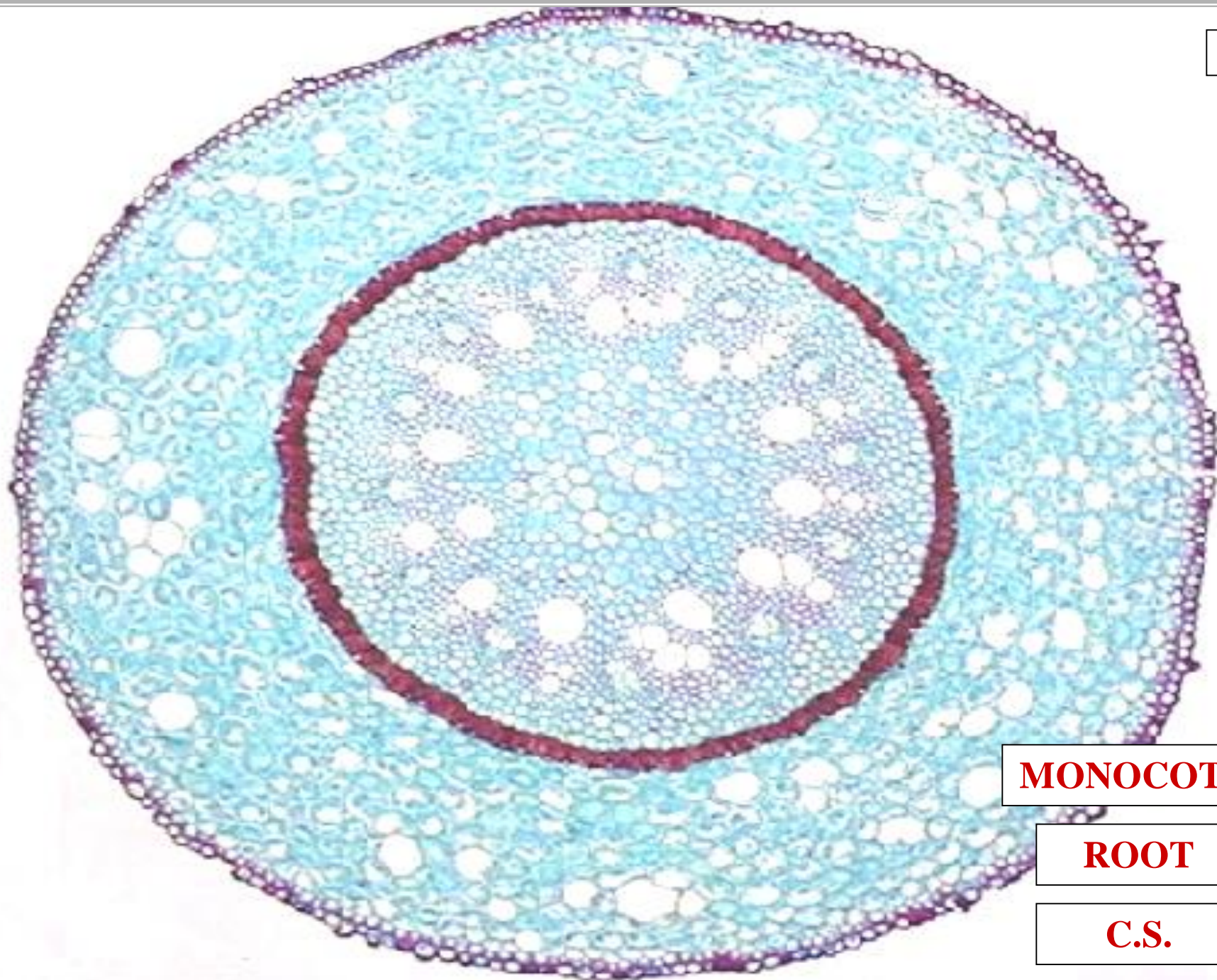
**FIBROUS ROOT
SYSTEM**

**SHALLOW
SOIL
PENETRATION**



ROOT STELE

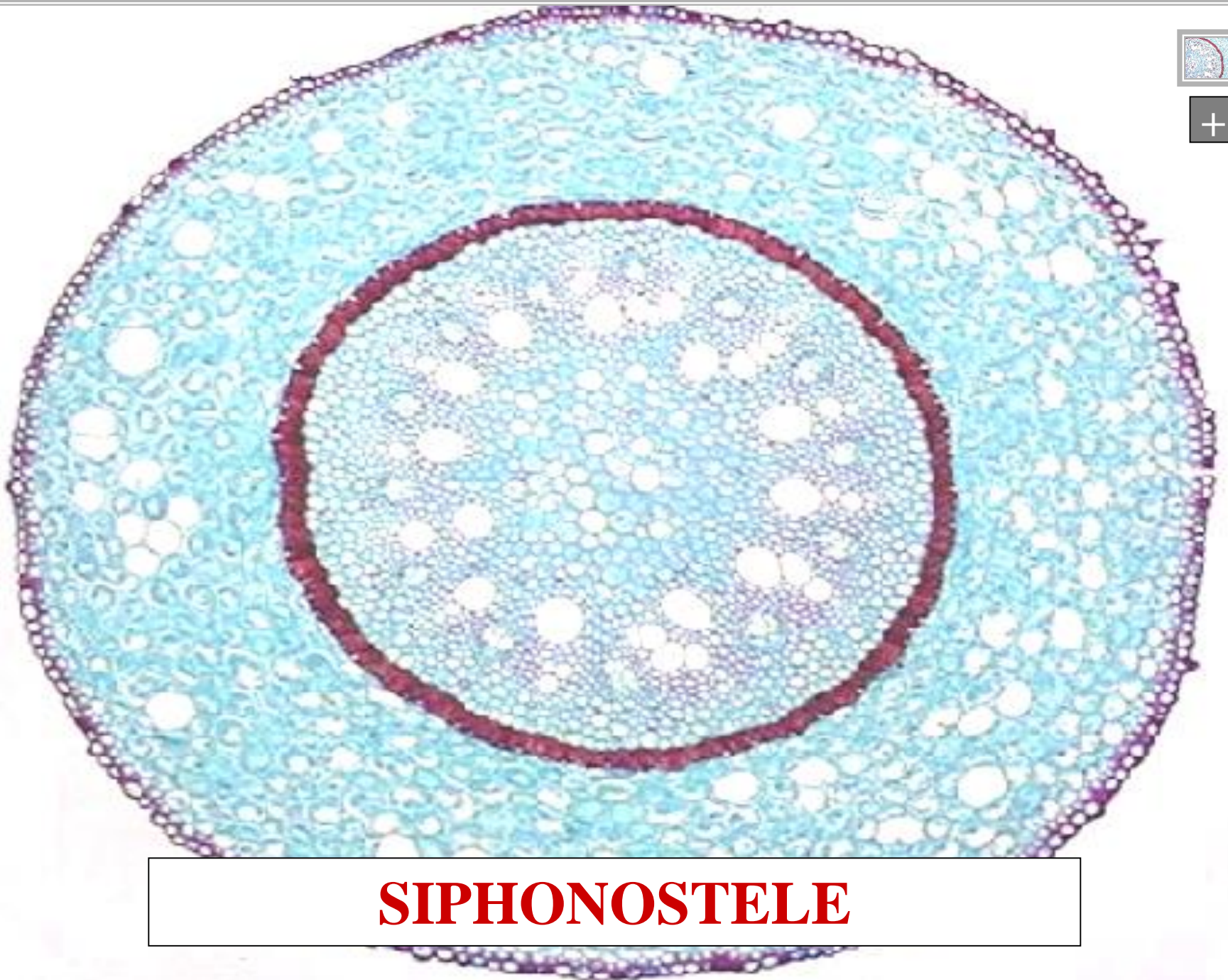
S



MONOCOT

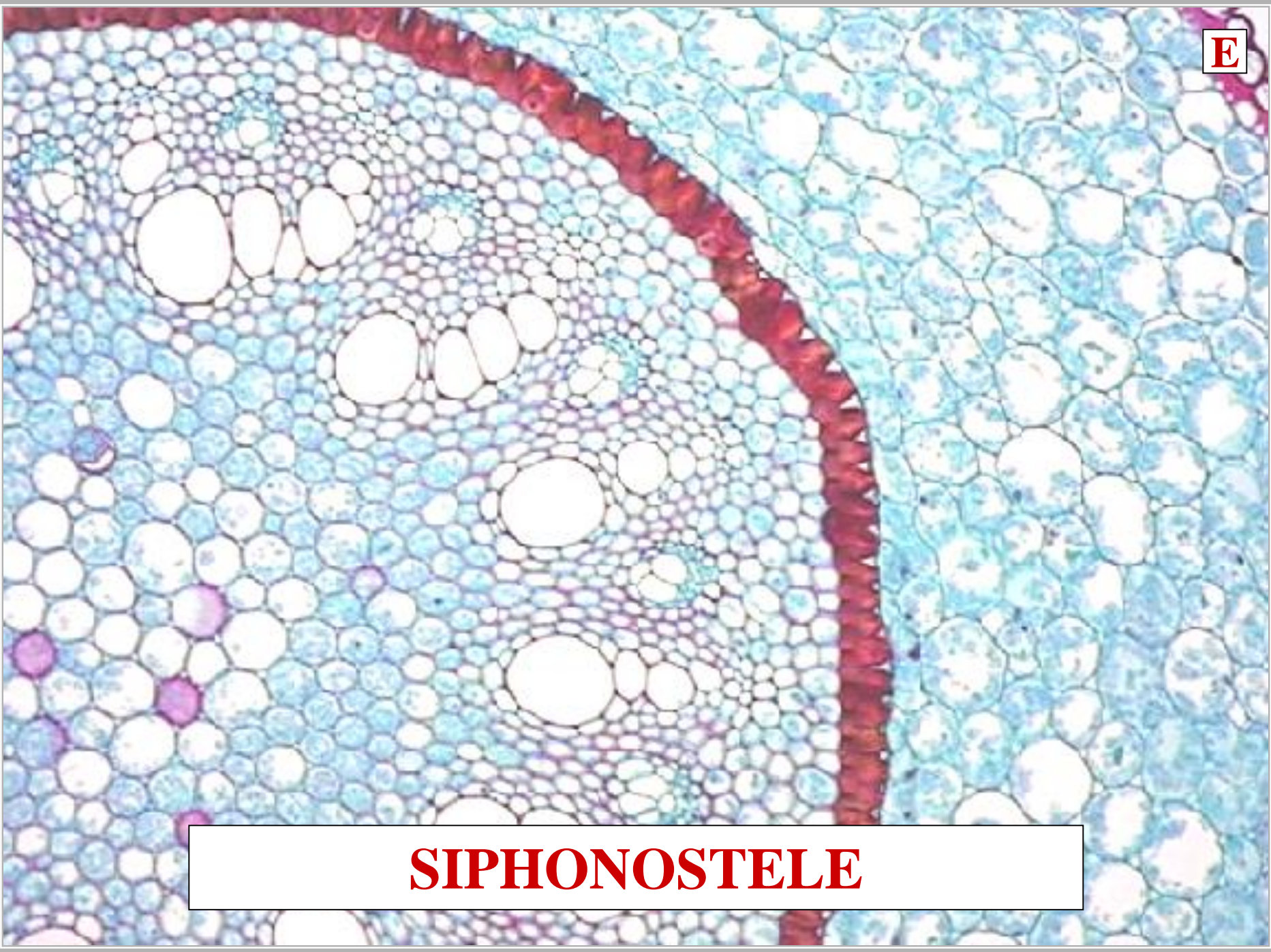
ROOT

C.S.



