



DICOT ~2 STEM

PHELLODERM

CORK

**CORK
CAMBIUM**

**VASCULAR
CAMBIUM**

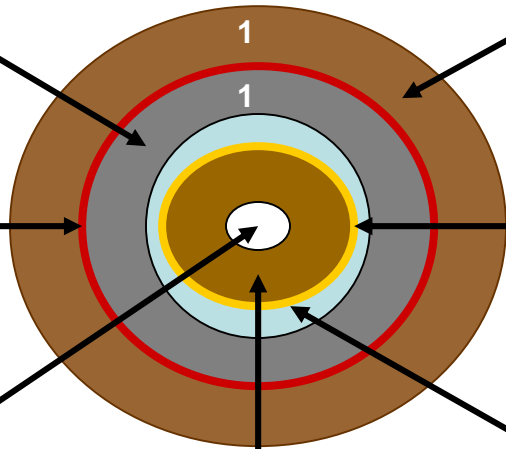
PITH

~2 XYLEM

~2 PHLOEM

CORK CAMBIUM ACTIVITY

C.S.



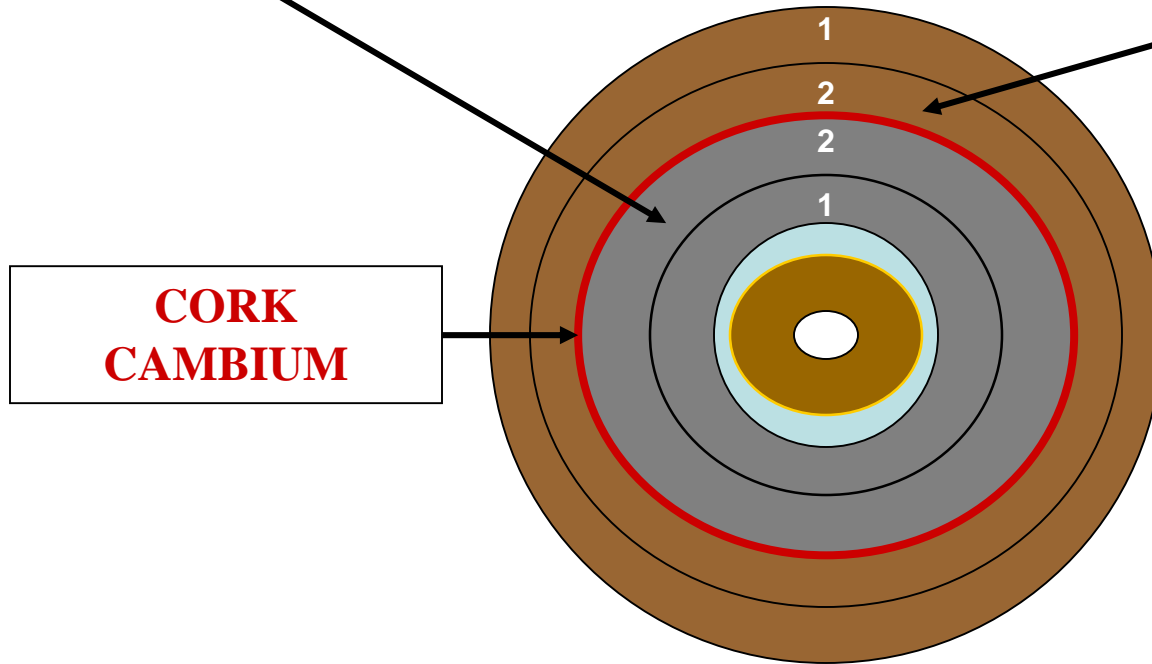
DICOT ~2 STEM

3



PHELLODERM

CORK



**CORK
CAMBIUM**

CORK CAMBIUM ACTIVITY

C.S.

DICOT ~2 STEM

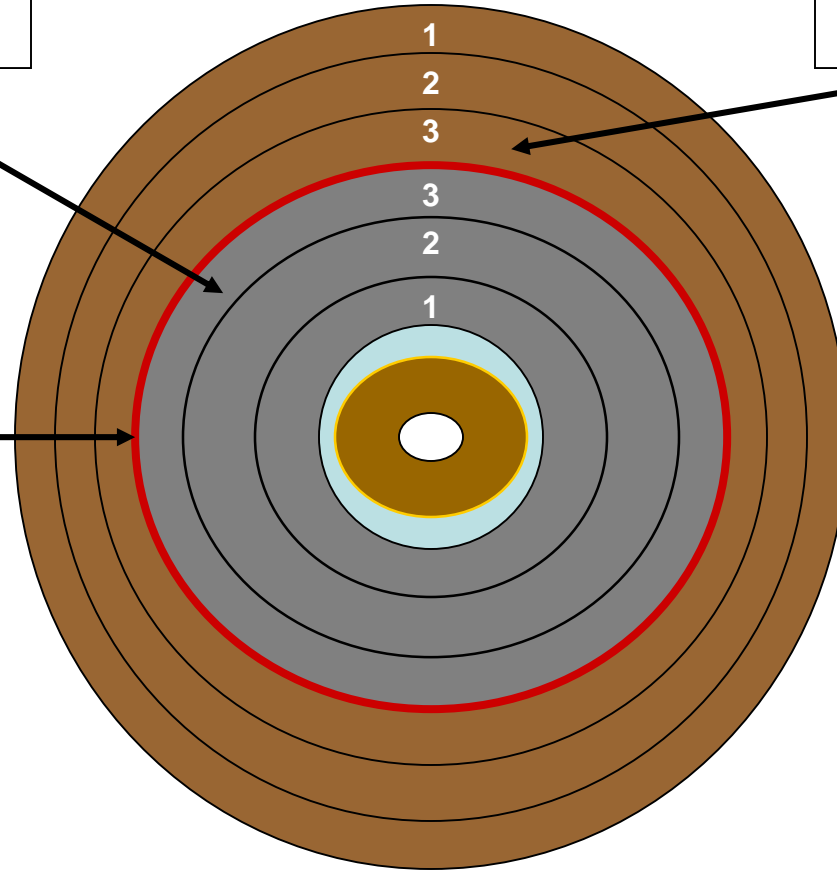
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PHELLODERM

CORK

**CORK
CAMBIUM**

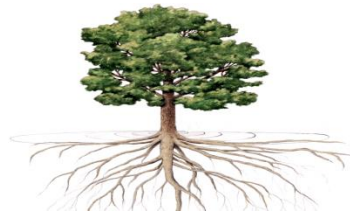


LATERAL MERISTEM

CORK CAMBIUM ACTIVITY

C.S.

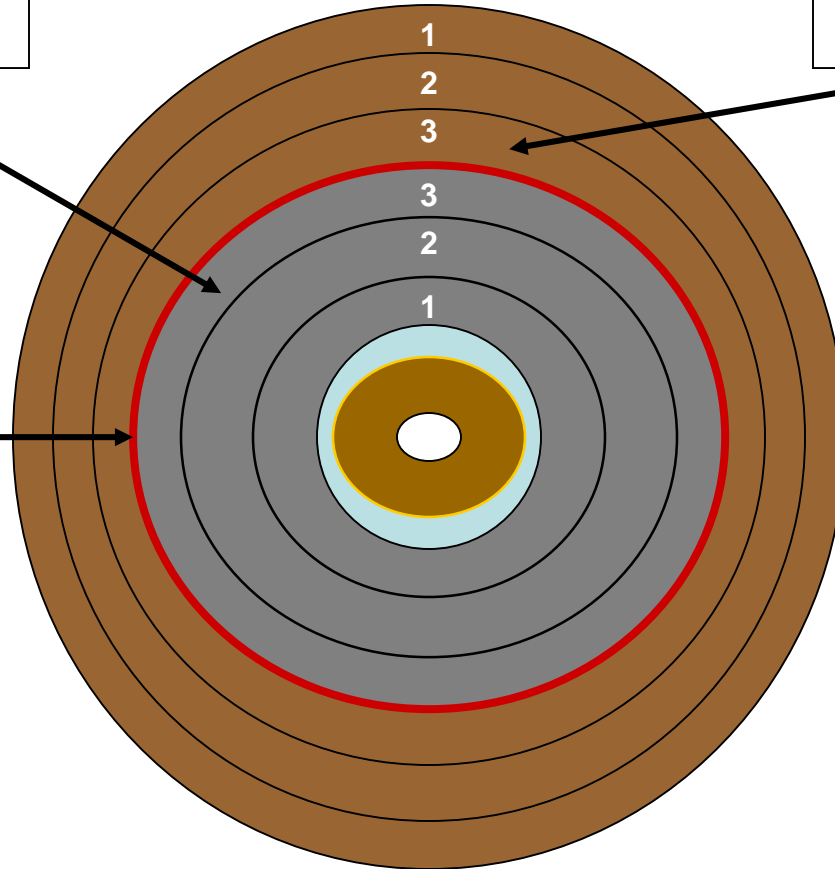
DICOT ~2 STEM



PHELLODERM

CORK

**CORK
CAMBIUM**



INCREASE GIRTH

CORK CAMBIUM ACTIVITY

C.S.



CORK
CAMBIUM
ACTIVITY
SUMMARY

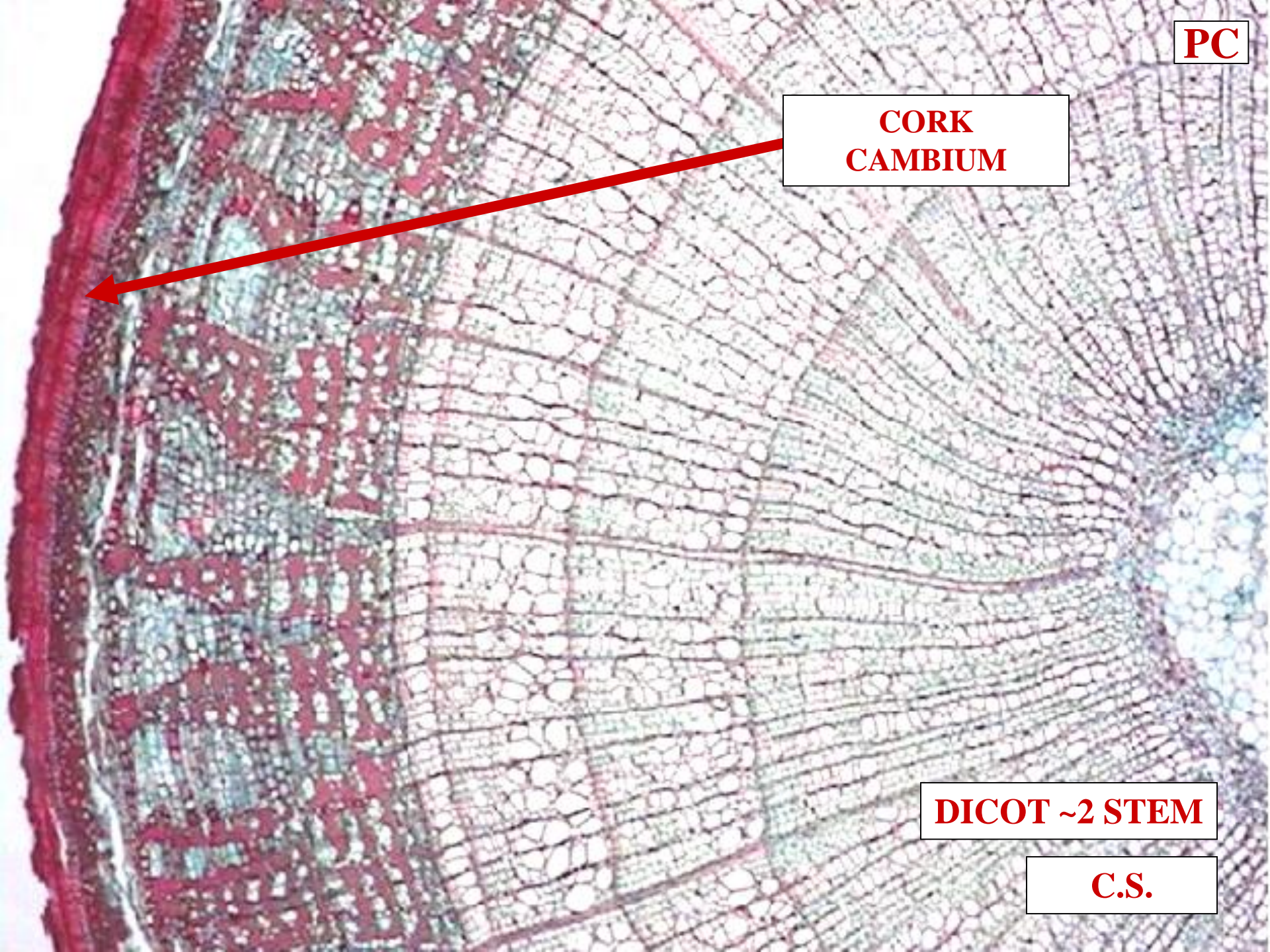
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**CORK
CAMBIUM**



DICOT ~2 STEM

C.S.

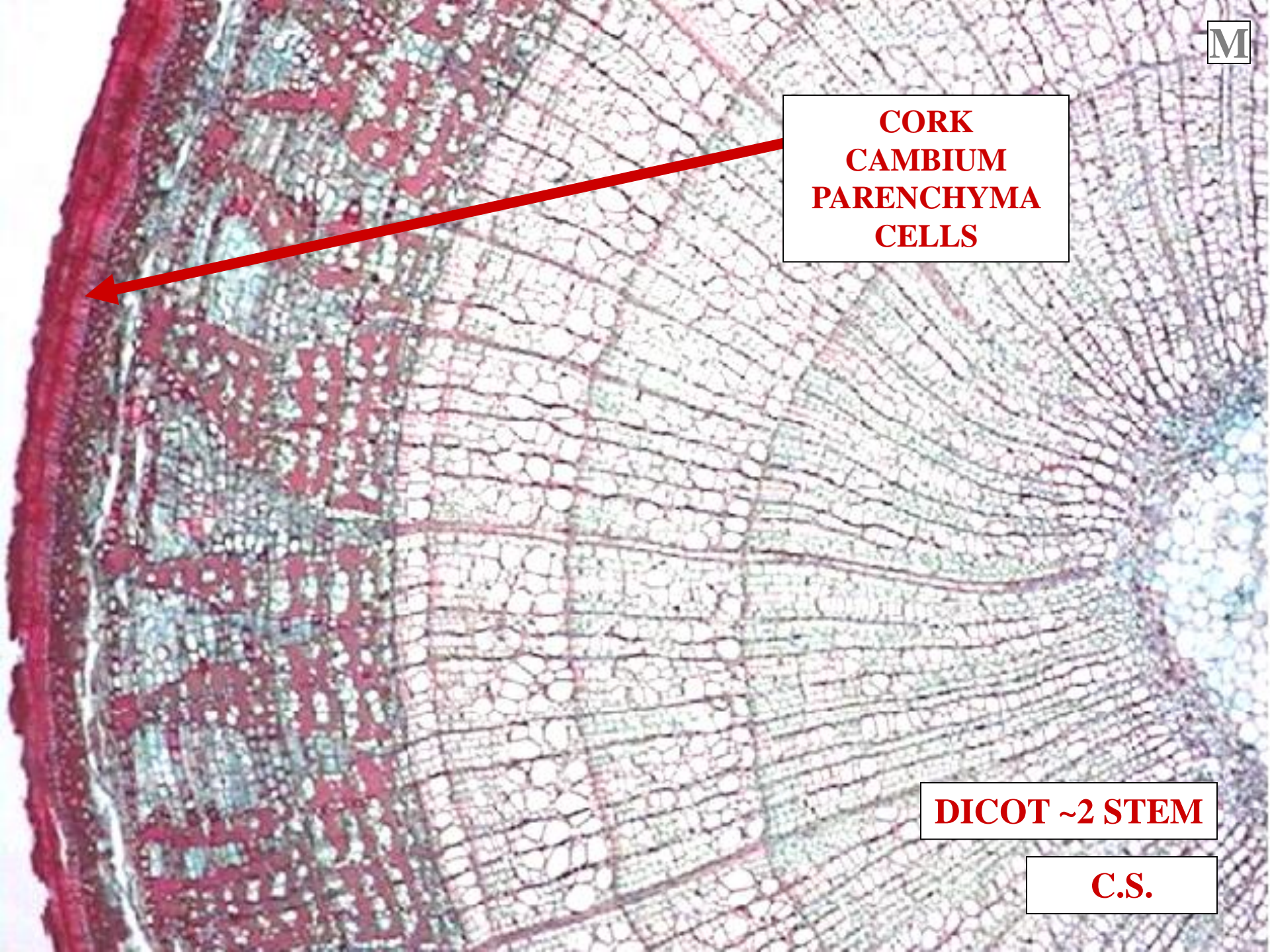


**CORK
CAMBIUM
PARENCHYMA
CELLS**



DICOT ~2 STEM

C.S.