SIPHONOSTELE

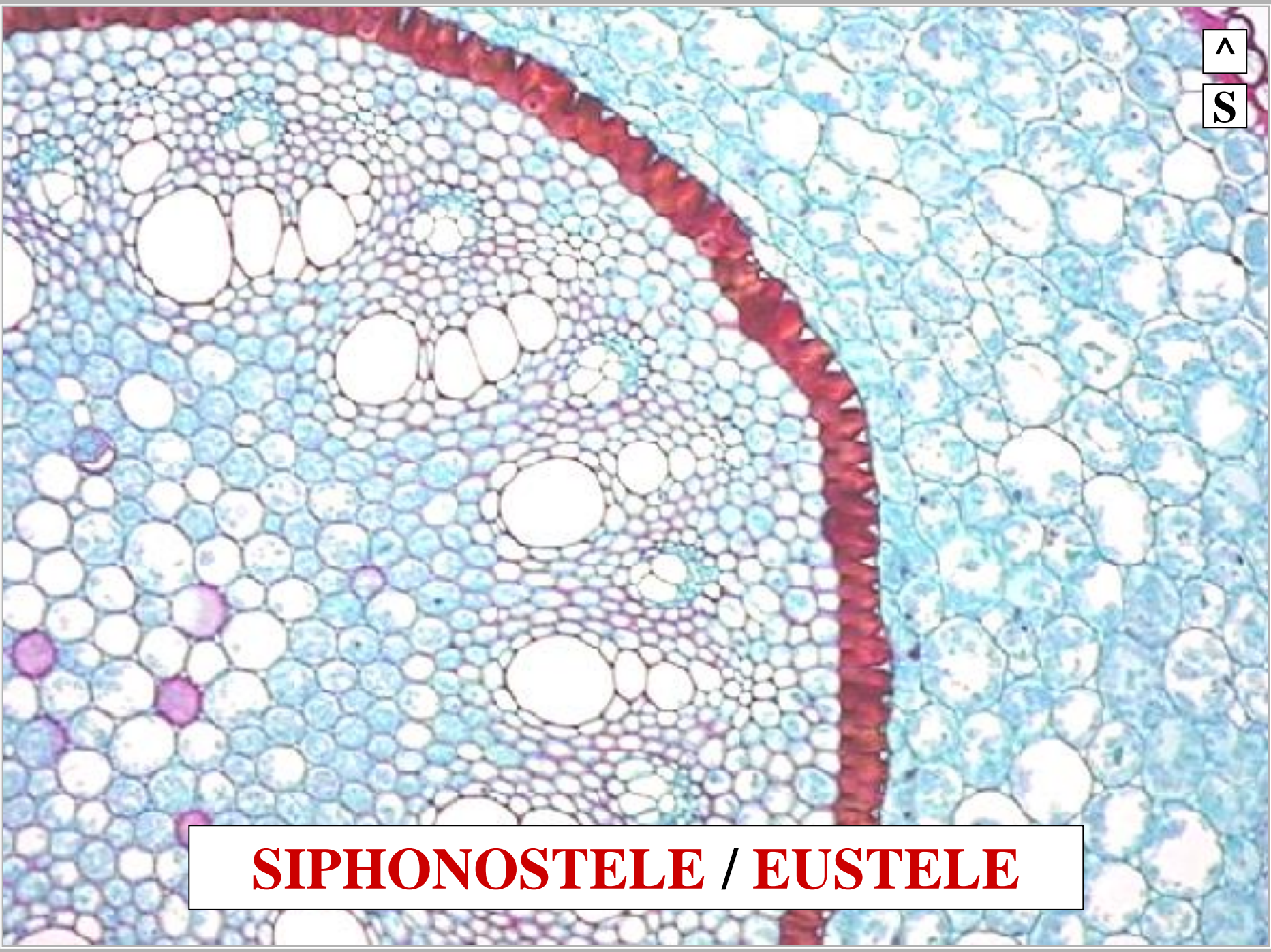
E



SIPHONOSTELE

^
S

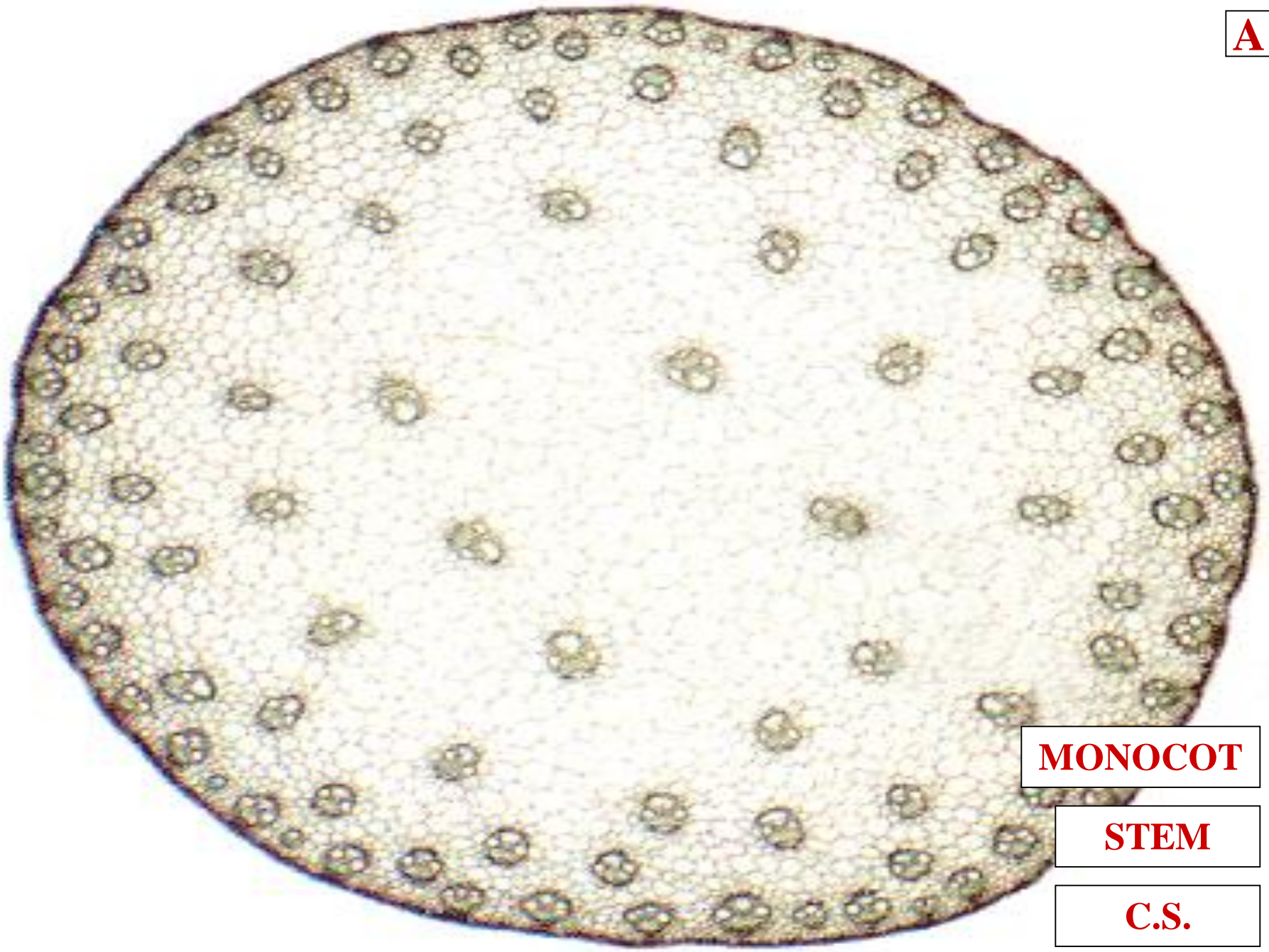