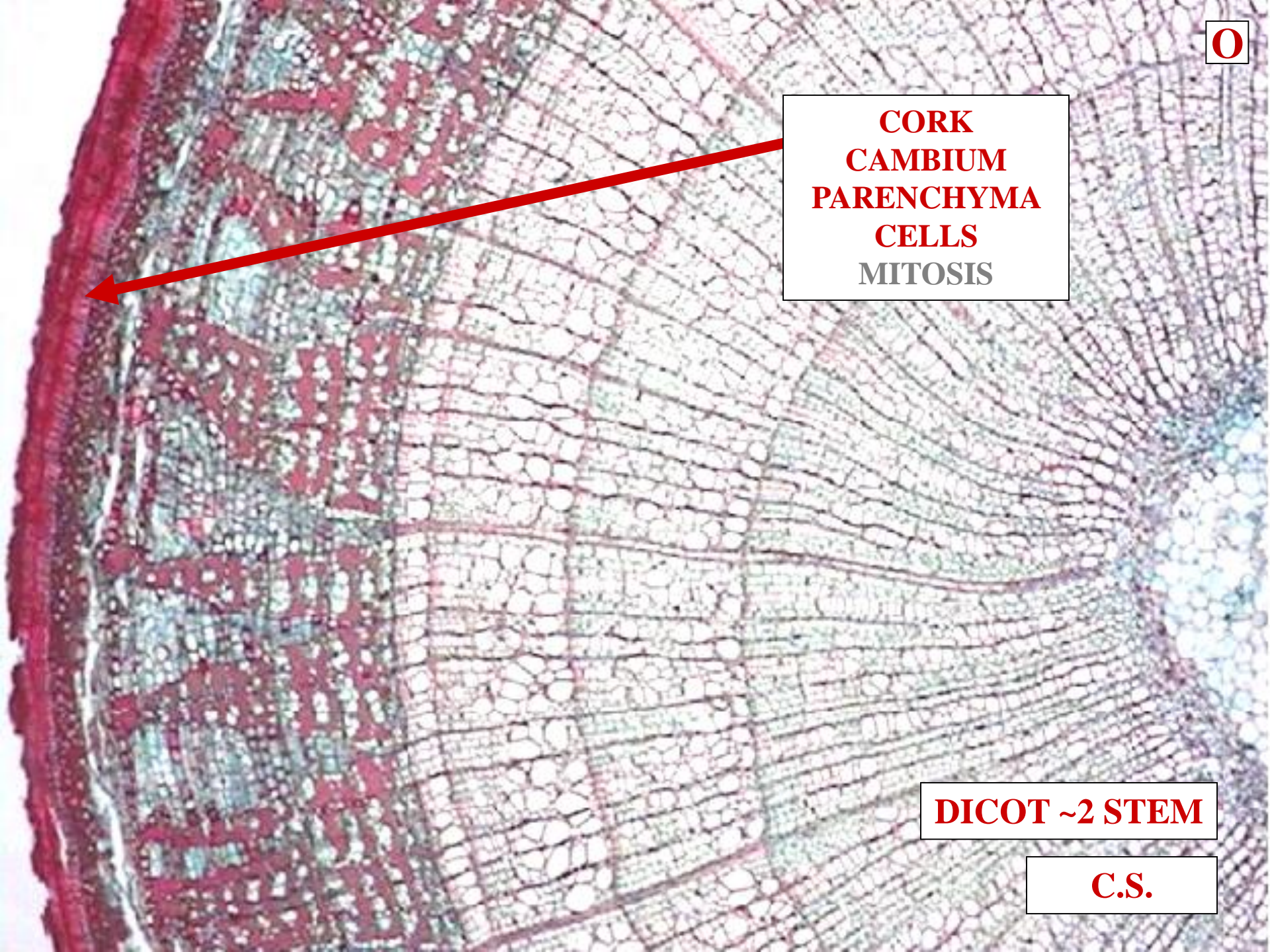


CORK
CAMBIUM
PARENCHYMA
CELLS
MITOSIS



DICOT ~2 STEM

C.S.



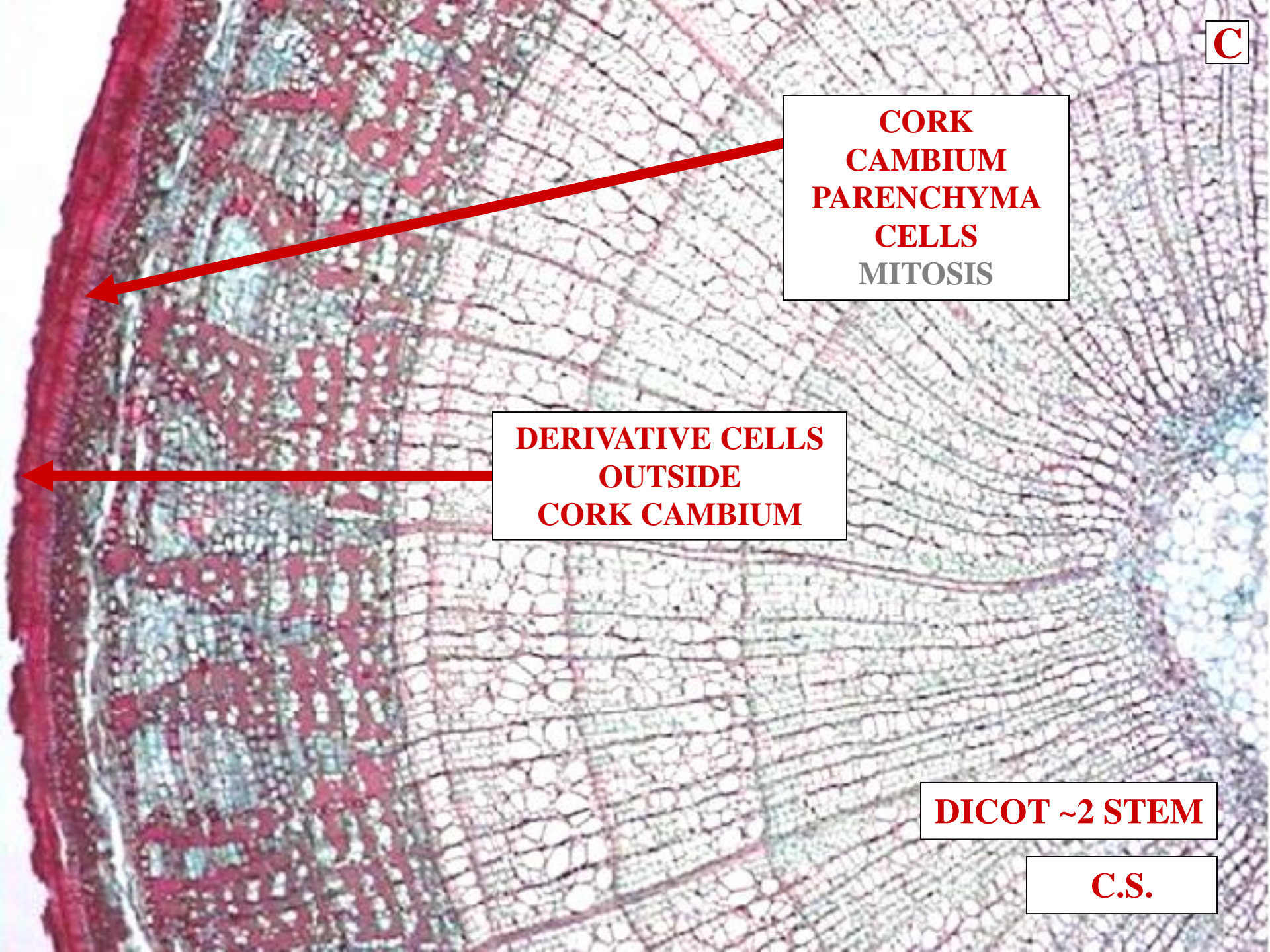
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**CORK
CAMBIUM
PARENCHYMA
CELLS
MITOSIS**

**DERIVATIVE CELLS
OUTSIDE
CORK CAMBIUM**

DICOT ~2 STEM

C.S.



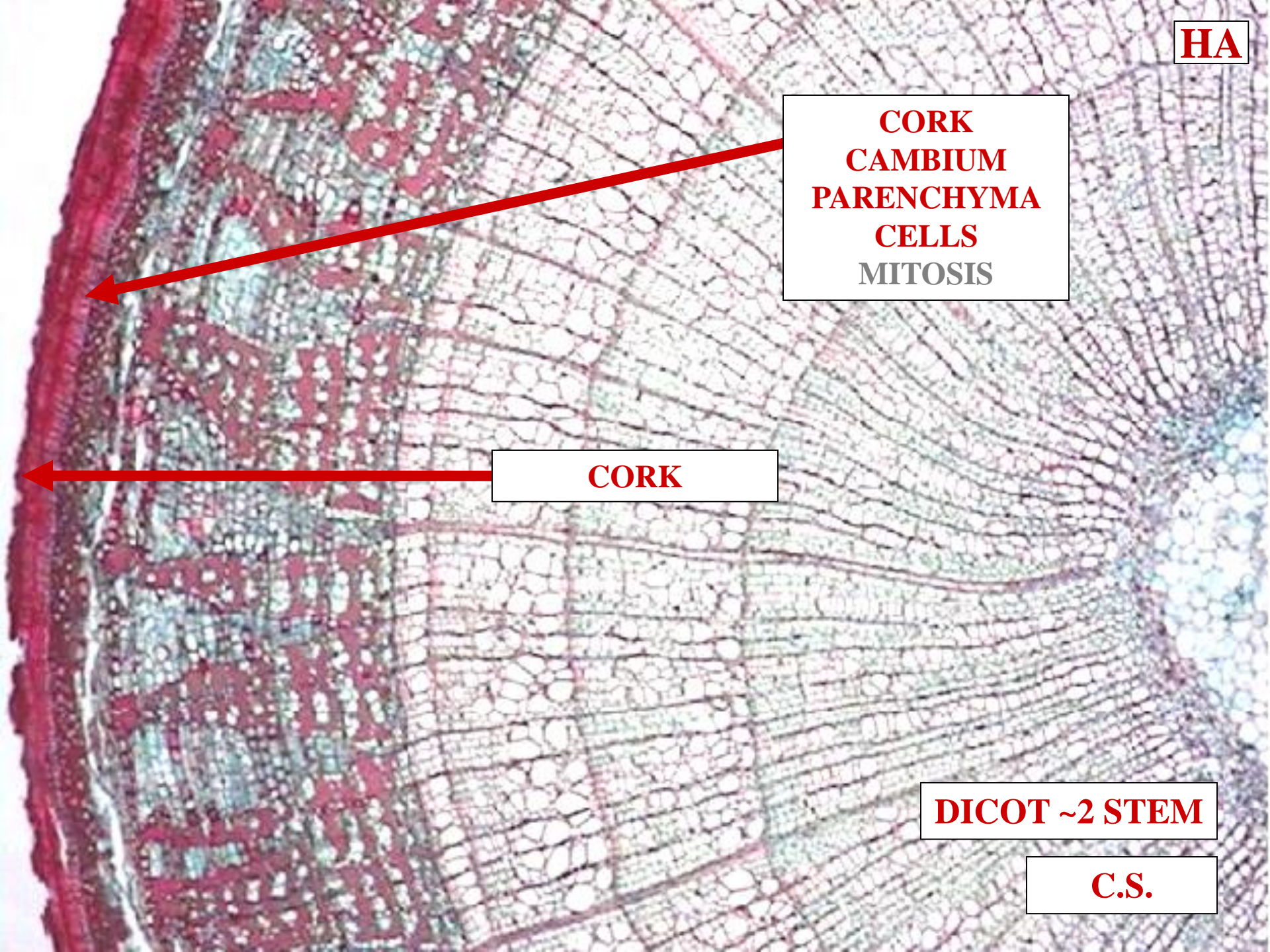
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**CORK
CAMBIUM
PARENCHYMA
CELLS
MITOSIS**

CORK

DICOT ~2 STEM

C.S.

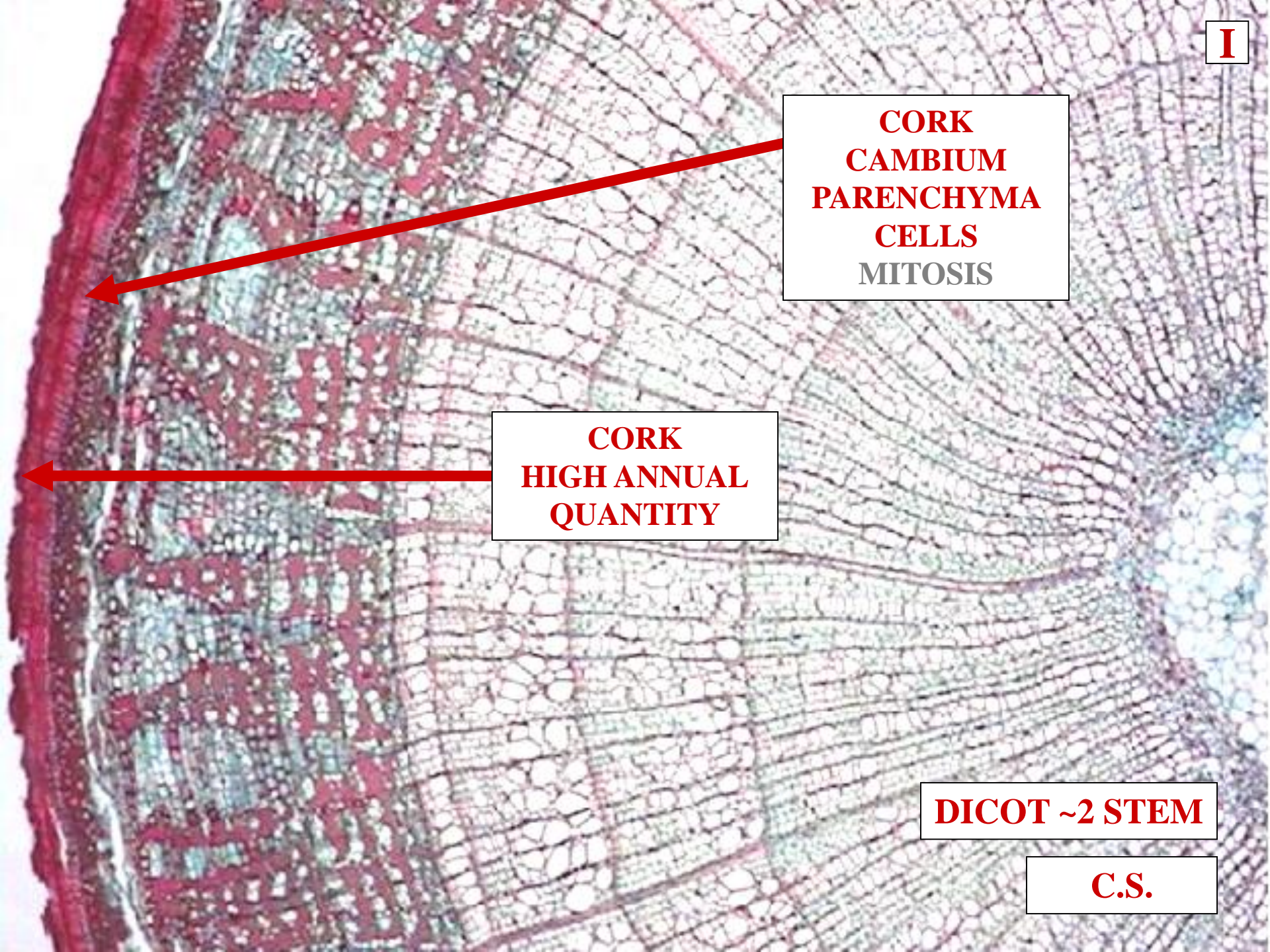


**CORK
CAMBIUM
PARENCHYMA
CELLS
MITOSIS**

**CORK
HIGH ANNUAL
QUANTITY**

DICOT ~2 STEM

C.S.



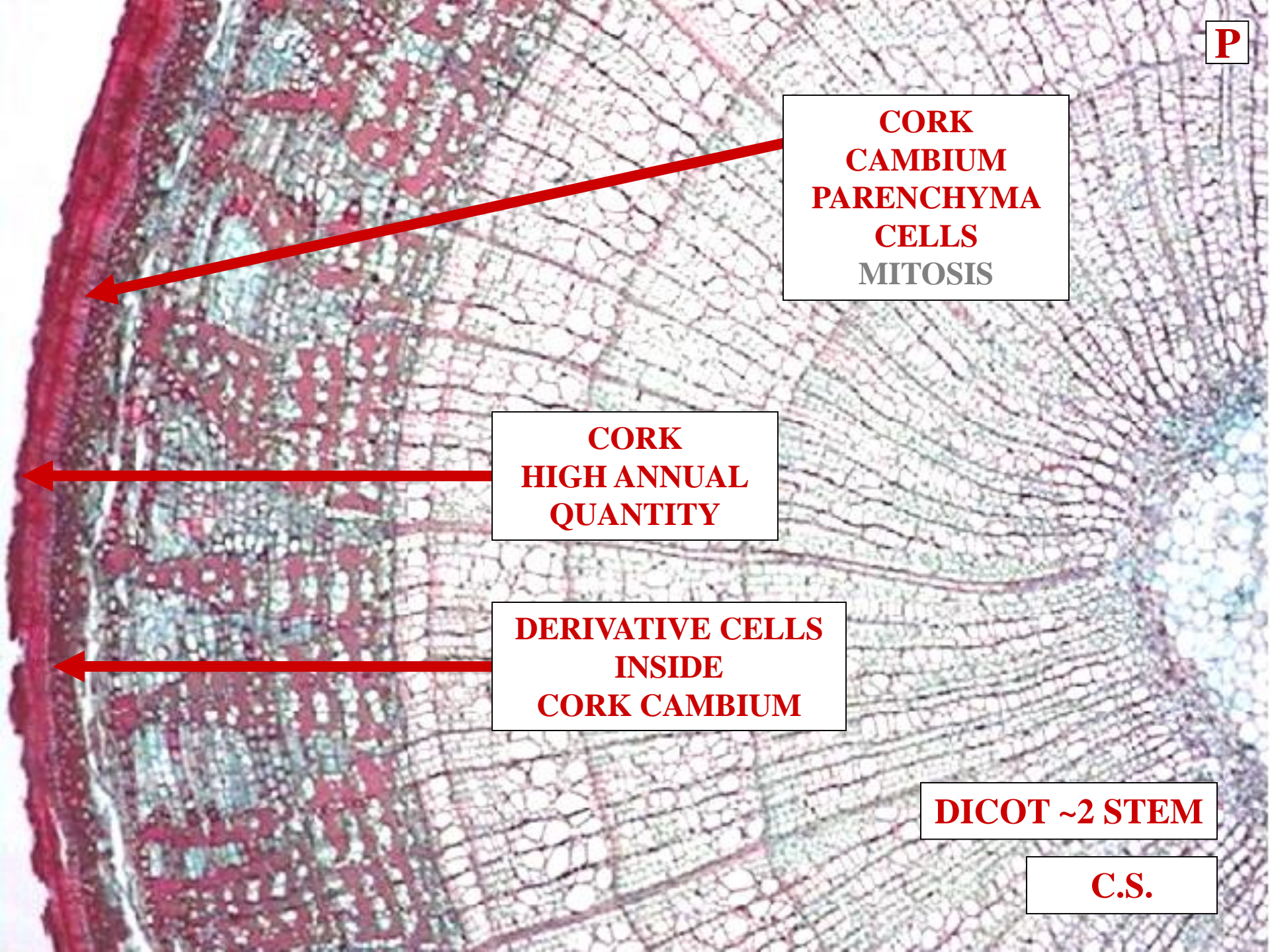
**CORK
CAMBIUM
PARENCHYMA
CELLS
MITOSIS**

**CORK
HIGH ANNUAL
QUANTITY**

**DERIVATIVE CELLS
INSIDE
CORK CAMBIUM**

DICOT ~2 STEM

C.S.