SIPHONOSTELE / EUSTELE





STEM STELE

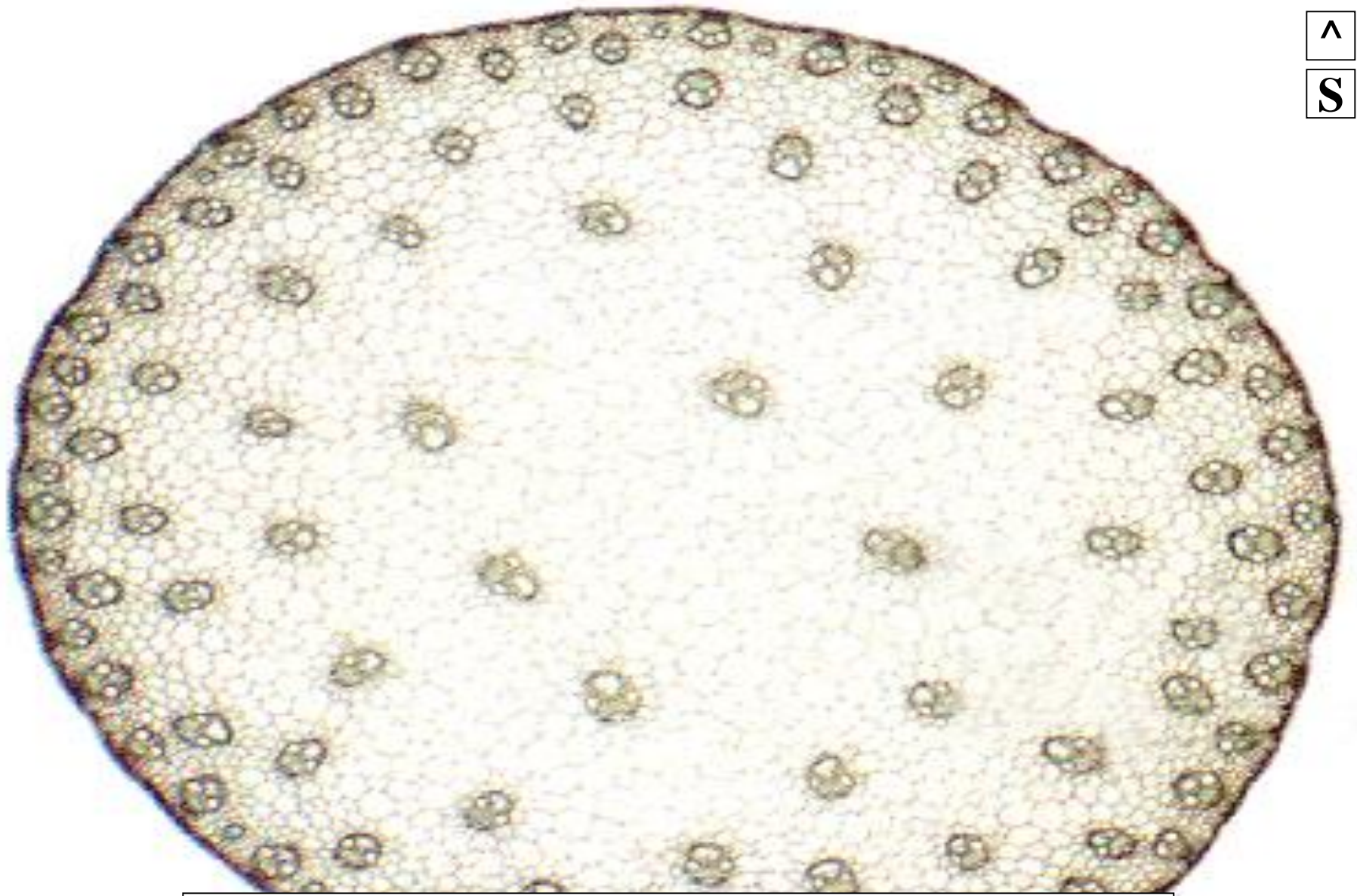
A



MONOCOT

STEM

C.S.



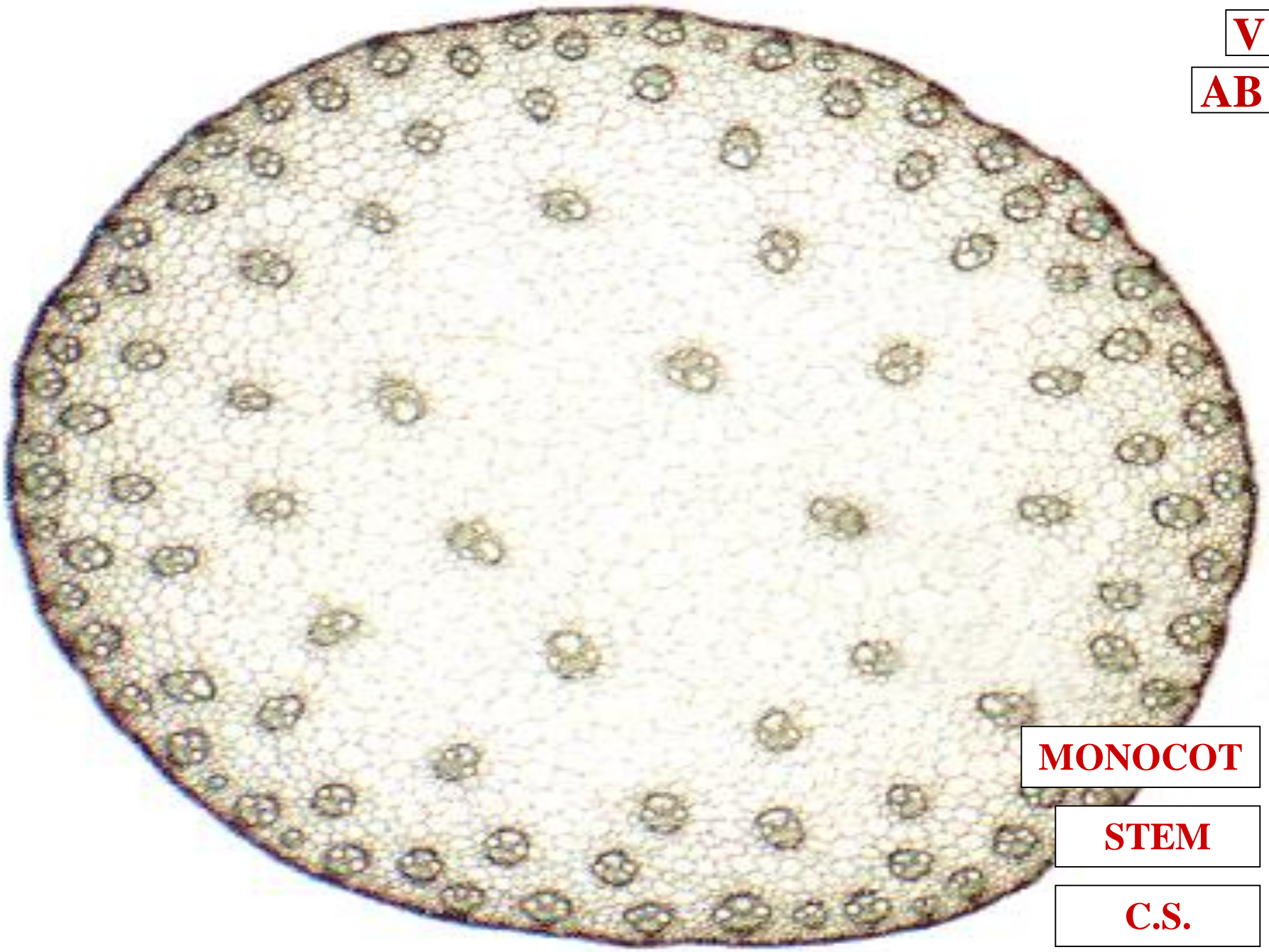
ATACTOSTELE



SECONDARY GROWTH

V

AB



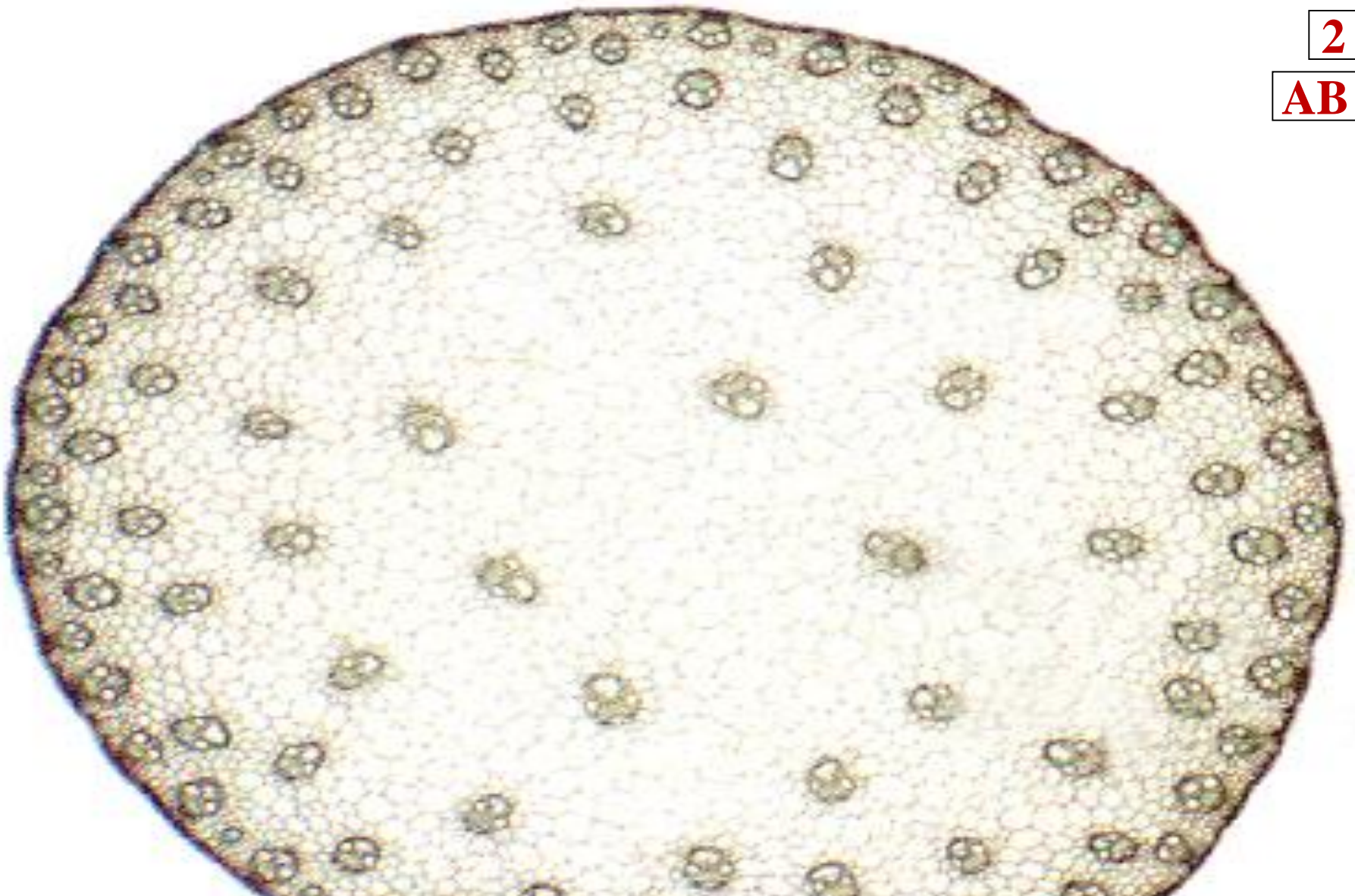
MONOCOT

STEM

C.S.