LA

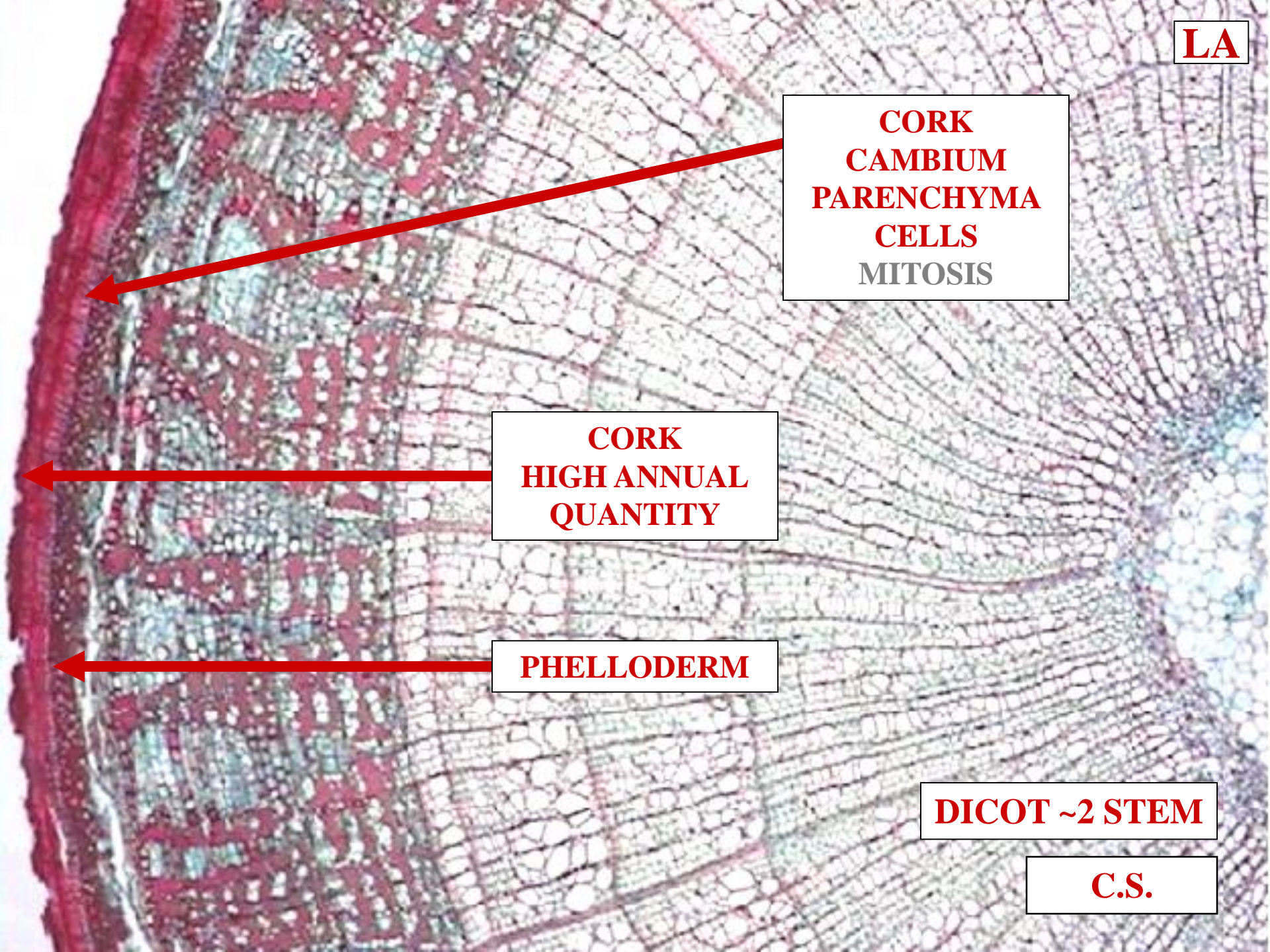
**CORK
CAMBIUM
PARENCHYMA
CELLS
MITOSIS**

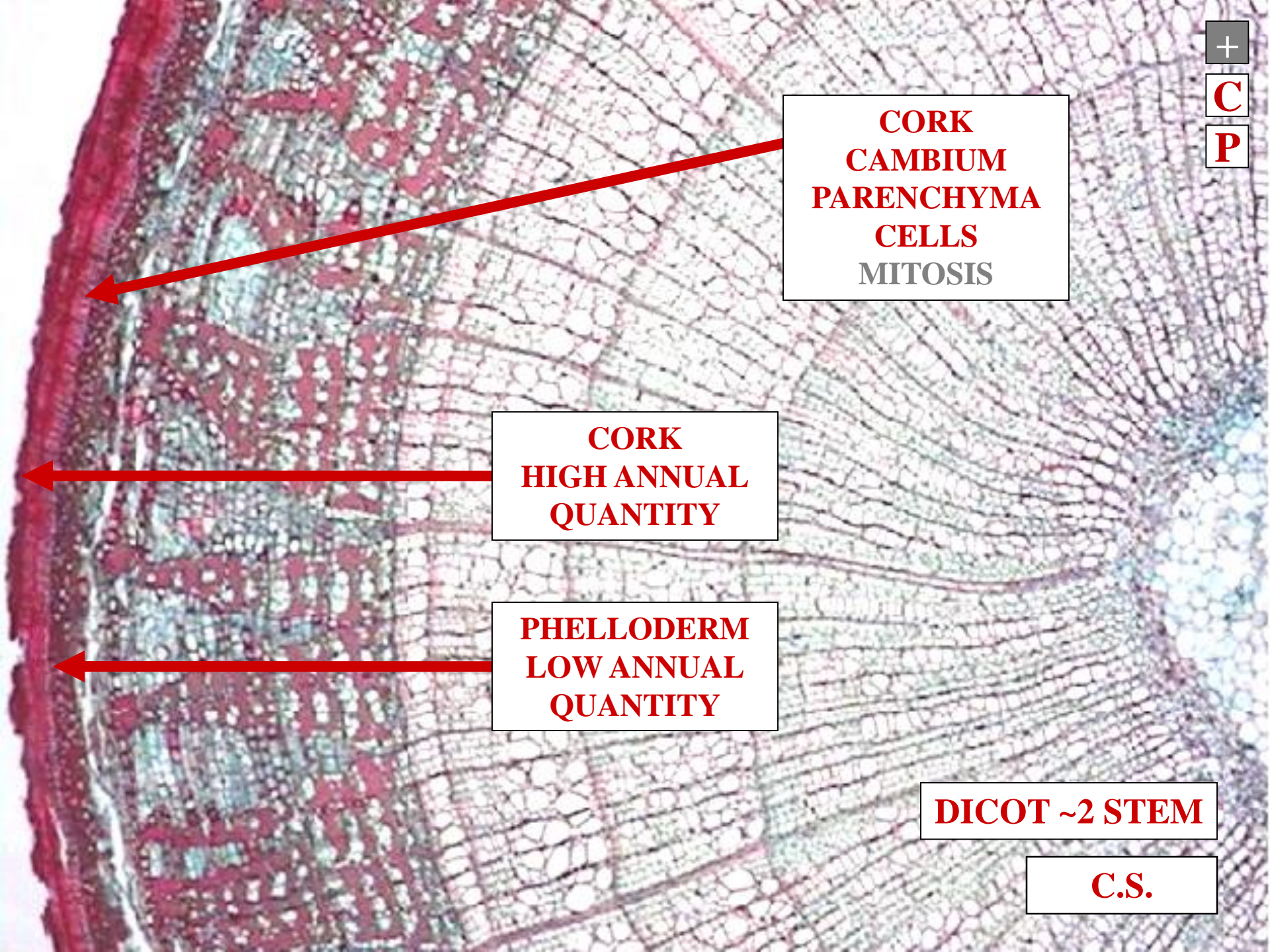
**CORK
HIGH ANNUAL
QUANTITY**

PHELLODERM

DICOT ~2 STEM

C.S.





+

C

P

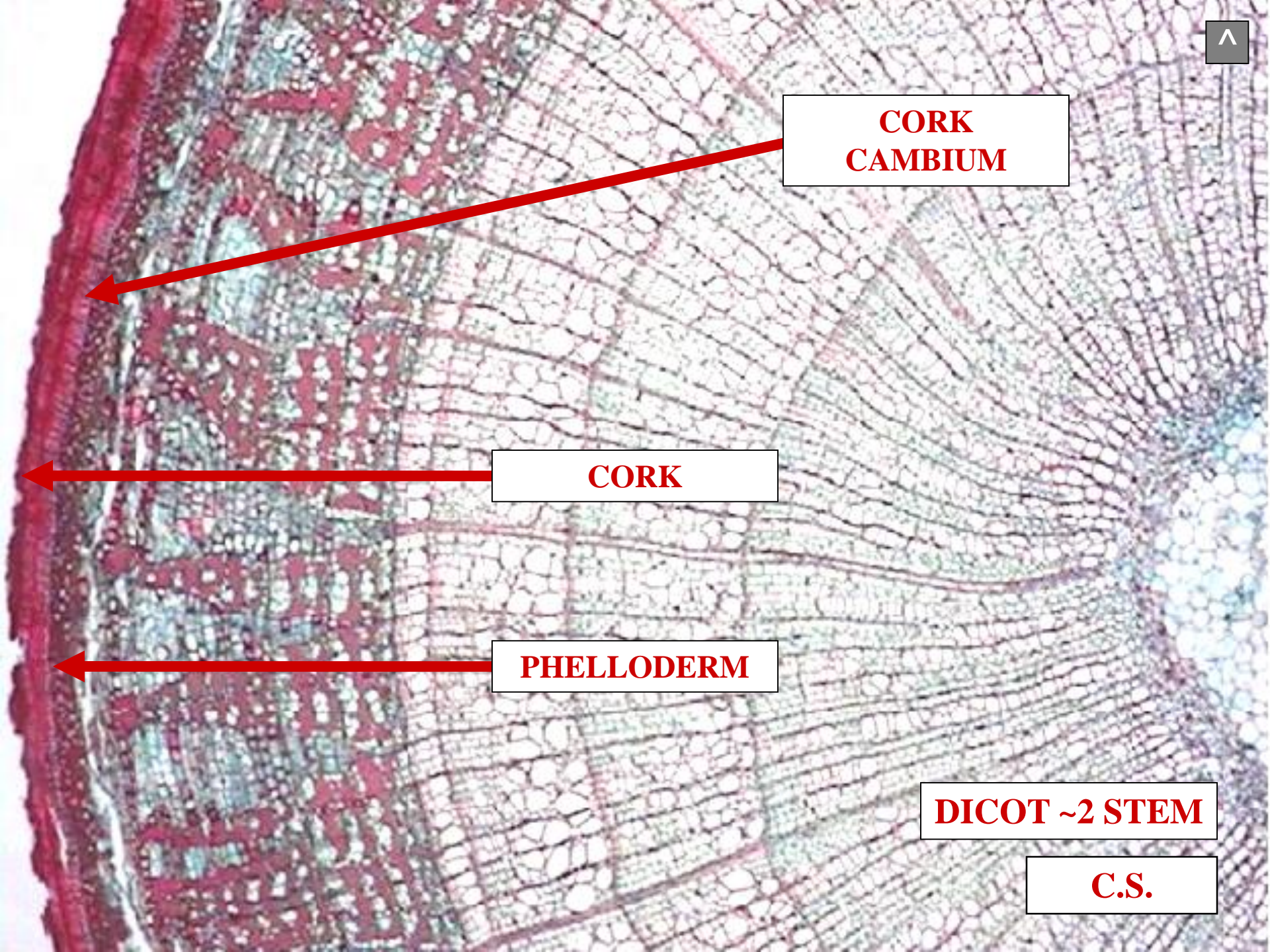
CORK
CAMBIUM
PARENCHYMA
CELLS
MITOSIS

CORK
HIGH ANNUAL
QUANTITY

PHELLODERM
LOW ANNUAL
QUANTITY

DICOT ~2 STEM

C.S.



**CORK
CAMBIUM**



CORK



PHELLODERM



DICOT ~2 STEM

C.S.

CORK
VS
PHELLODERM

CORK

SECONDARY GROWTH CORK



DERIVED OUTSIDE CORK CAMBIUM

SECONDARY GROWTH
CORK

SECONDARY GROWTH CORK



DERIVED OUTSIDE CORK CAMBIUM

CONSISTS PARENCHYMA CELLS

SECONDARY GROWTH
CORK

SECONDARY GROWTH CORK



DERIVED OUTSIDE CORK CAMBIUM

CONSISTS PARENCHYMA CELLS

HIGH SUBERIN CONTENT

SECONDARY GROWTH CORK

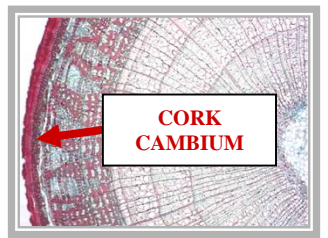


OUTSIDE

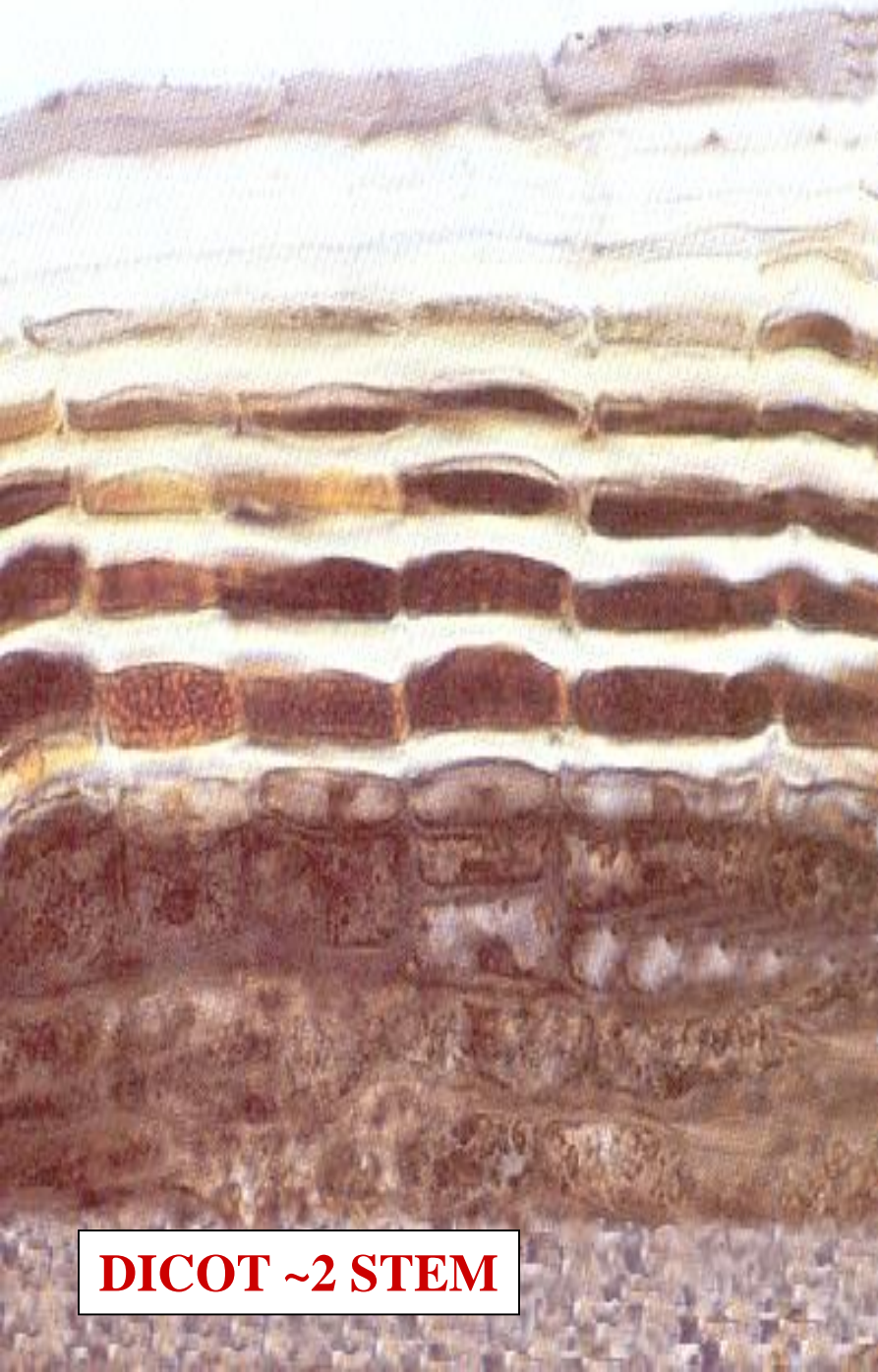
**CORK
CAMBIUM**

INSIDE

DICOT ~2 STEM



C.S.

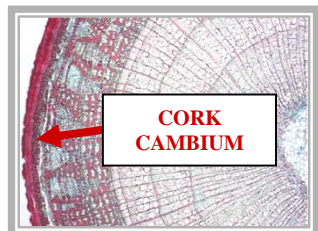


CORK

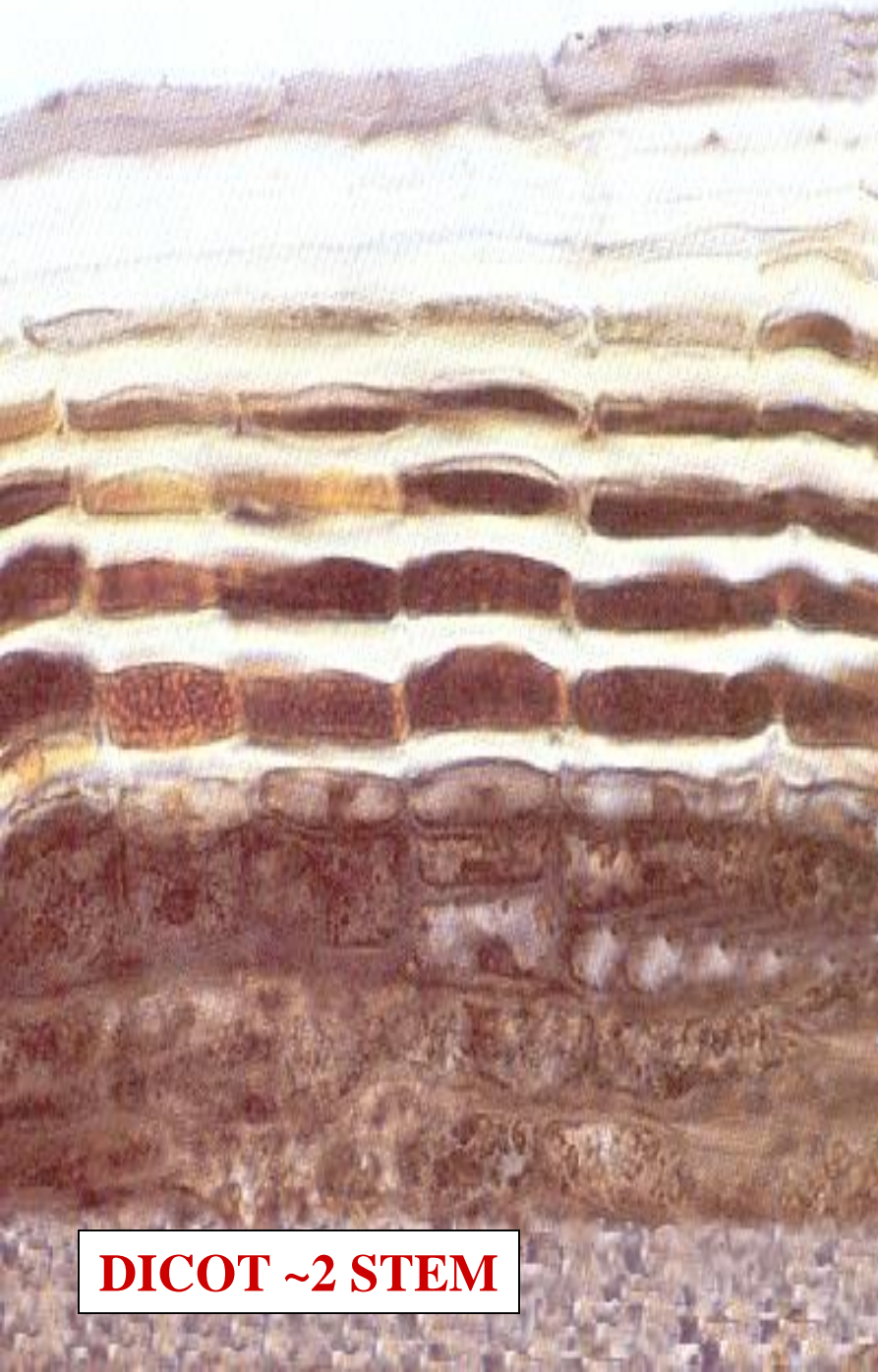
**CORK
CAMBIUM**

INSIDE

DICOT ~2 STEM



C.S.

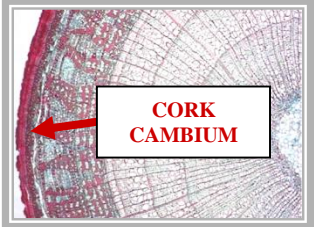


**PARENCHYMA
CELLS**

**CORK
CAMBIUM**

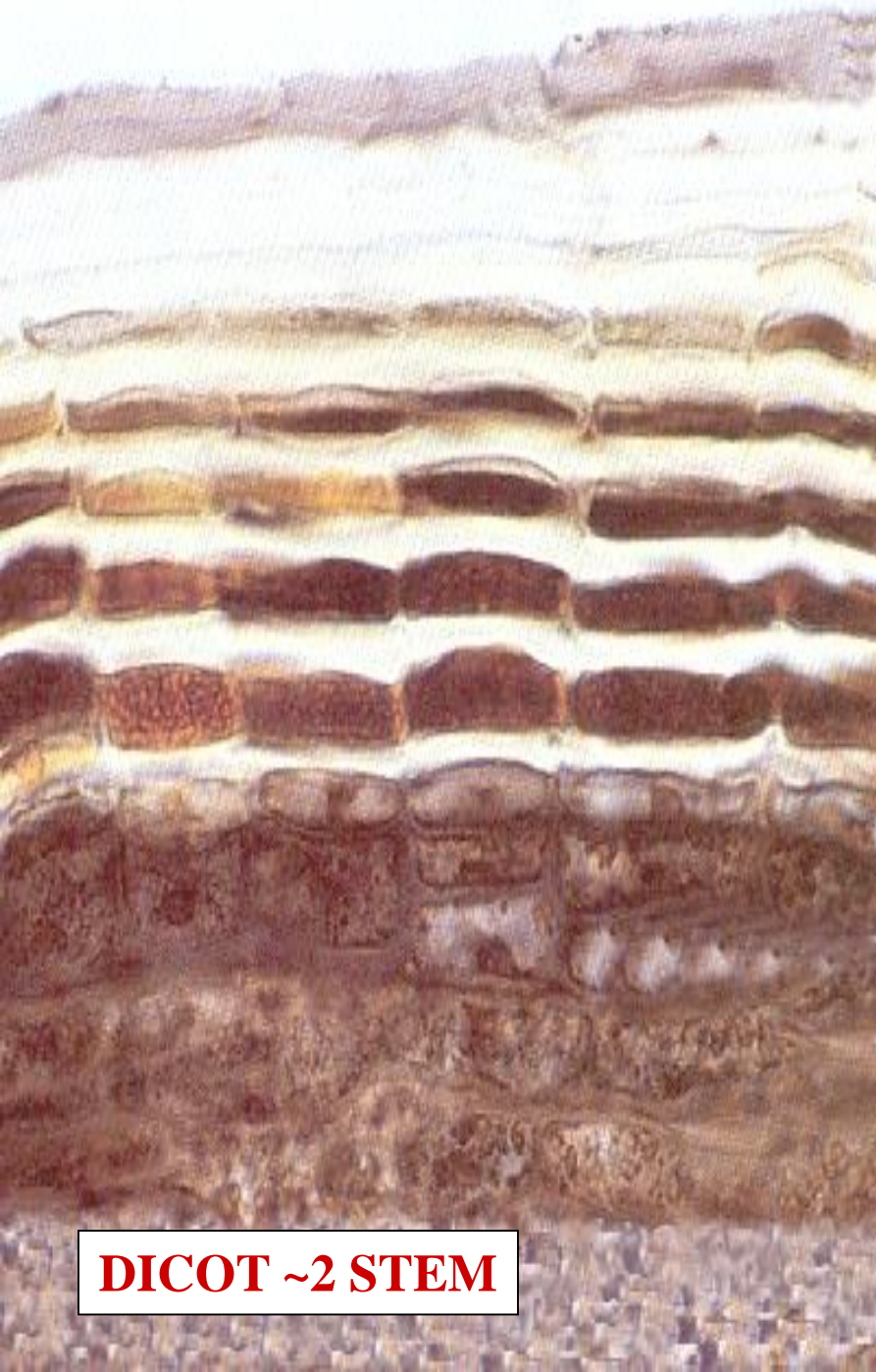
INSIDE

DICOT ~2 STEM



**CORK
CAMBIUM**

C.S.

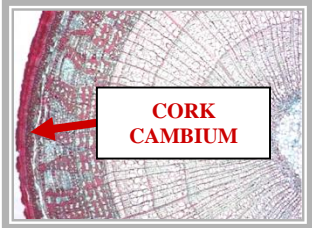


**HIGH SUBERIN
CONTENT**

**CORK
CAMBIUM**

INSIDE

DICOT ~2 STEM



C.S.

PHELLODERM

SECONDARY GROWTH PHELLODERM



DERIVED INSIDE CORK CAMBIUM

SECONDARY GROWTH
PHELLODERM

SECONDARY GROWTH PHELLODERM



DERIVED INSIDE CORK CAMBIUM

CONSISTS PARENCHYMA CELLS

**SECONDARY GROWTH
PHELLODERM**

SECONDARY GROWTH PHELLODERM



DERIVED INSIDE CORK CAMBIUM

CONSISTS PARENCHYMA CELLS

LOW SUBERIN CONTENT

SECONDARY GROWTH PHELLODERM

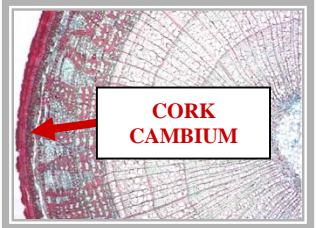


CORK

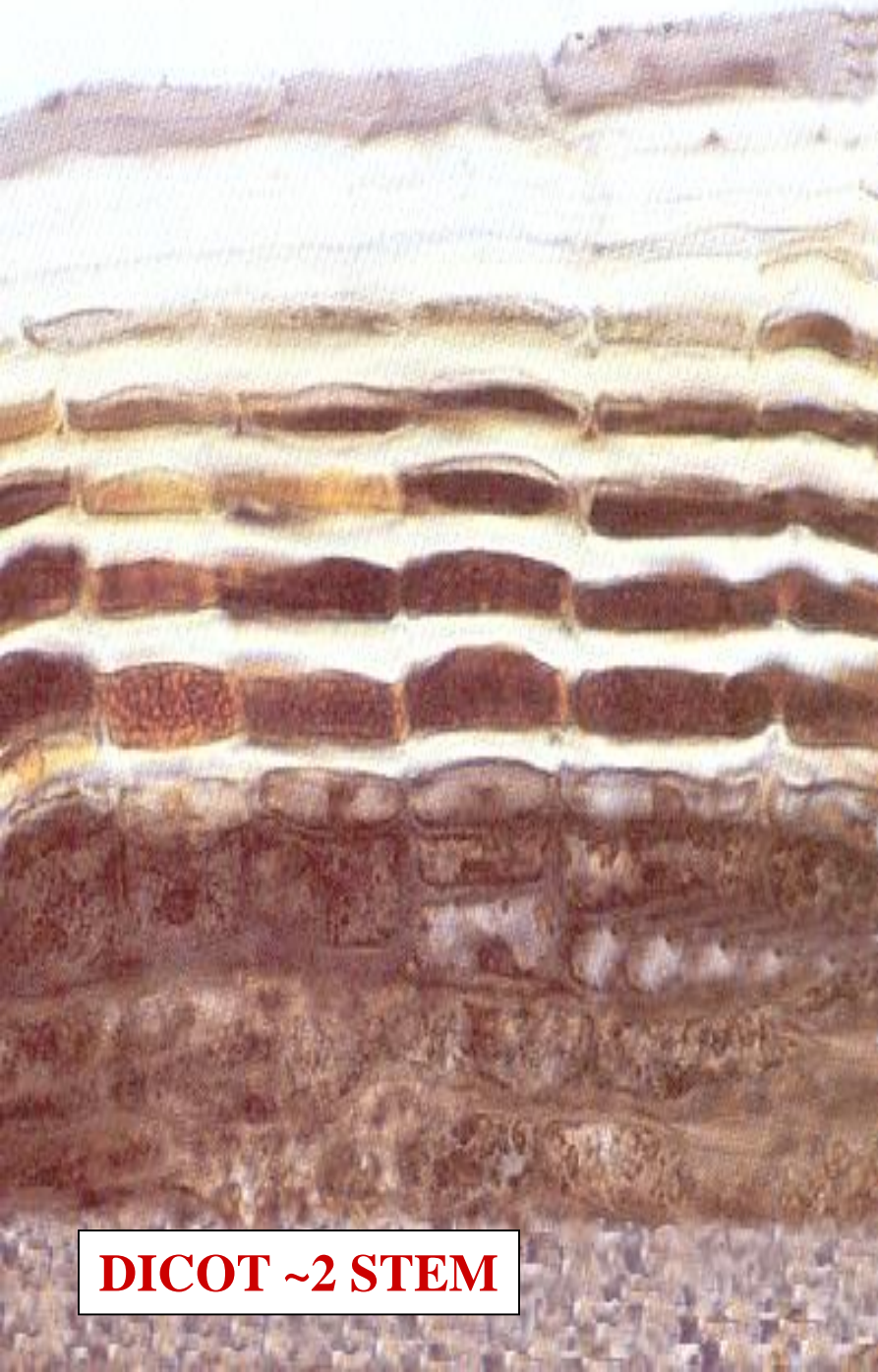
**CORK
CAMBIUM**

INSIDE

DICOT ~2 STEM



C.S.

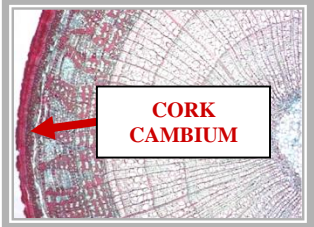


DICOT ~2 STEM

CORK

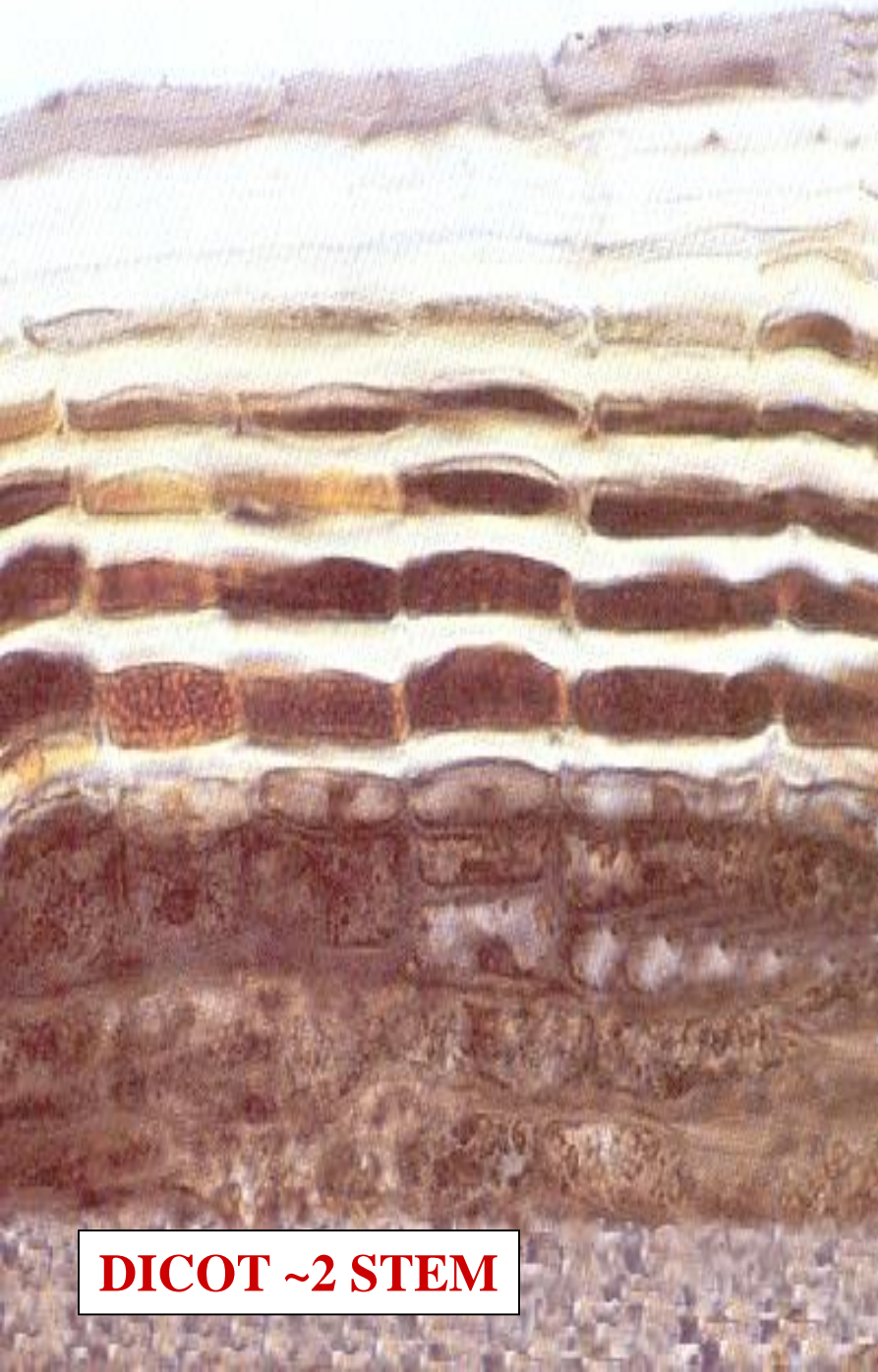
**CORK
CAMBIUM**

PHELLODERM



**CORK
CAMBIUM**

C.S.

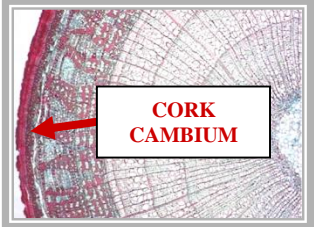


DICOT ~2 STEM

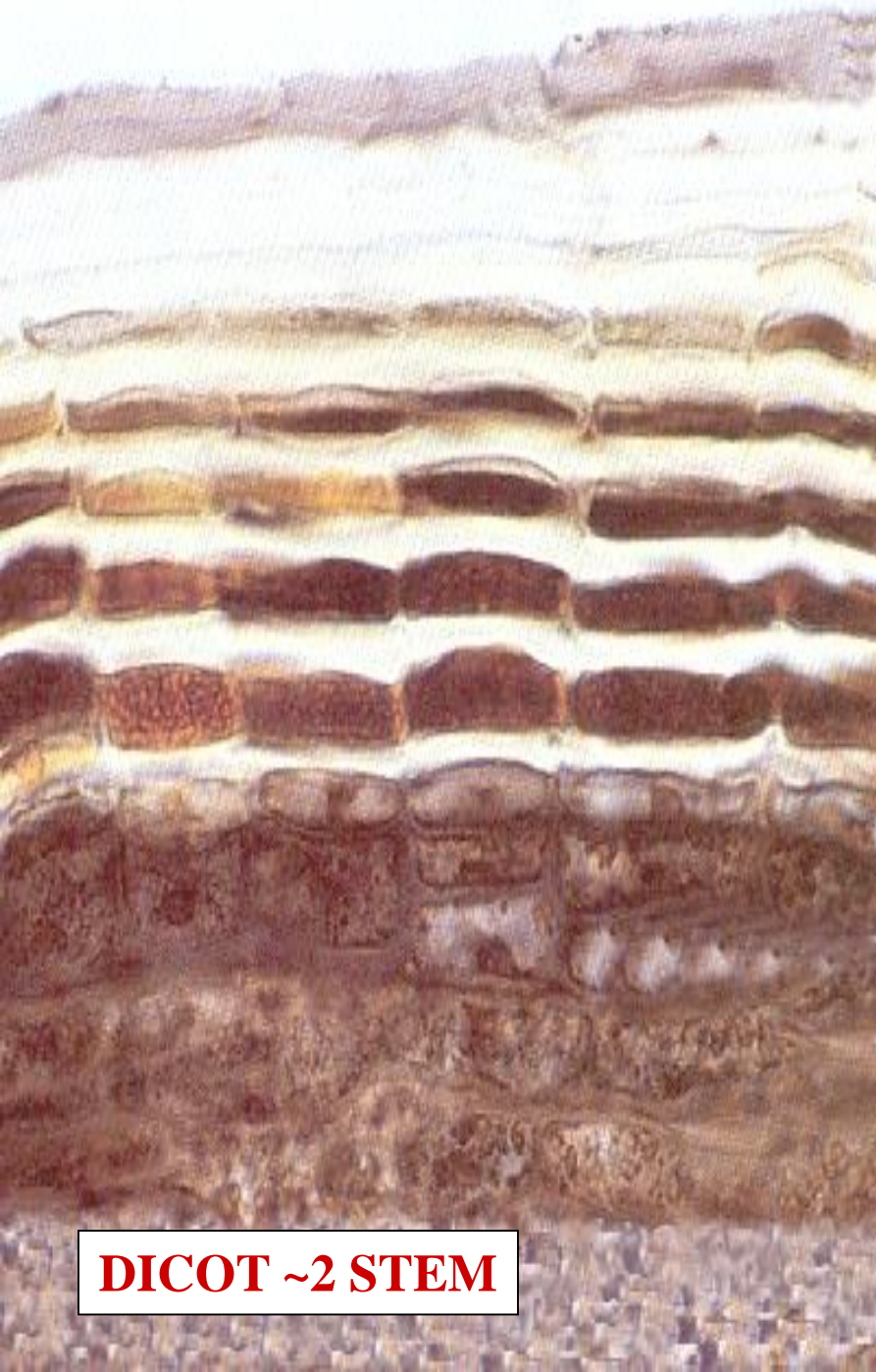
CORK

**CORK
CAMBIUM**

**PARENCHYMA
CELLS**



C.S.