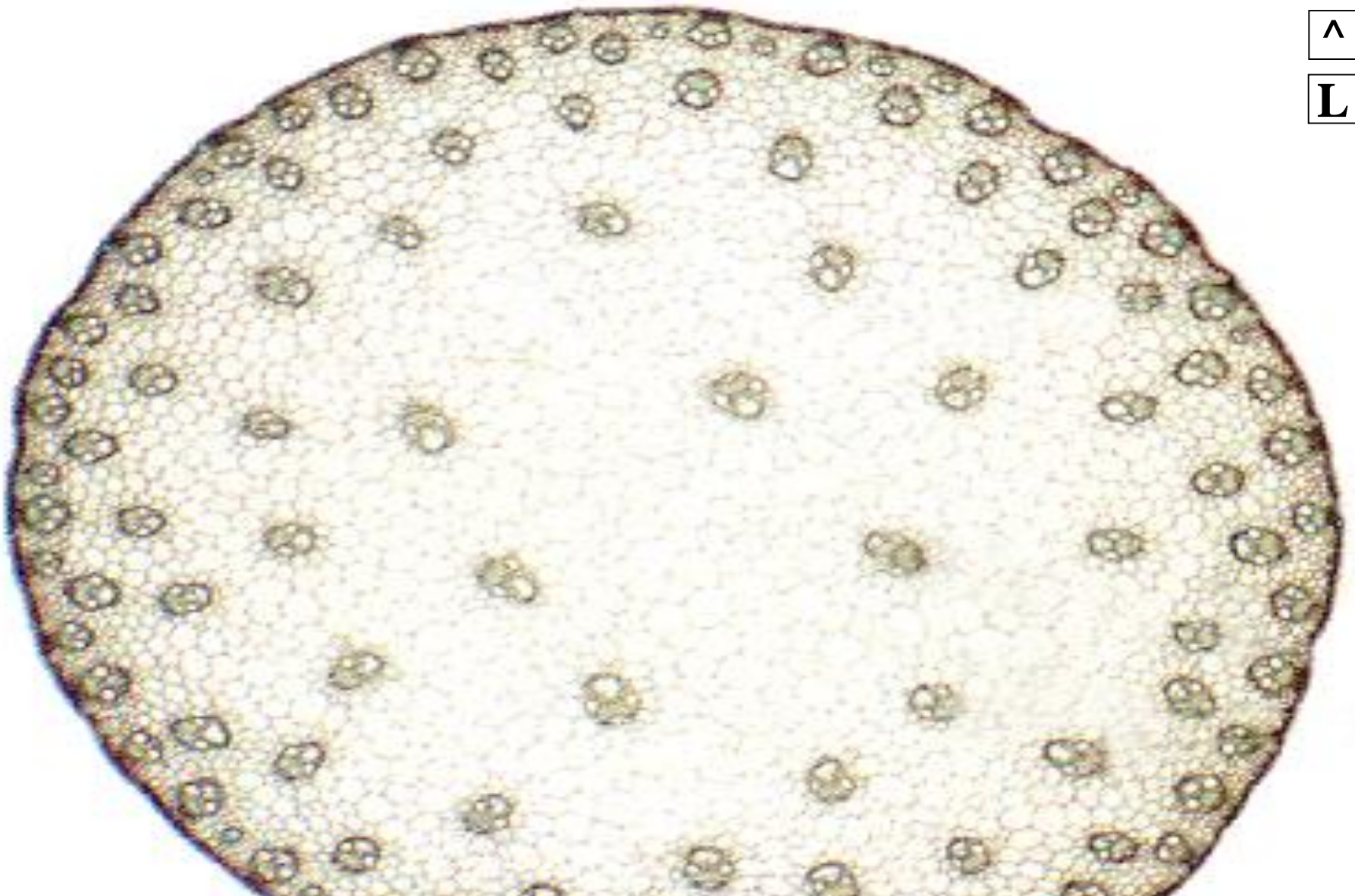
2

AB



VASCULAR CAMBIUM: ABSENT

^
L



~2 GROWTH: ABSENT

LEAF VENATION

MONOCOT LEAF VENATION

^

P

PARALLEL VENATION



PERIANTH



MONOCOT FLOWER

^

P

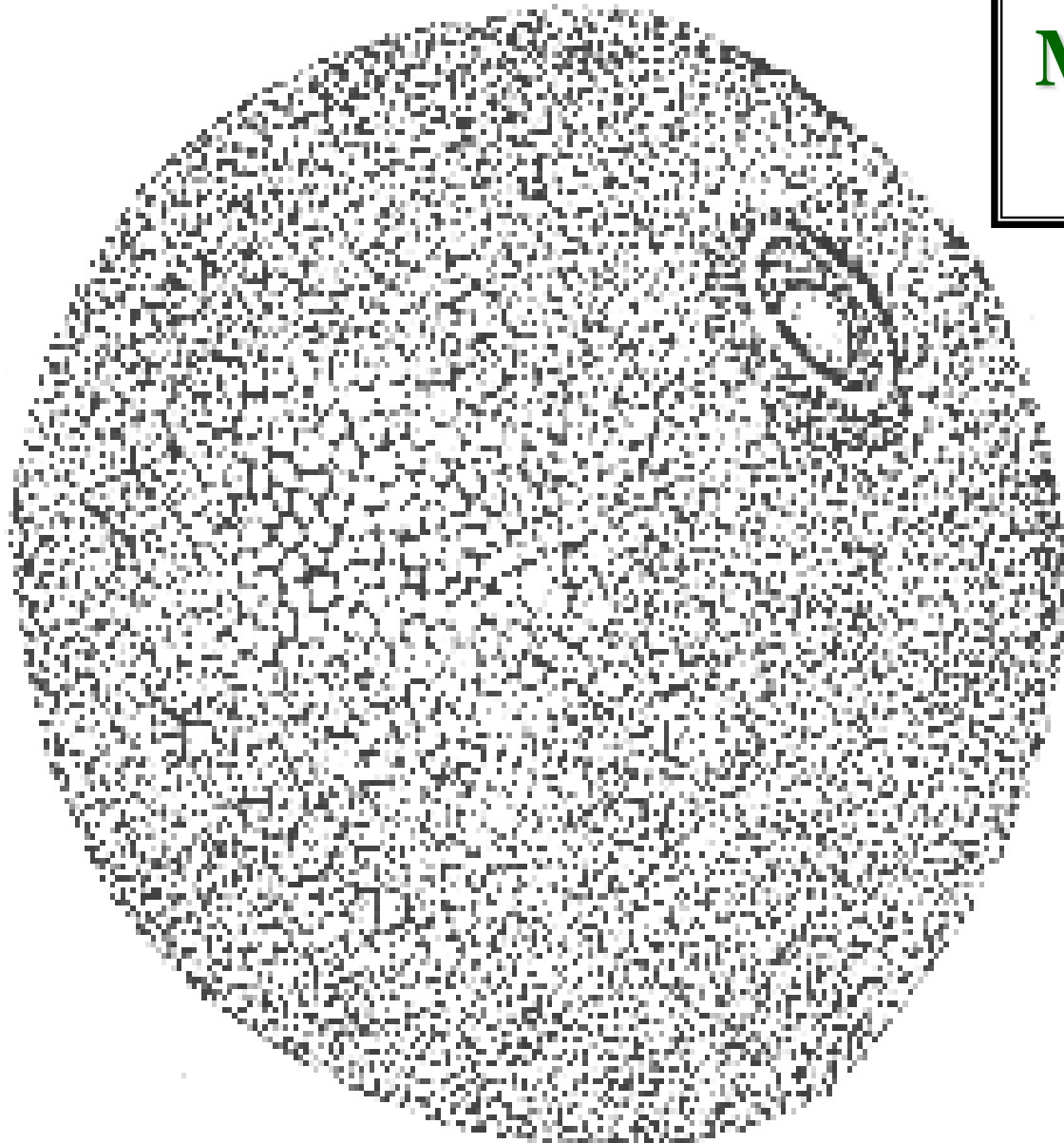


3 PERIANTH SEGMENTS



POLLEN

**MONOCOT
MONOCOLPATE
POLLEN**





**CLASS
CHARACTER
EXCEPTIONS
EXIST**





LEAF: VENATION