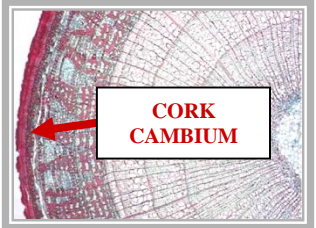


CORK

**CORK
CAMBIUM**

**LOW SUBERIN
CONTENT**

DICOT ~2 STEM



**CORK
CAMBIUM**

C.S.

SUBERIN



SUBERIN

WAX-LIKE SUBSTANCE

SUBERIN

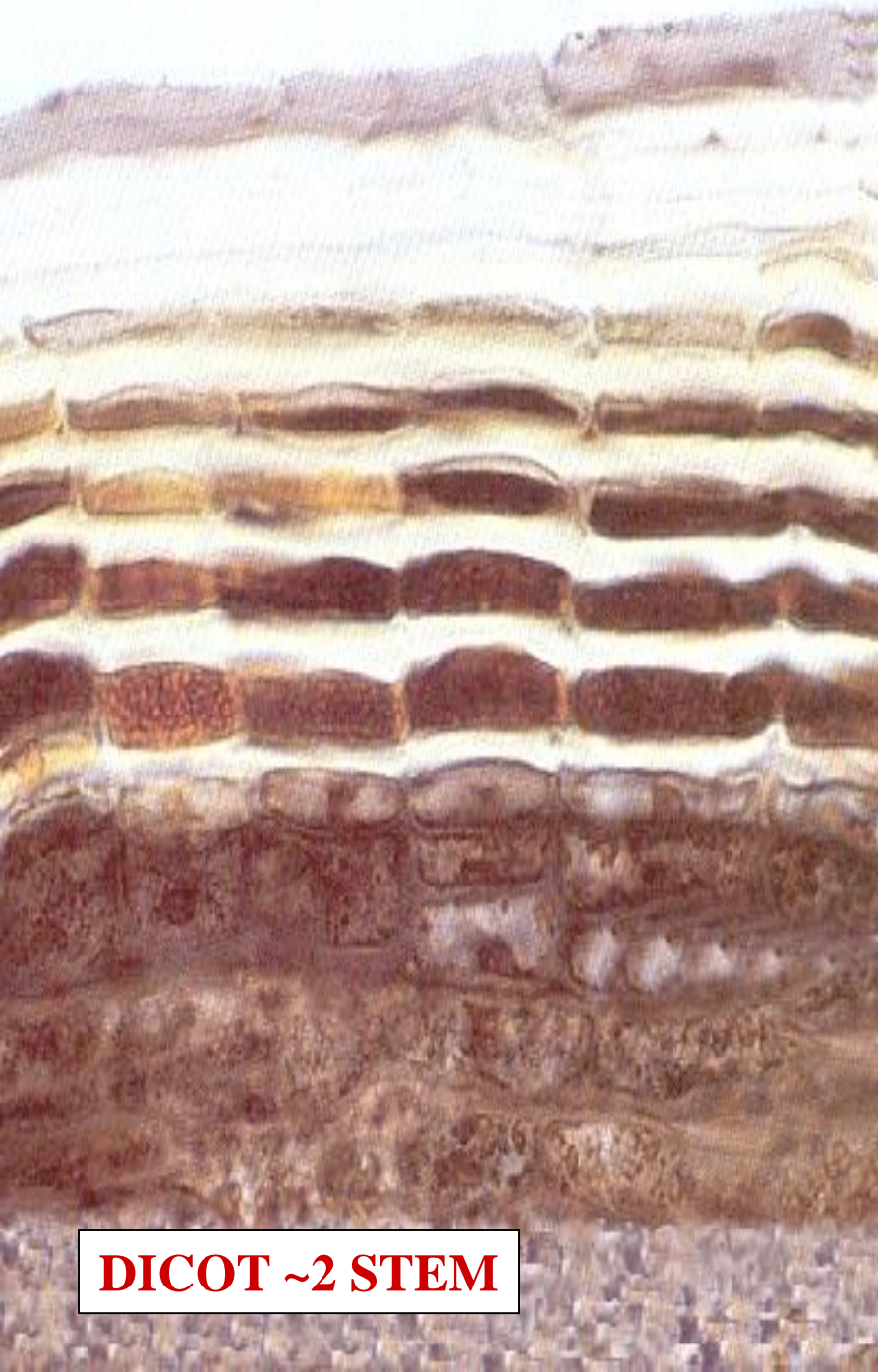
SUBERIN



WAX-LIKE SUBSTANCE

INHIBITS WATER LOSS

SUBERIN

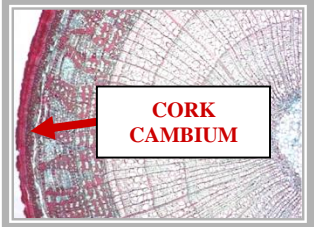


CORK

**CORK
CAMBIUM**

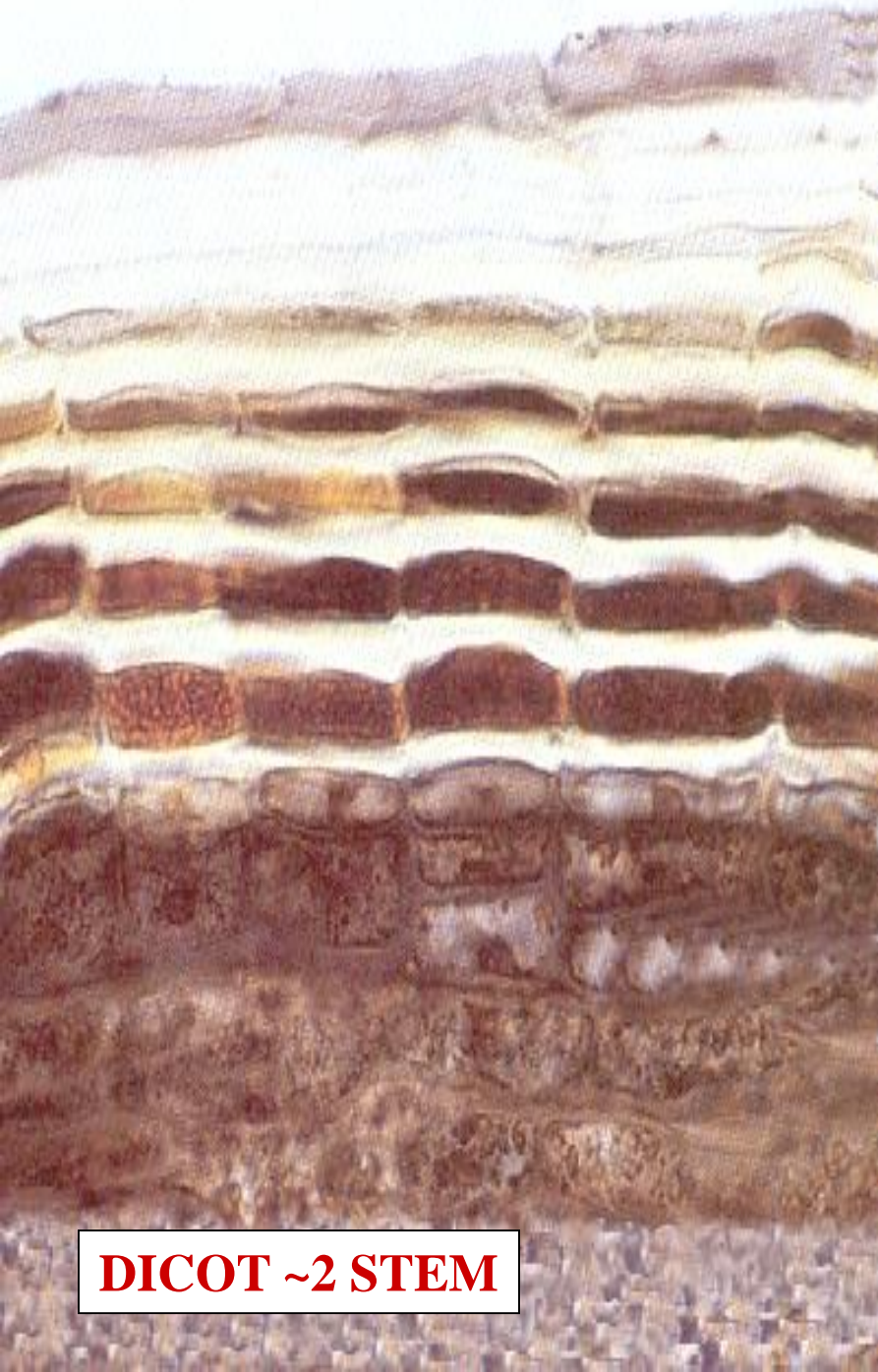
PELLODERM

DICOT ~2 STEM



**CORK
CAMBIUM**

C.S.

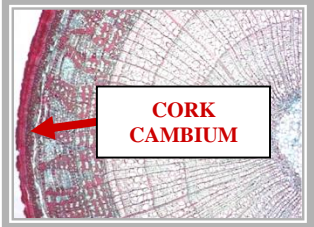


CORK
HIGH SUBERIN
CONTENT
WHITE SUBSTANCE

CORK
CAMBIUM

PHELLODERM

DICOT ~2 STEM



CORK
CAMBIUM

C.S.

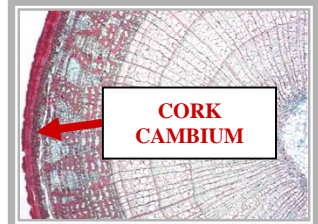


CORK
HIGH SUBERIN
CONTENT
WHITE SUBSTANCE

CORK
CAMBIUM

PHELLODERM
LOW SUBERIN
CONTENT
WHITE SUBSTANCE

DICOT ~2 STEM



CORK
CAMBIUM

C.S.

PERIDERM

PERIDERM

PERIDERM



PHELLODERM

PERIDERM

PERIDERM



**PHELLODERM
&
CORK CAMBIUM**

PERIDERM

PERIDERM



PHELLODERM
&
CORK CAMBIUM
&
CORK

PERIDERM

PERIDERM
PHELLODERM
&
CORK CAMBIUM
&
CORK

COLLECTIVELY
PERIDERM



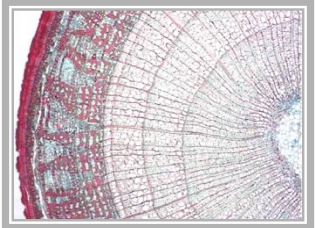


DICOT ~2 STEM

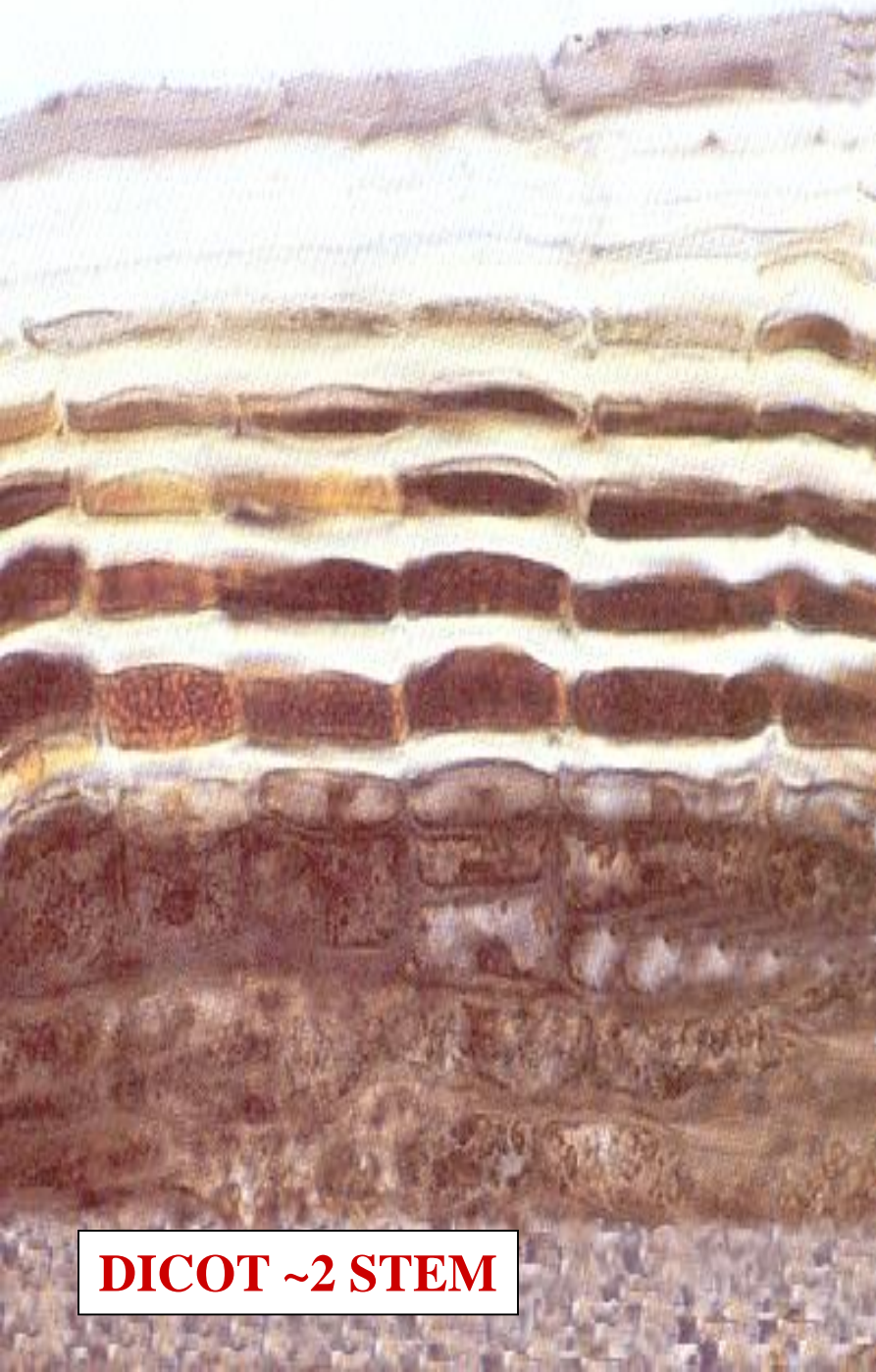
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PERIDERM



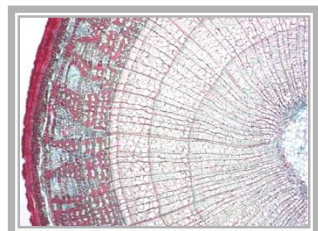
C.S.



CC

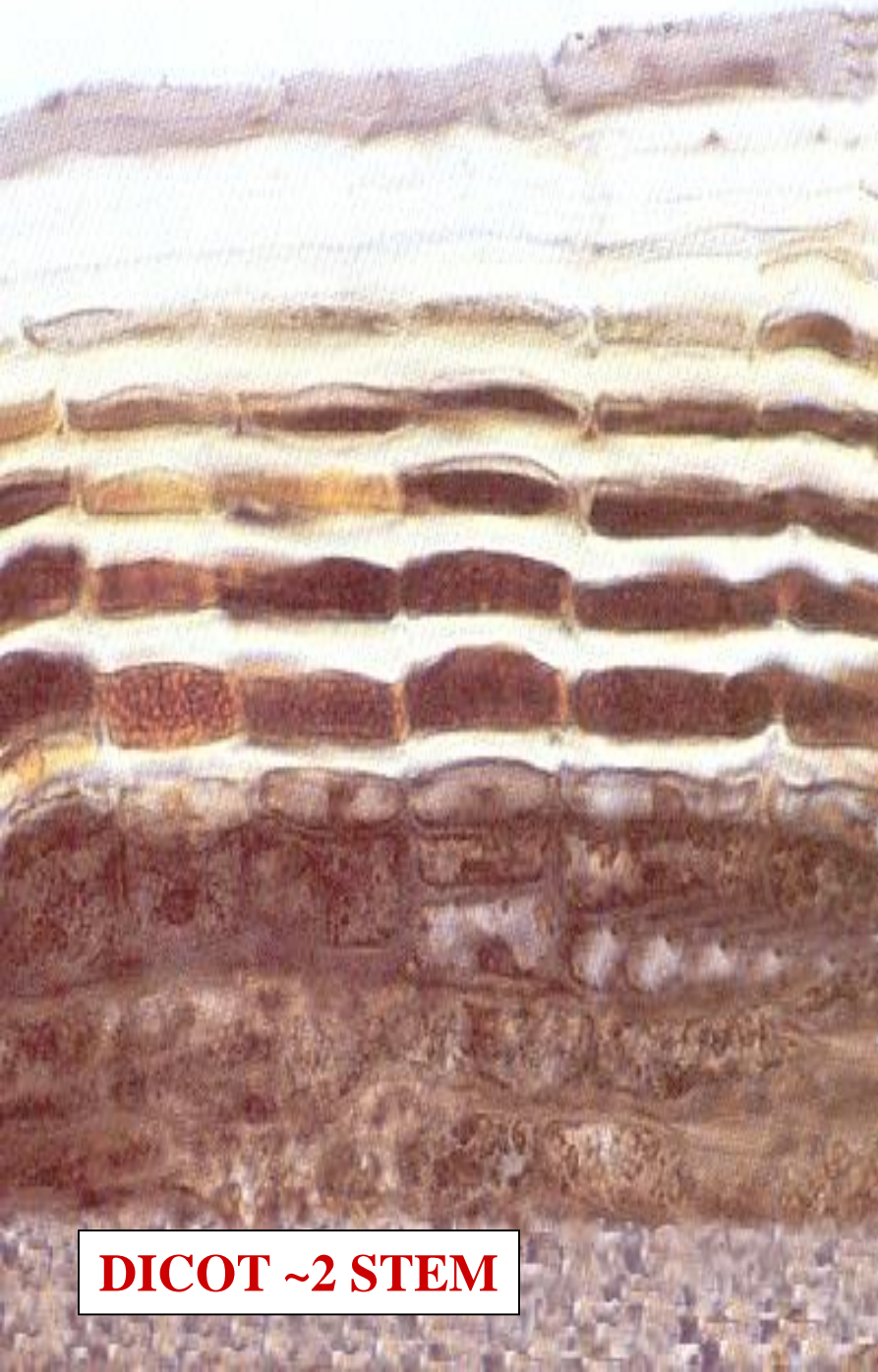
PERIDERM

PHELLODERM



C.S.

DICOT ~2 STEM

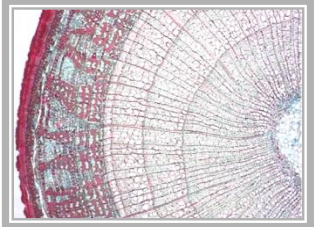


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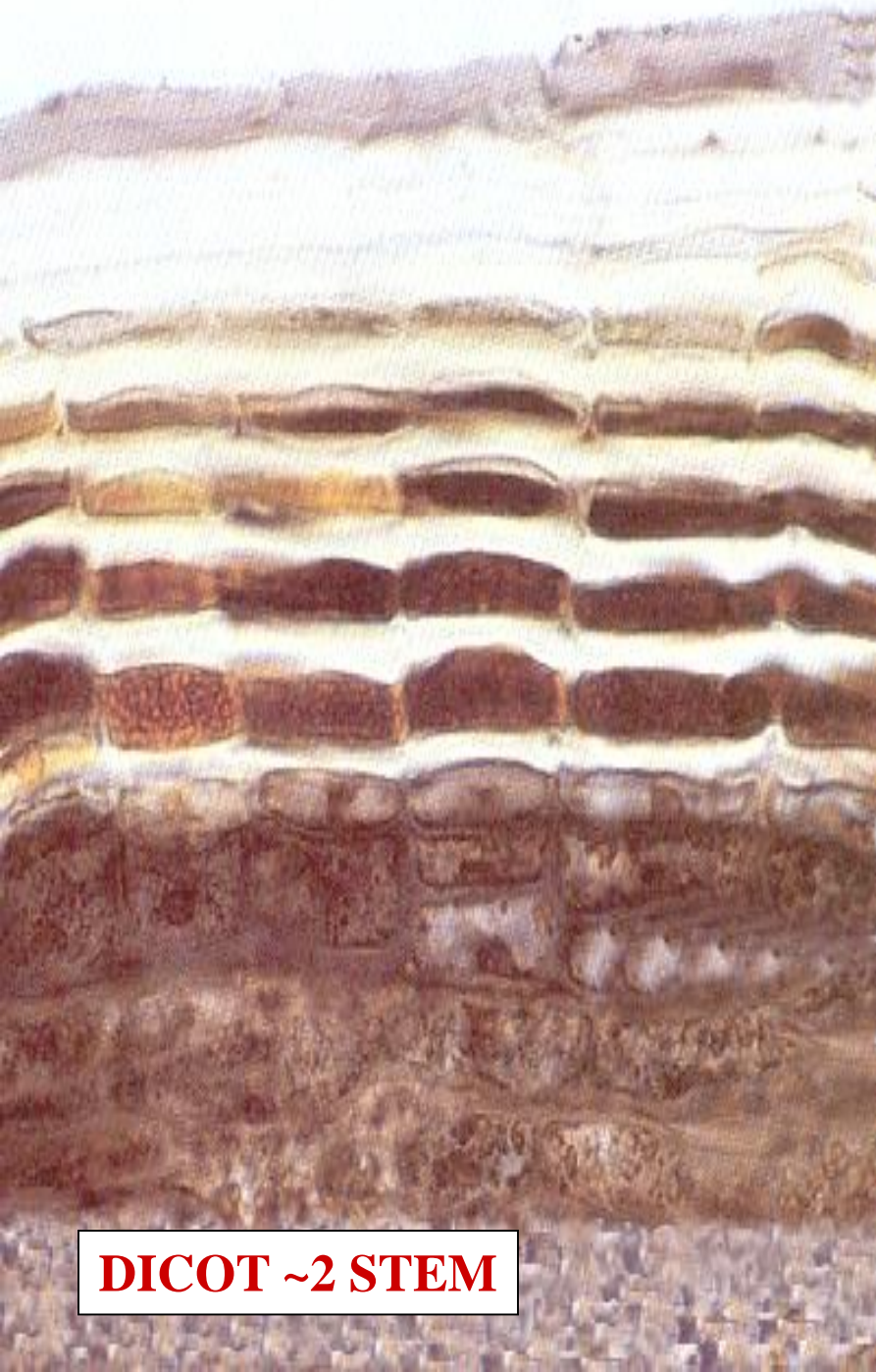
**CORK
CAMBIUM**

PHELLODERM

PERIDERM



C.S.



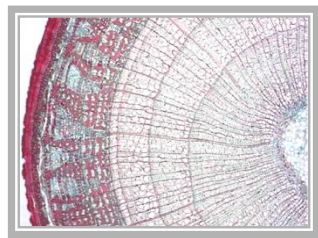
DICOT ~2 STEM

CORK

**CORK
CAMBIUM**

PHELLODERM

PERIDERM



C.S.

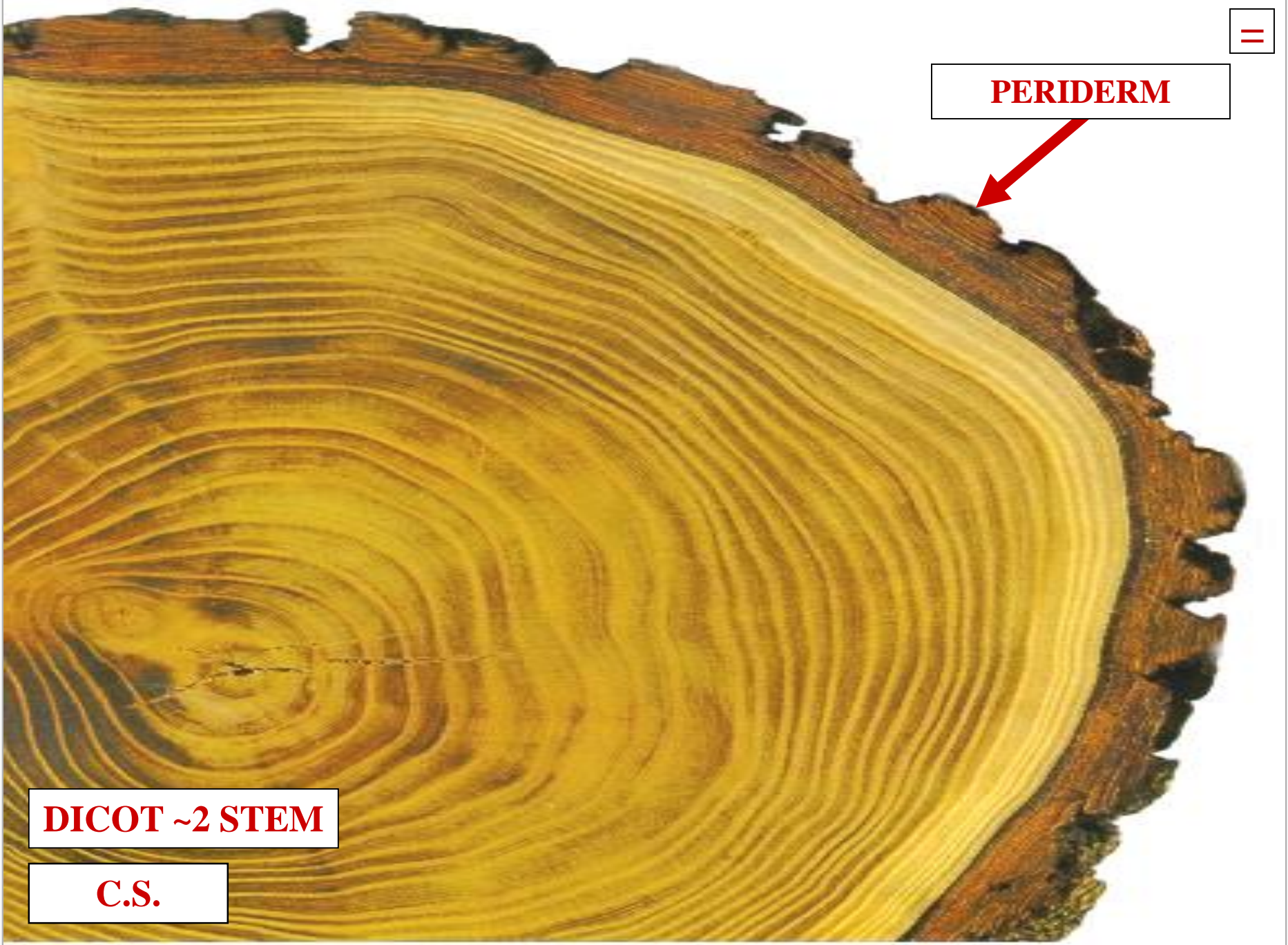


PERIDERM



DICOT ~2 STEM

C.S.



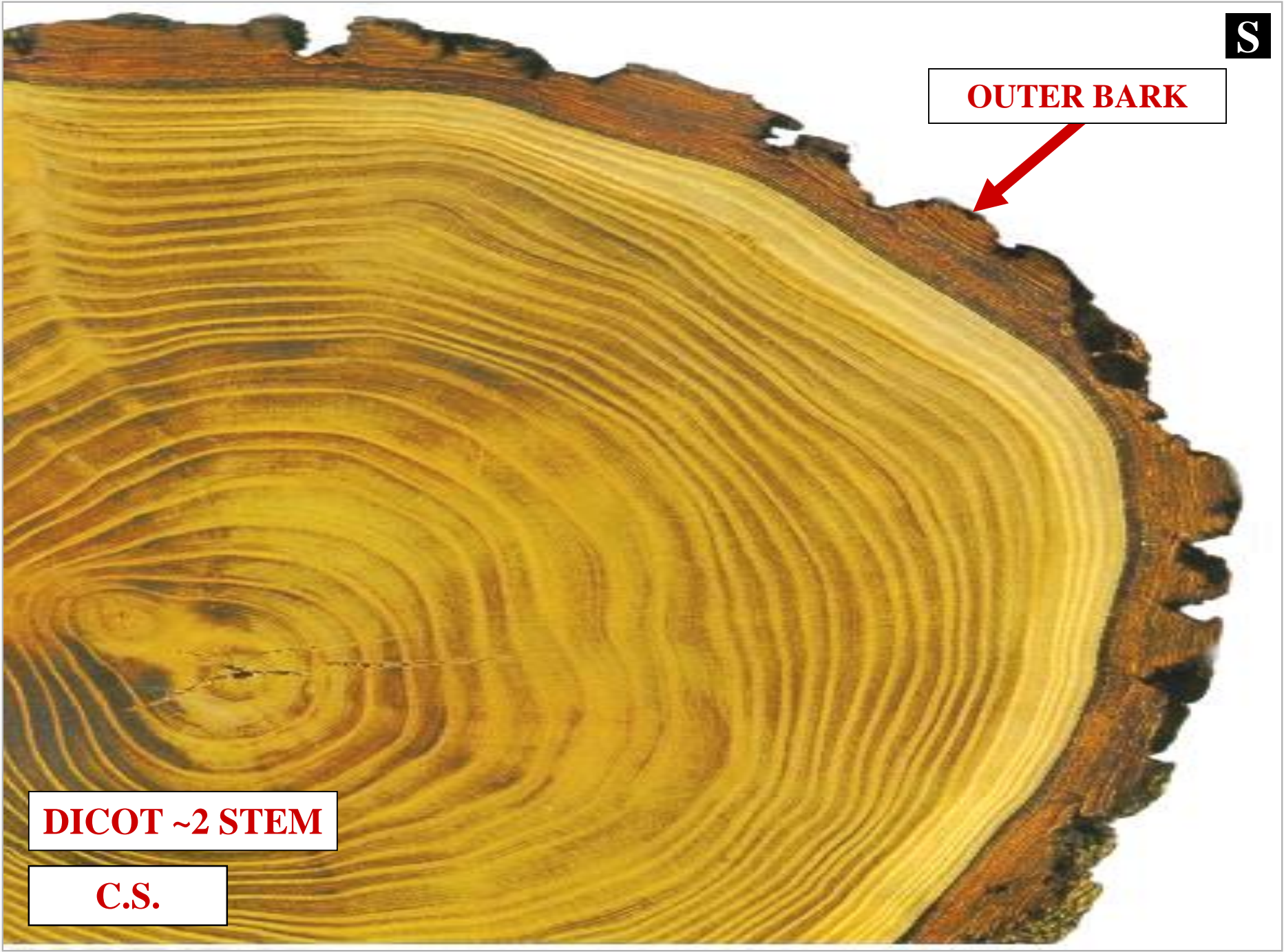
S

OUTER BARK



DICOT ~2 STEM

C.S.





PERIDERM

SYNONYMOUS

OUTER BARK

BARK CHARACTERS

BARK

BARK



VC

ALL TISSUES *OUTSIDE*
VASCULAR CAMBIUM

BARK

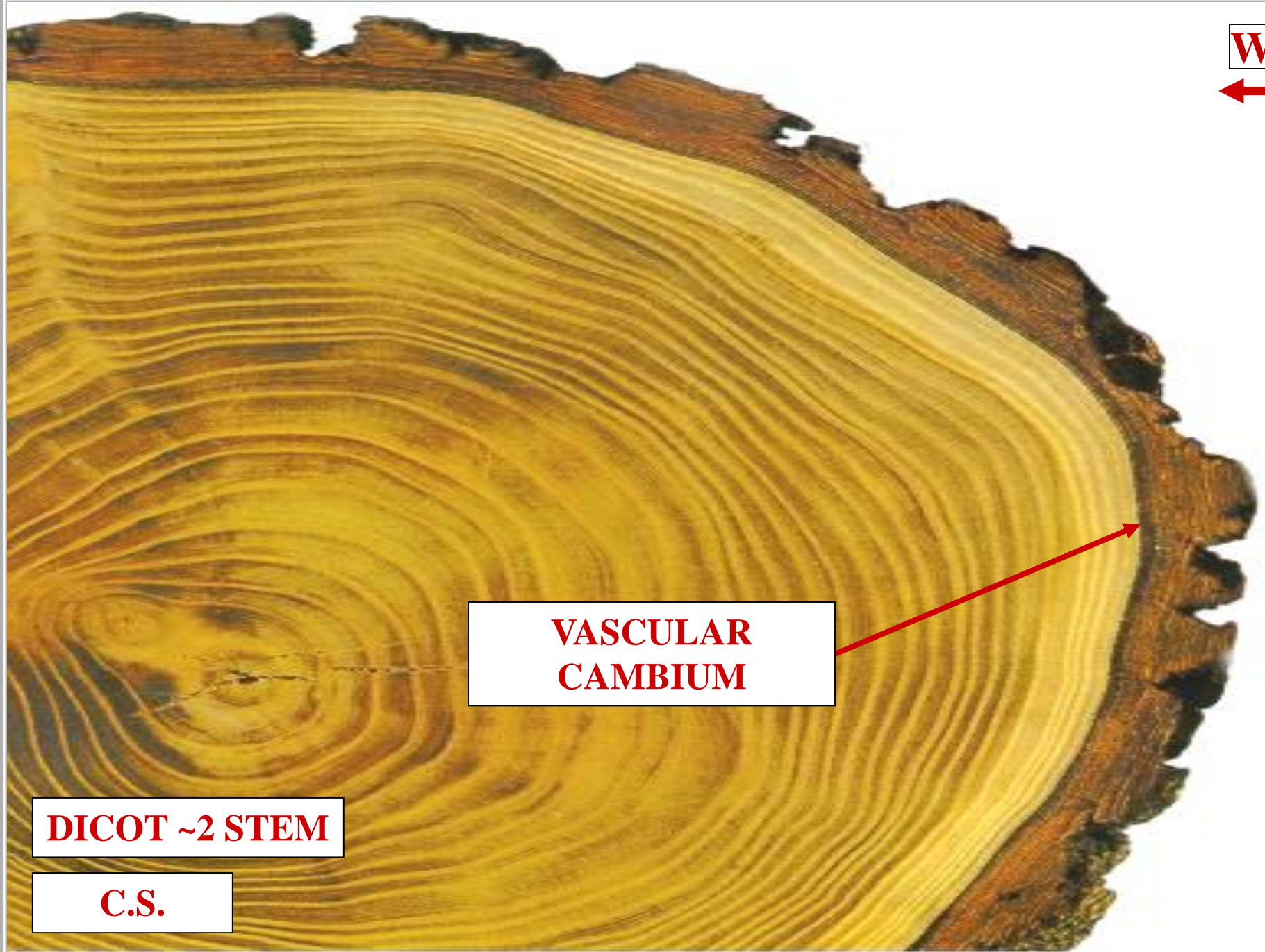
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**VASCULAR
CAMBIUM**

DICOT ~2 STEM

C.S.