LEAF: RETICULATE VENATION



MAGNOLIOPSIDA





FLOWER: PERIANTH SEGMENTS



FLOWER: 3 PERIANTH SEGMENTS



LILIOPSIDA

**CLASS
CHARACTER
EXCEPTIONS
EXIST**

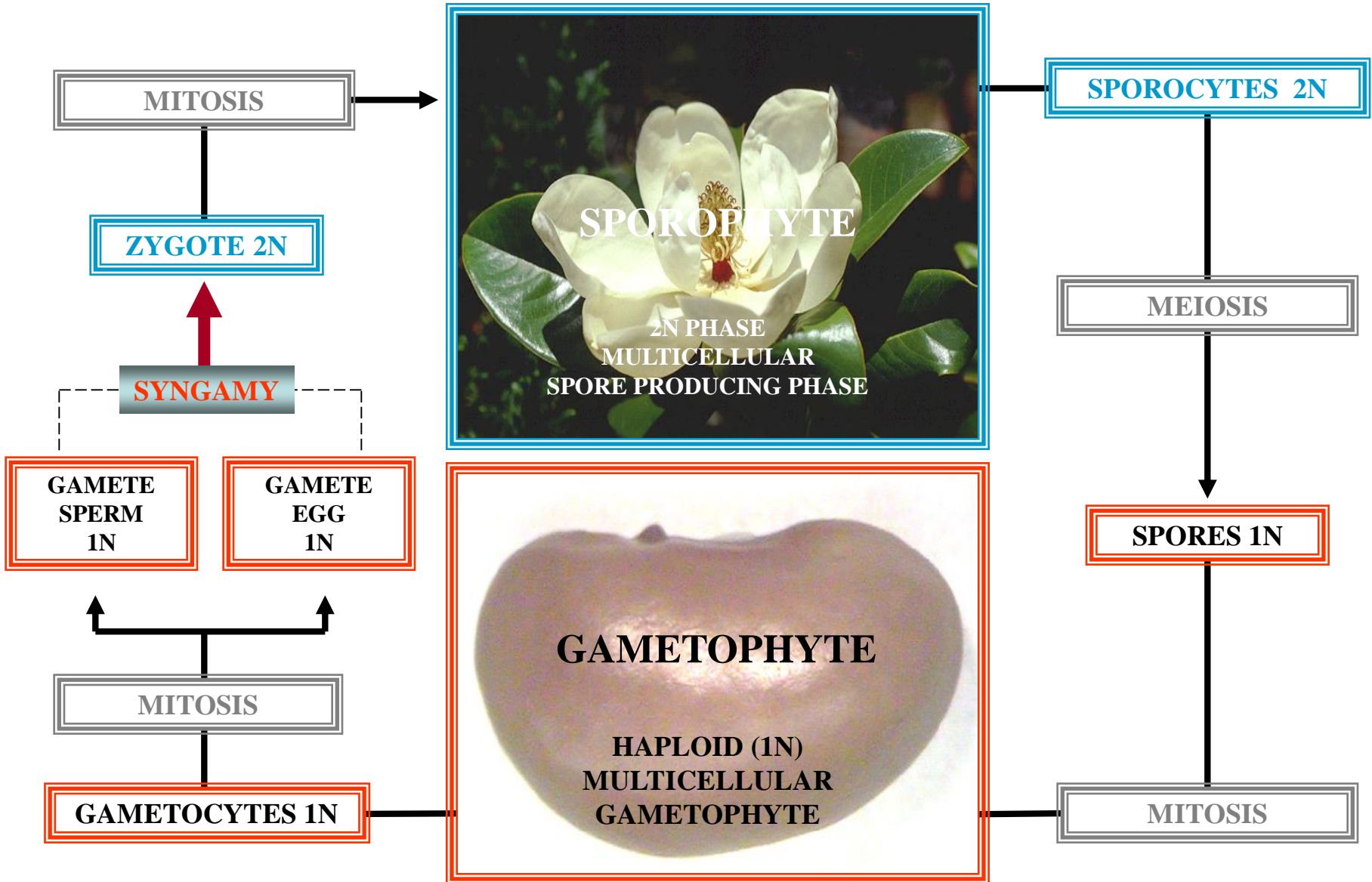


GENERAL CHARACTERS

MAGNOLIOPHYTA



LIFE CYCLE





SPOROPHYTE CHARACTERS



NUTRITION

NUTRITION MODES

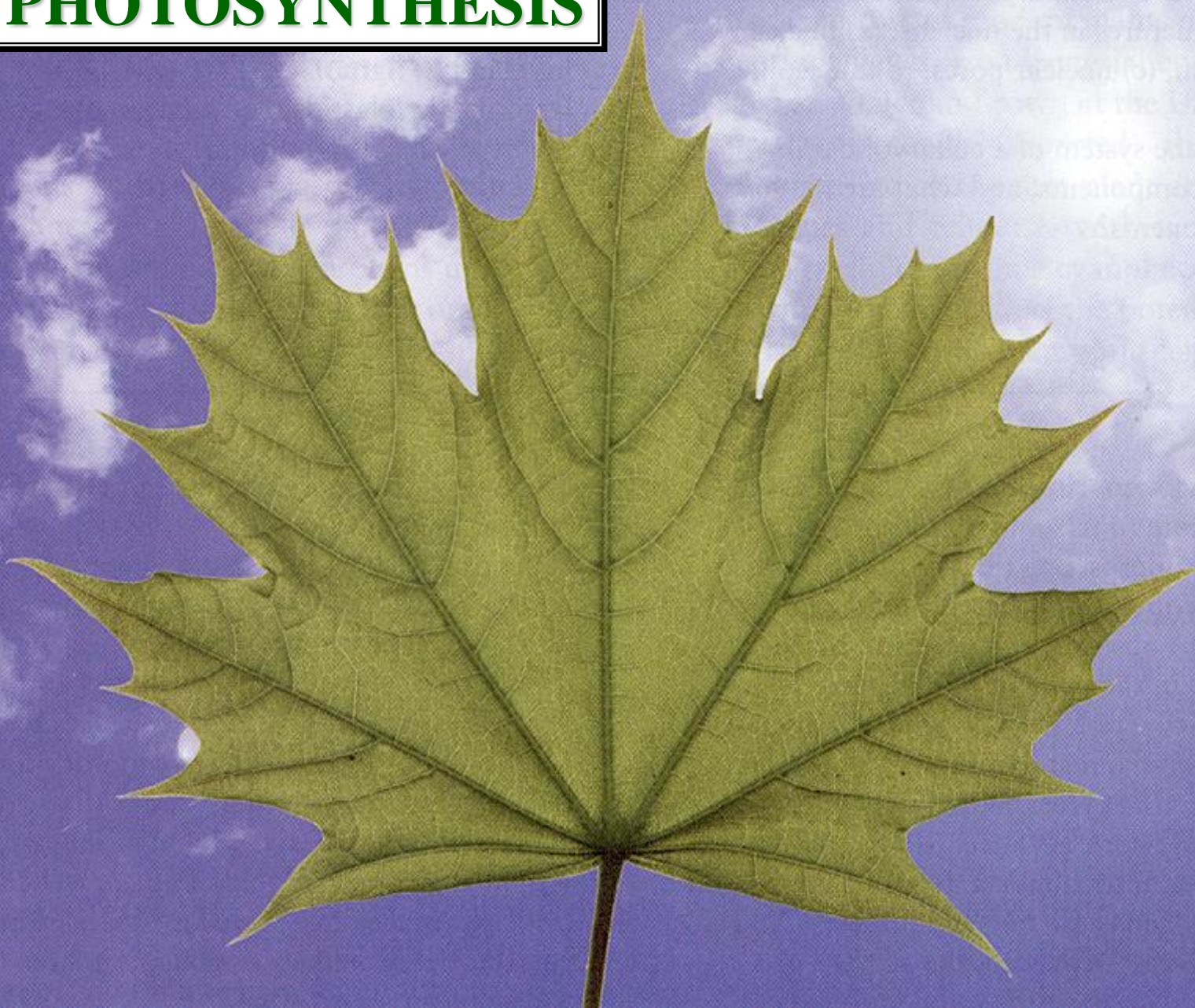


PHOTOSYNTHETIC

PHOTOSYNTHESIS

^