B

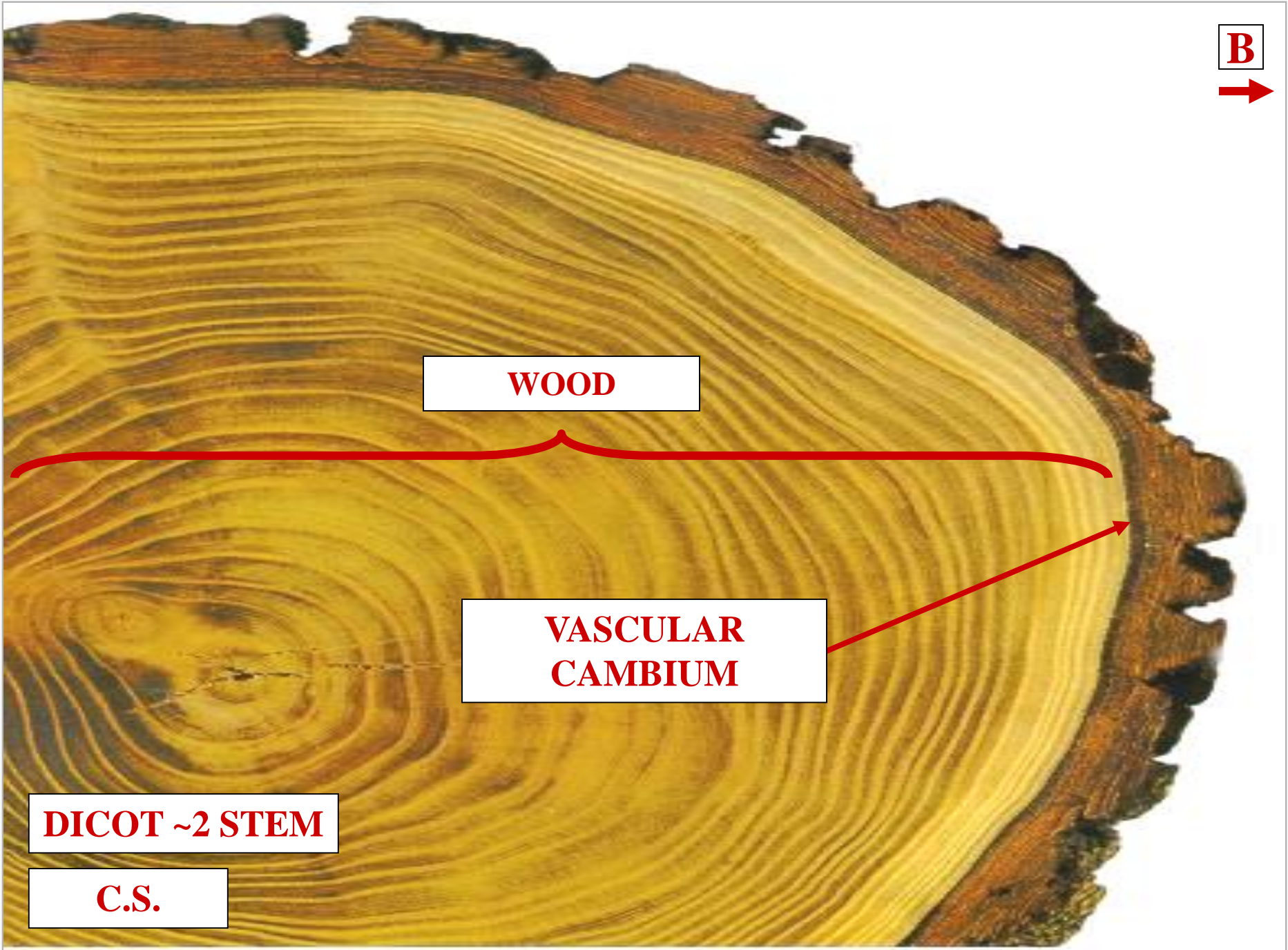


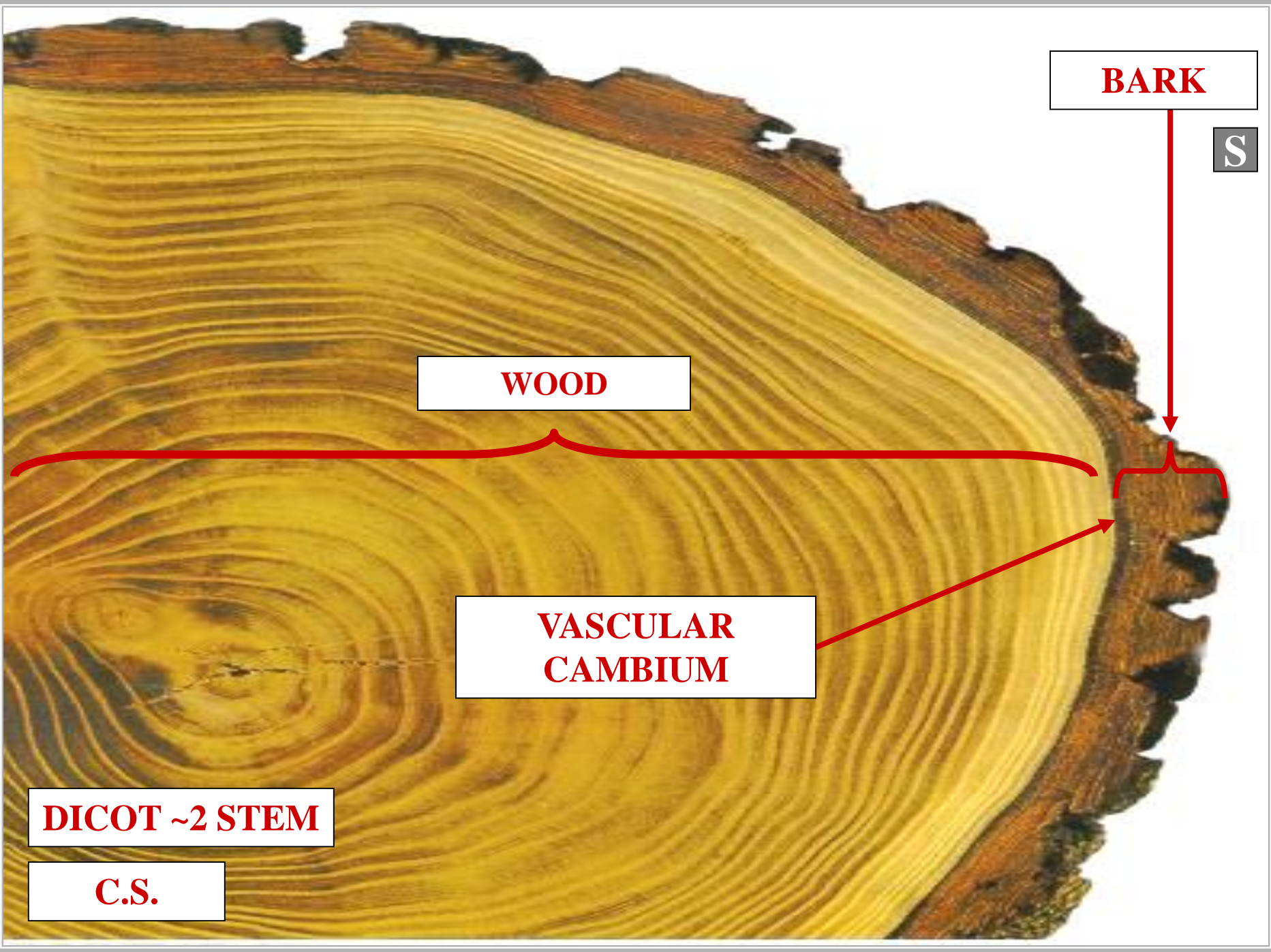
WOOD

**VASCULAR
CAMBIUM**

DICOT ~2 STEM

C.S.





BARK

S

WOOD

**VASCULAR
CAMBIUM**

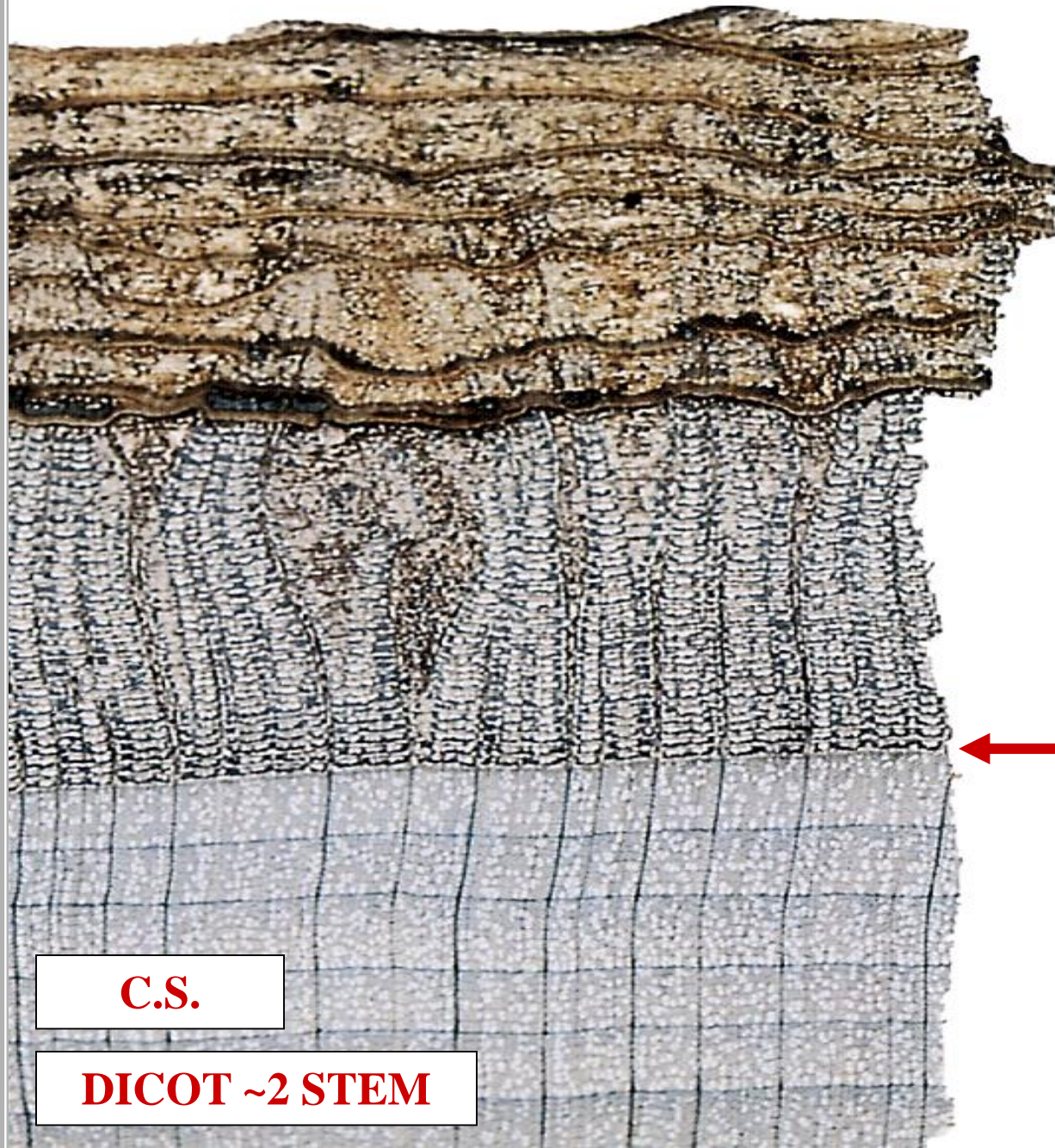
DICOT ~2 STEM

C.S.



BARK

SUMMARY

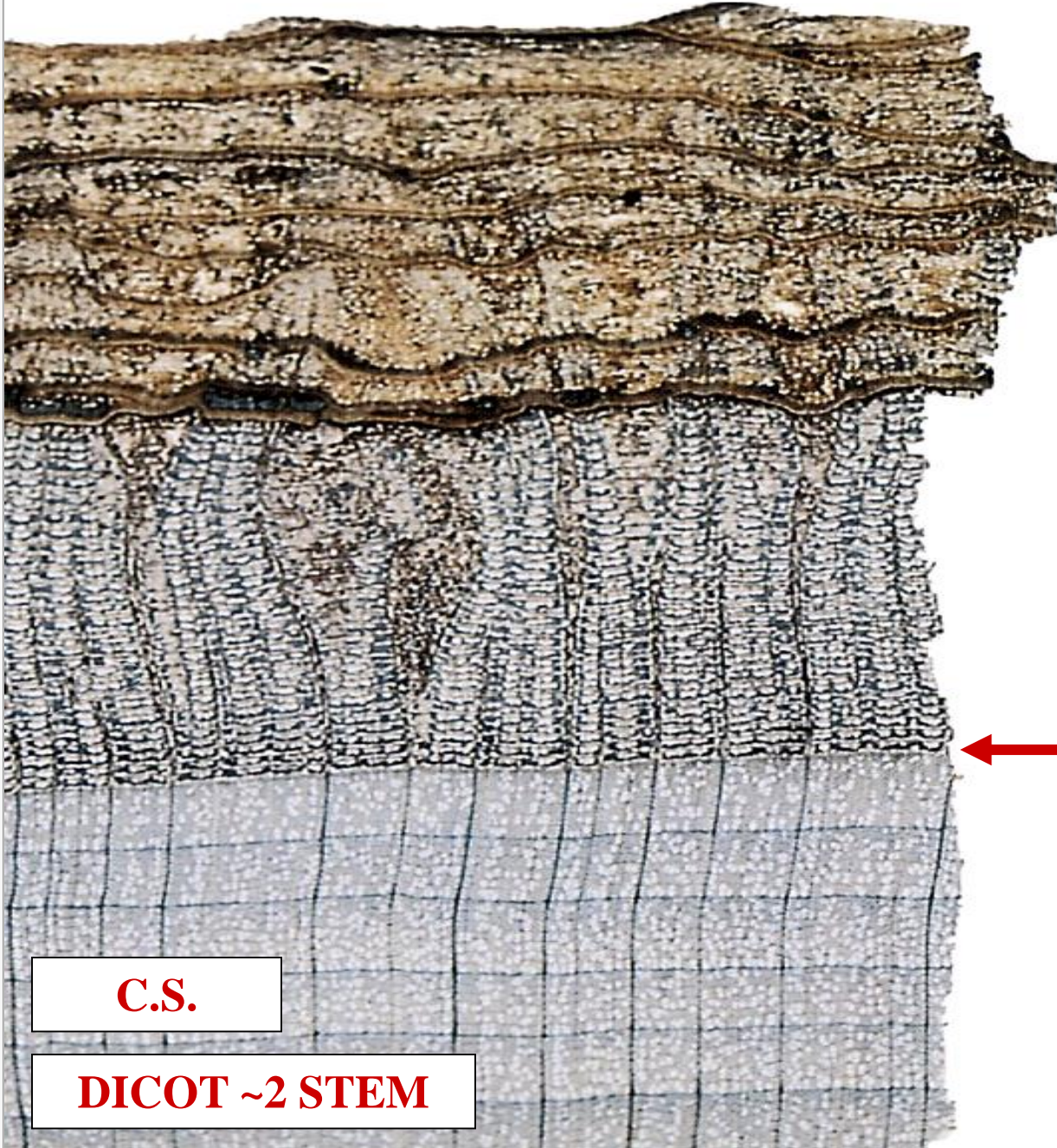


VASCULAR
CAMBIUM

C.S.

DICOT ~2 STEM

B



C.S.

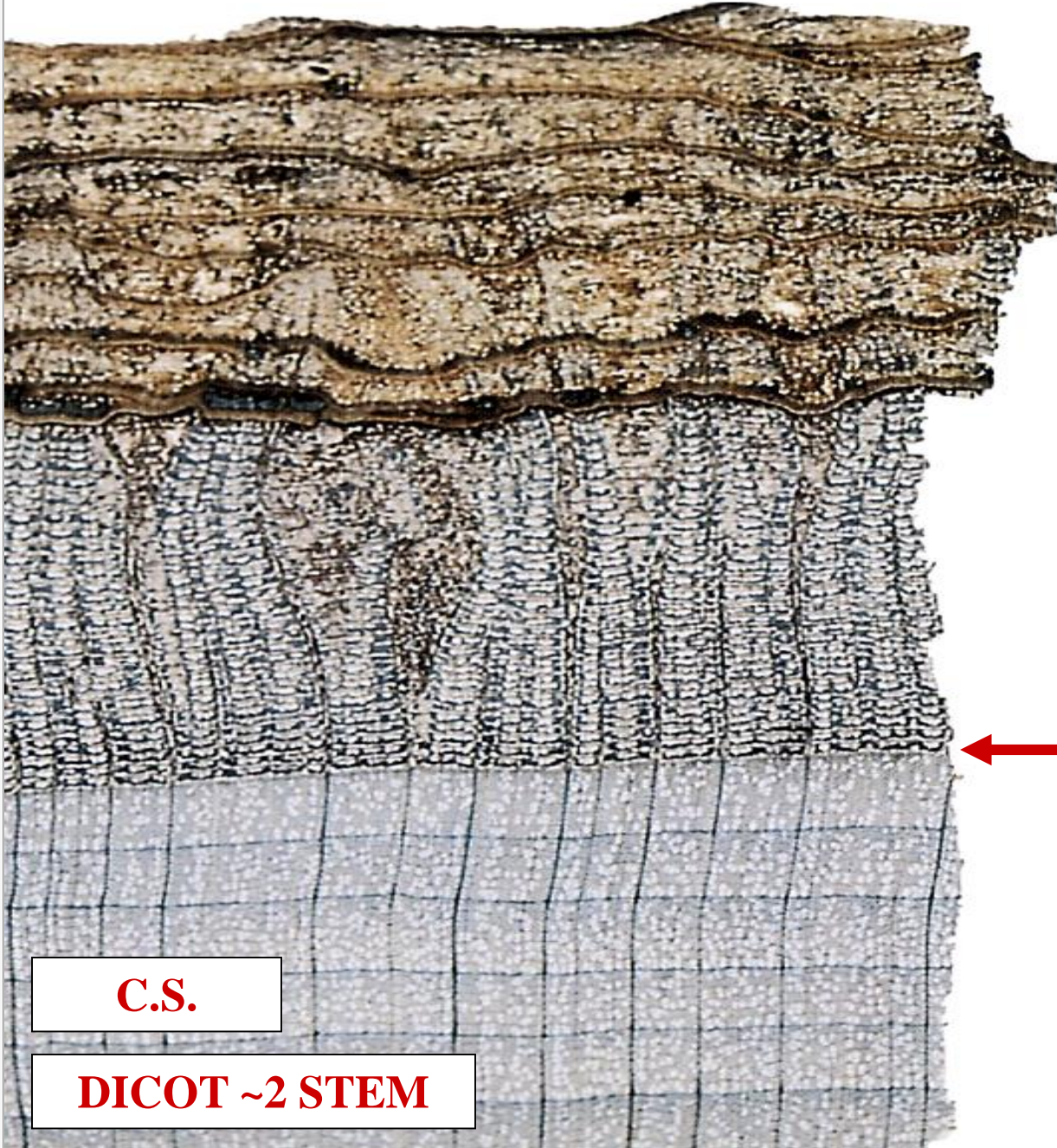
DICOT ~2 STEM

**VASCULAR
CAMBIUM**

**~2
XYLEM**

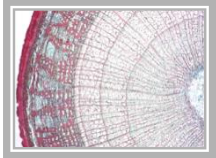
WOOD





BARK

**VASCULAR
CAMBIUM**



**~2
XYLEM**

WOOD

C.S.