P

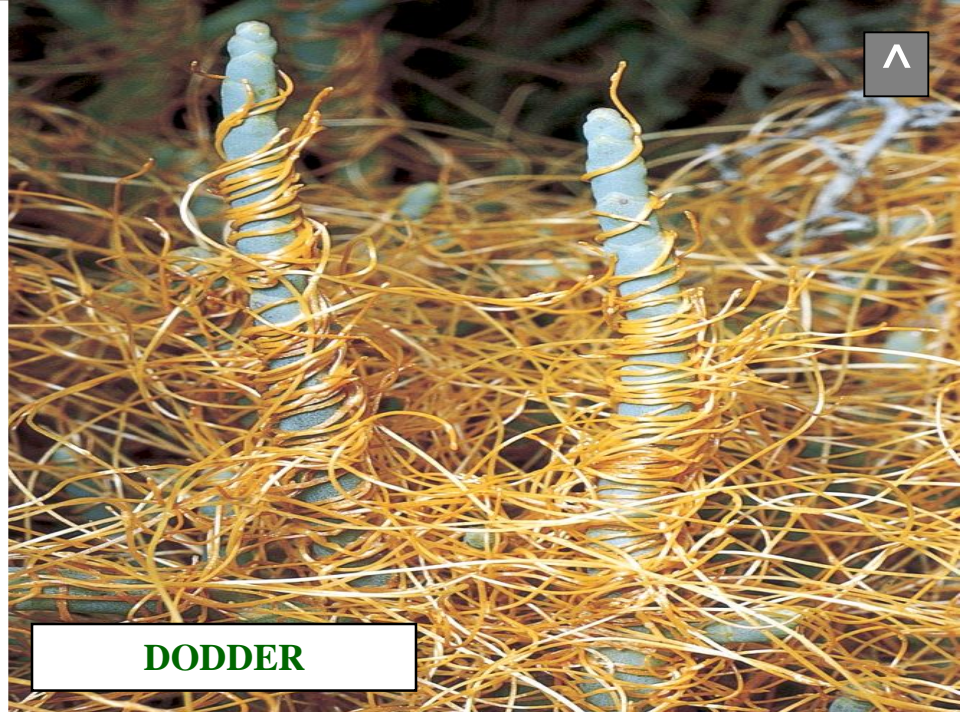




PARASITIC



MISTLETOE



DODDER



INDIAN PIPE



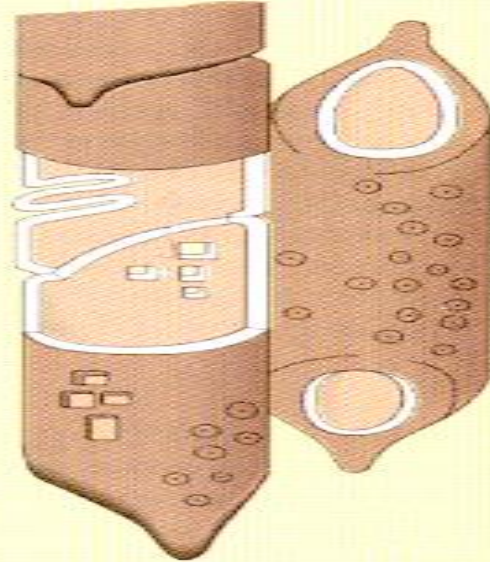
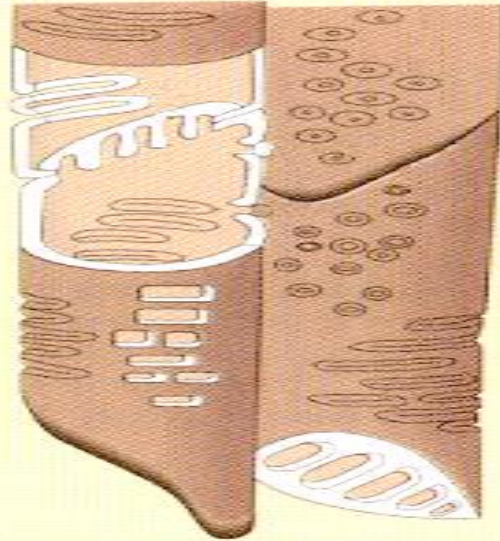
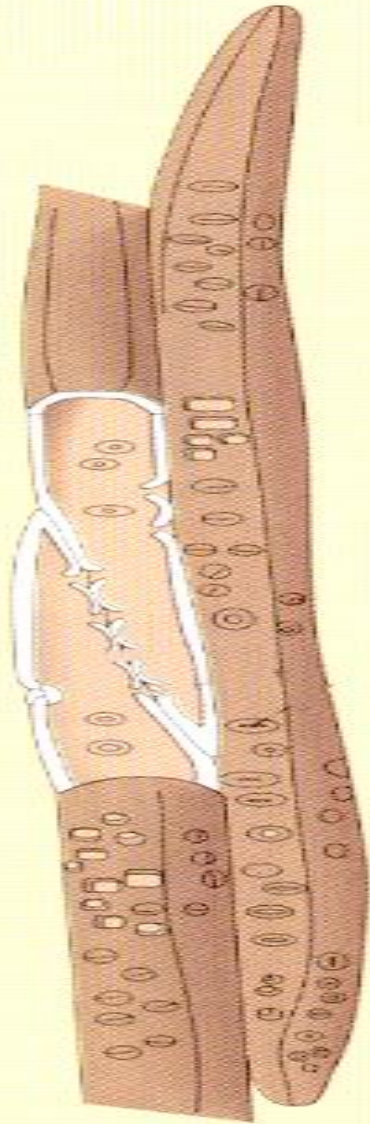
SQUAW ROOT



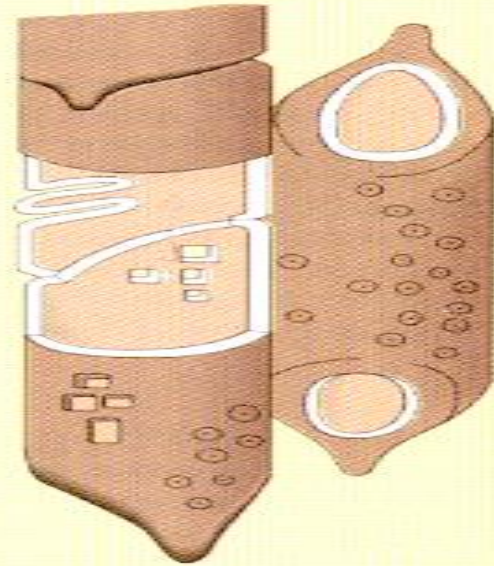
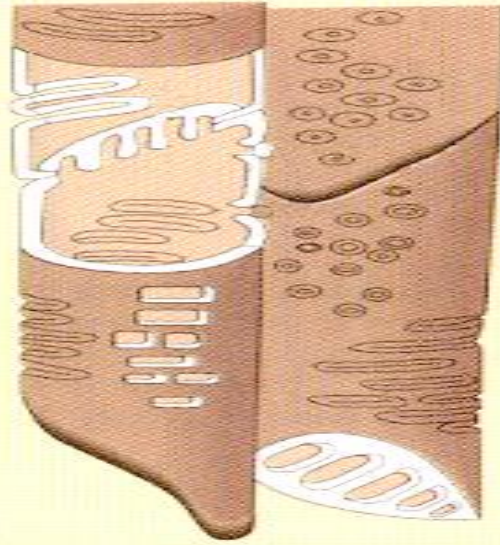
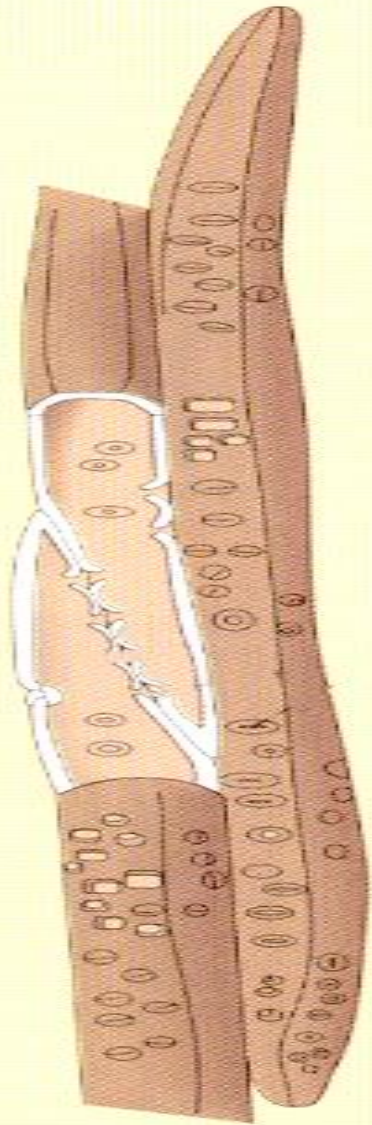
VASCULAR TISSUE



XYLEM



XYLEM CELLS



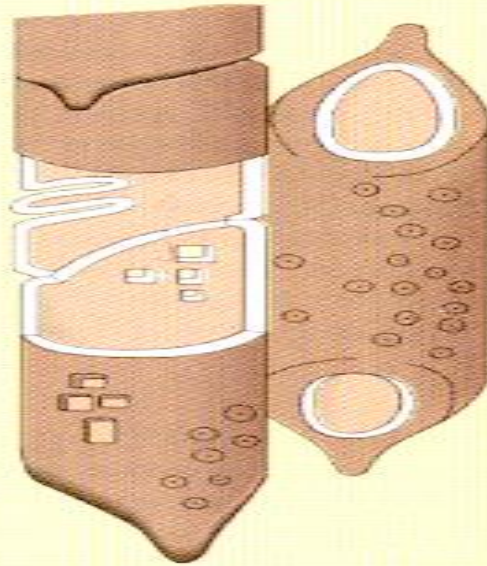
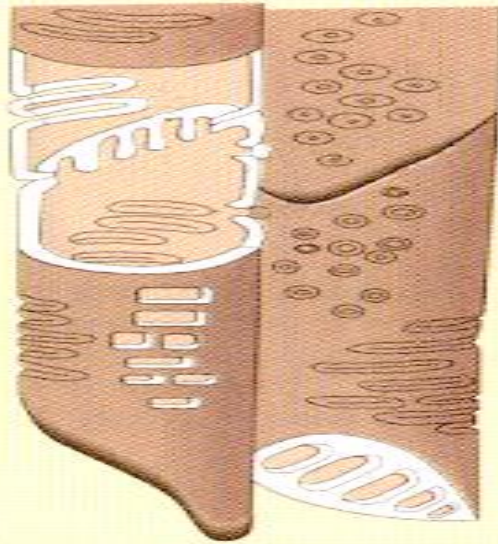
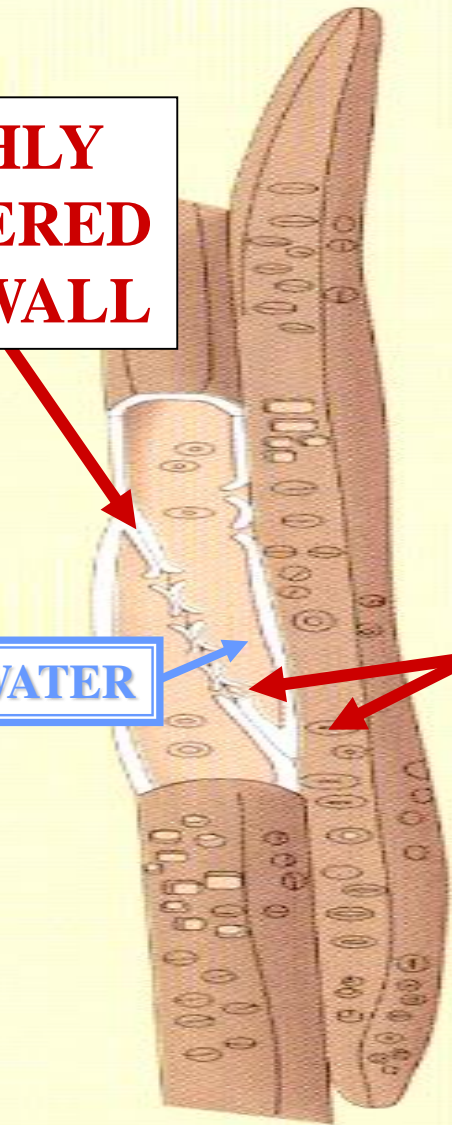
TRACHEARY ELEMENTS

**HIGHLY
TAPPED
END WALL**

WATER

PITS

?

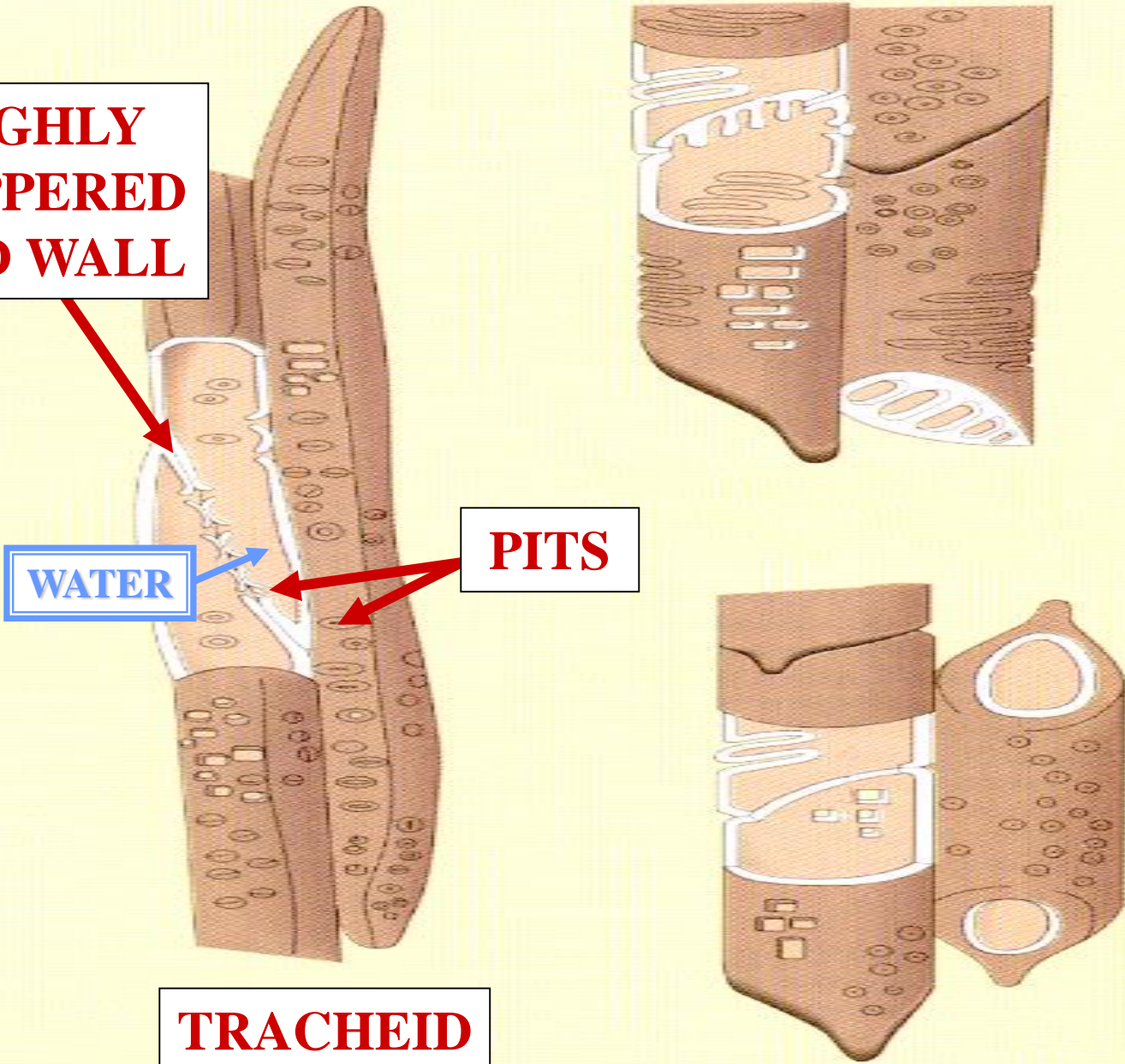


**HIGHLY
TAPPED
END WALL**

WATER

PITS

TRACHEID



**HIGHLY
TAPPED
END WALL**



WATER



PITS



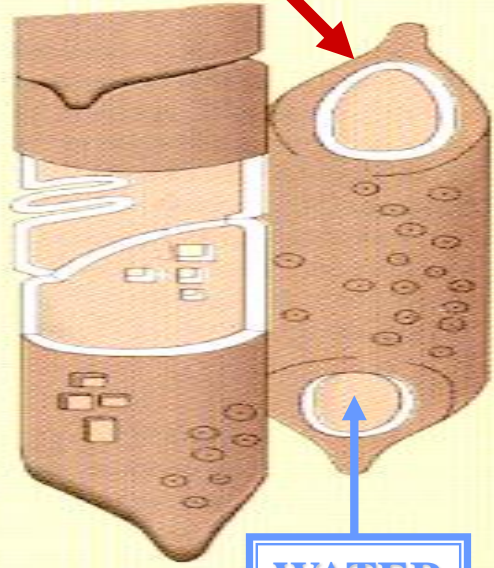
TRACHEID

**LESS
TAPPED
END WALL**



?

PERFORATED PLATE



WATER