DICOT ~2 STEM



INNER BARK
VS
OUTER BARK

INNER BARK

INNER BARK

INNER BARK



**INNERMOST
CORK CAMBIUM
INWARD**

INNER BARK

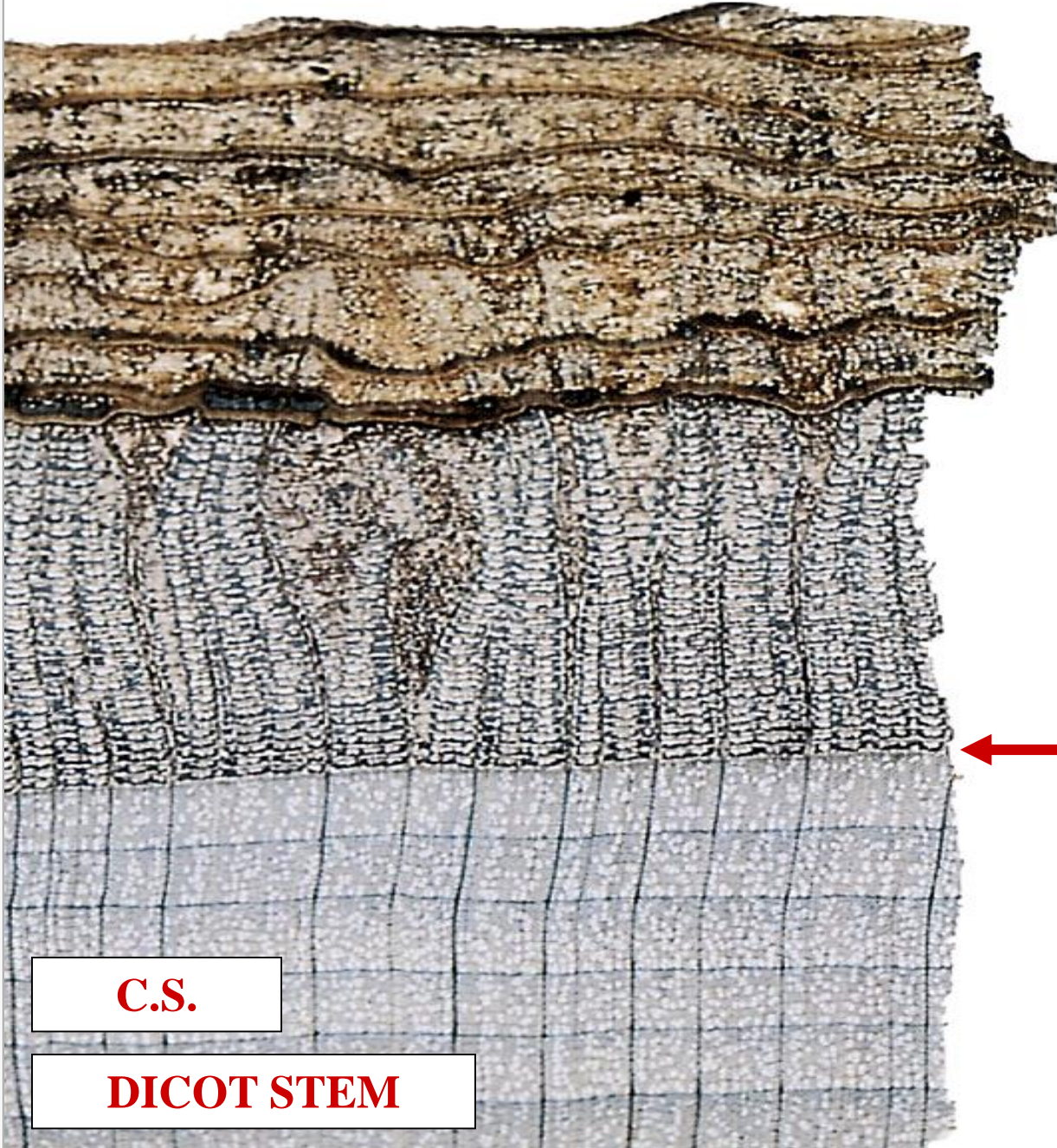
INNER BARK



**INNERMOST
CORK CAMBIUM
INWARD**

CONSISTS ~2 PHLOEM

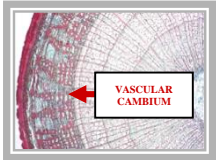
INNER BARK



IN

BARK

VASCULAR
CAMBIUM

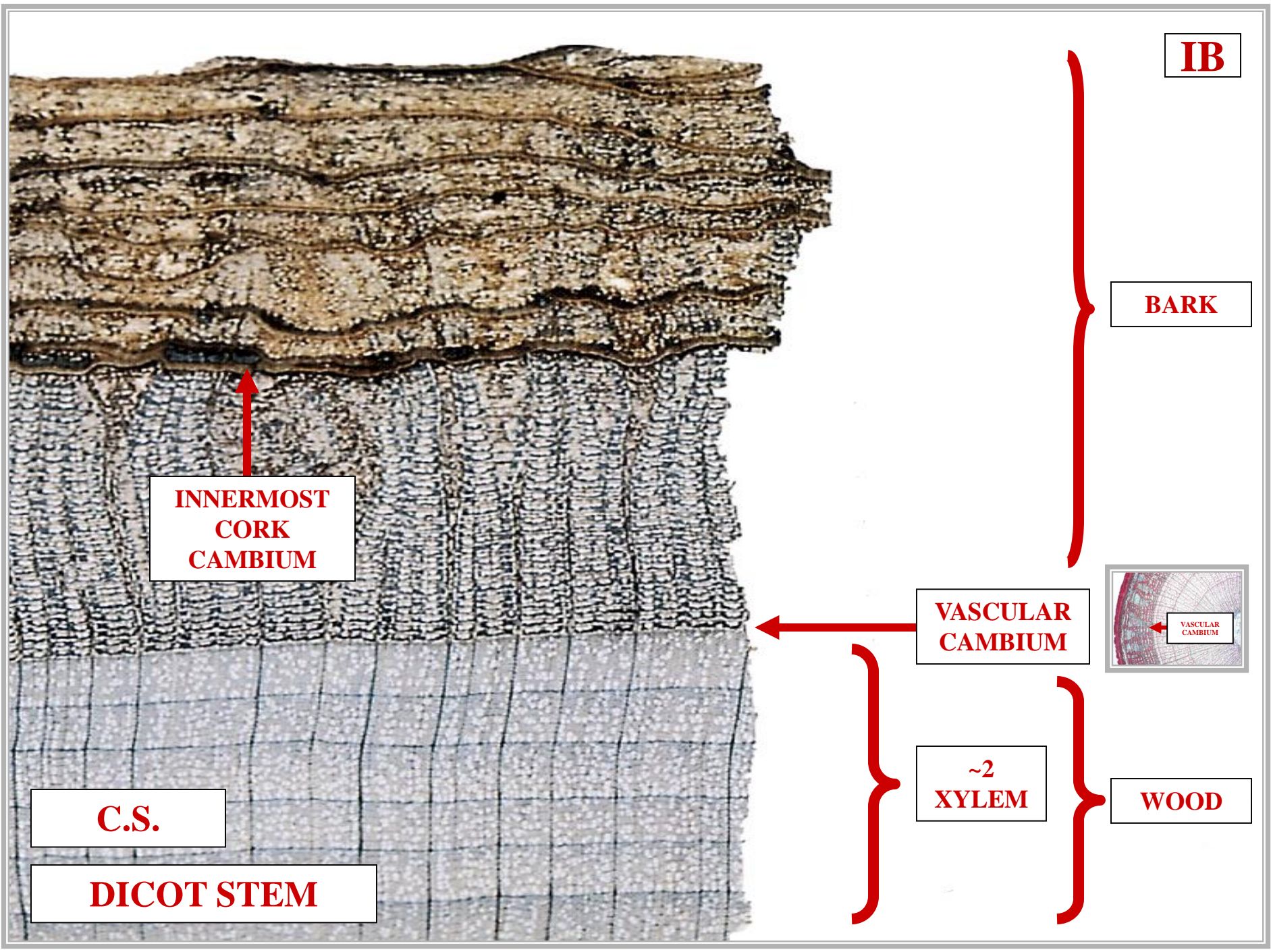


~2
XYLEM

WOOD

C.S.

DICOT STEM

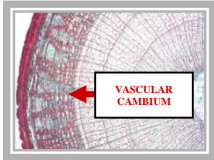


IB

BARK

**INNERMOST
CORK
CAMBIUM**

**VASCULAR
CAMBIUM**

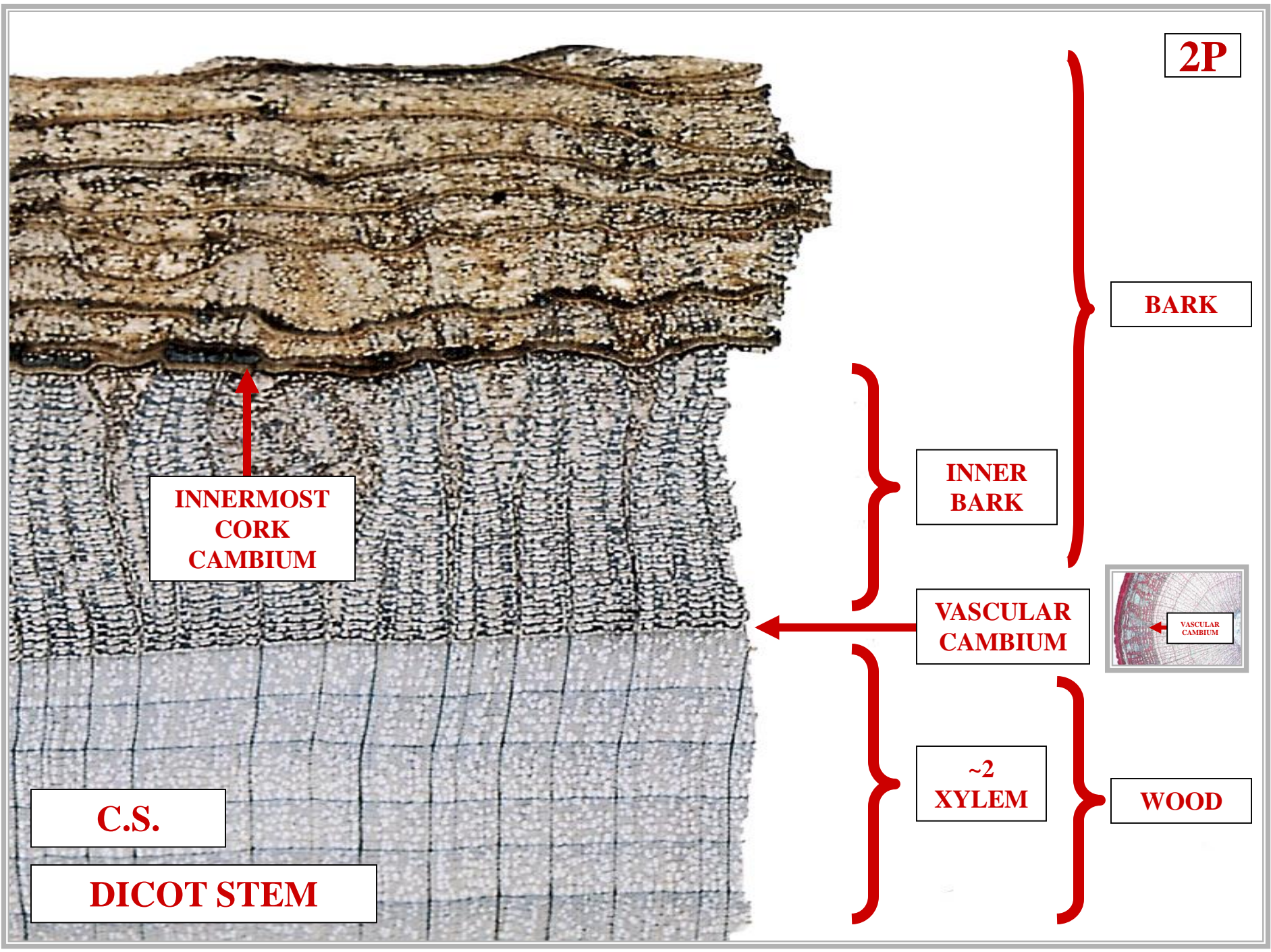


**~2
XYLEM**

WOOD

C.S.

DICOT STEM

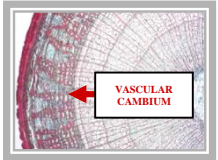


2P

BARK

INNER BARK

VASCULAR CAMBIUM



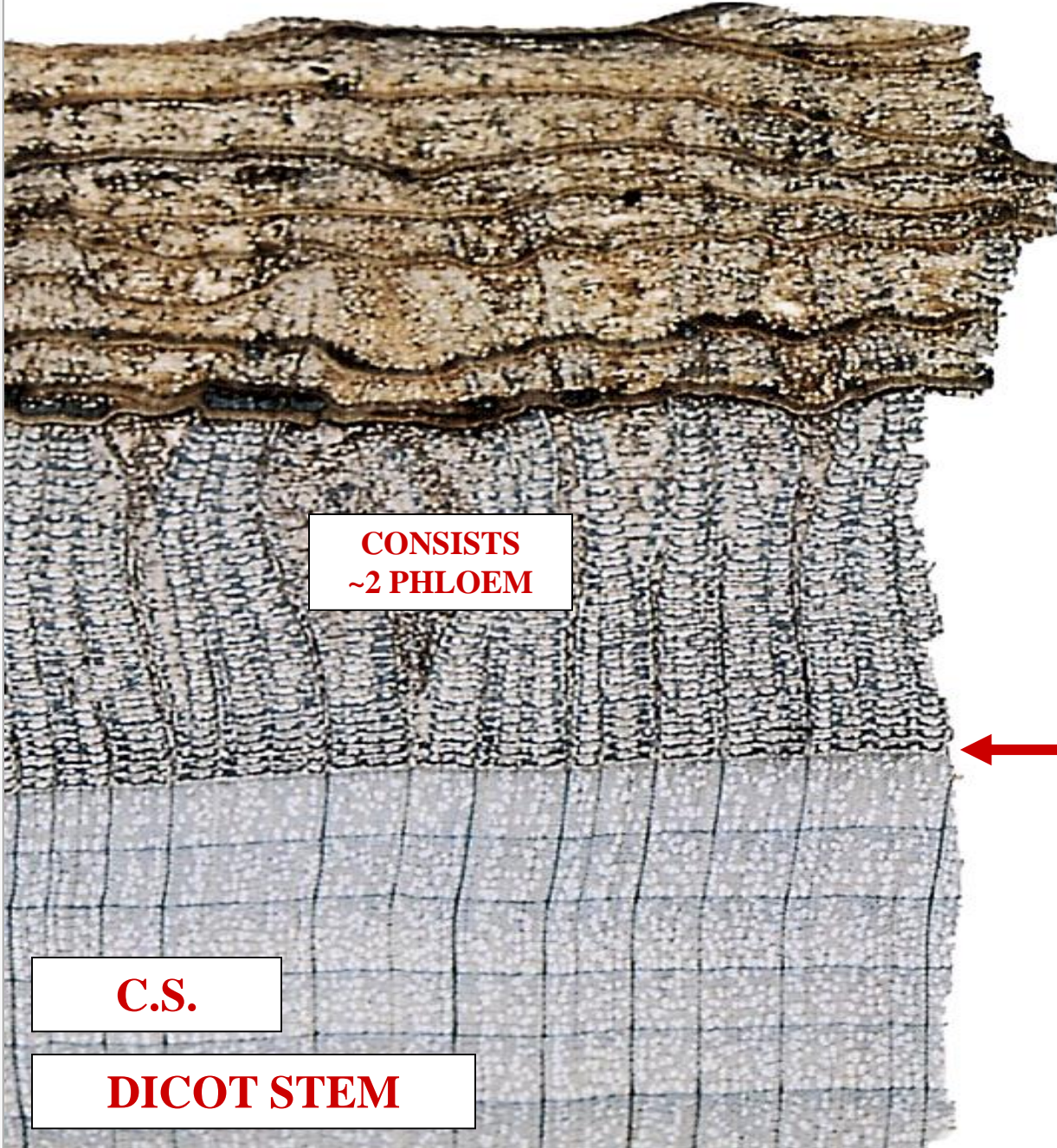
~2 XYLEM

WOOD

INNERMOST CORK CAMBIUM

C.S.

DICOT STEM



BARK

INNER BARK

VASCULAR CAMBIUM

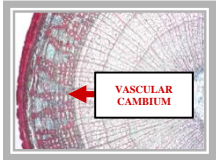
~2 XYLEM

WOOD

**CONSISTS
~2 PHLOEM**

C.S.

DICOT STEM



FUNCTIONAL

~2 PHLOEM

VS

NON-FUNCTIONAL

~2 PHLOEM

FUNCTIONAL
~2 PHLOEM



INNER BARK
FUNCTIONAL ~2 PHLOEM

YOUNGEST ~2 PHLOEM

INNER BARK
FUNCTIONAL ~2 PHLOEM



INNER BARK

FUNCTIONAL ~2 PHLOEM

YOUNGEST ~2 PHLOEM

ACTIVELY TRANSPORTING SUGARS

INNER BARK

FUNCTIONAL ~2 PHLOEM



INNER BARK

FUNCTIONAL ~2 PHLOEM

YOUNGEST ~2 PHLOEM

ACTIVELY TRANSPORTING SUGARS

LIVING

INNER BARK

FUNCTIONAL ~2 PHLOEM

INNER BARK

FUNCTIONAL ~2 PHLOEM

YOUNGEST ~2 PHLOEM

ACTIVELY TRANSPORTING SUGARS

LIVING

CONSISTS SIEVE MEMBERS

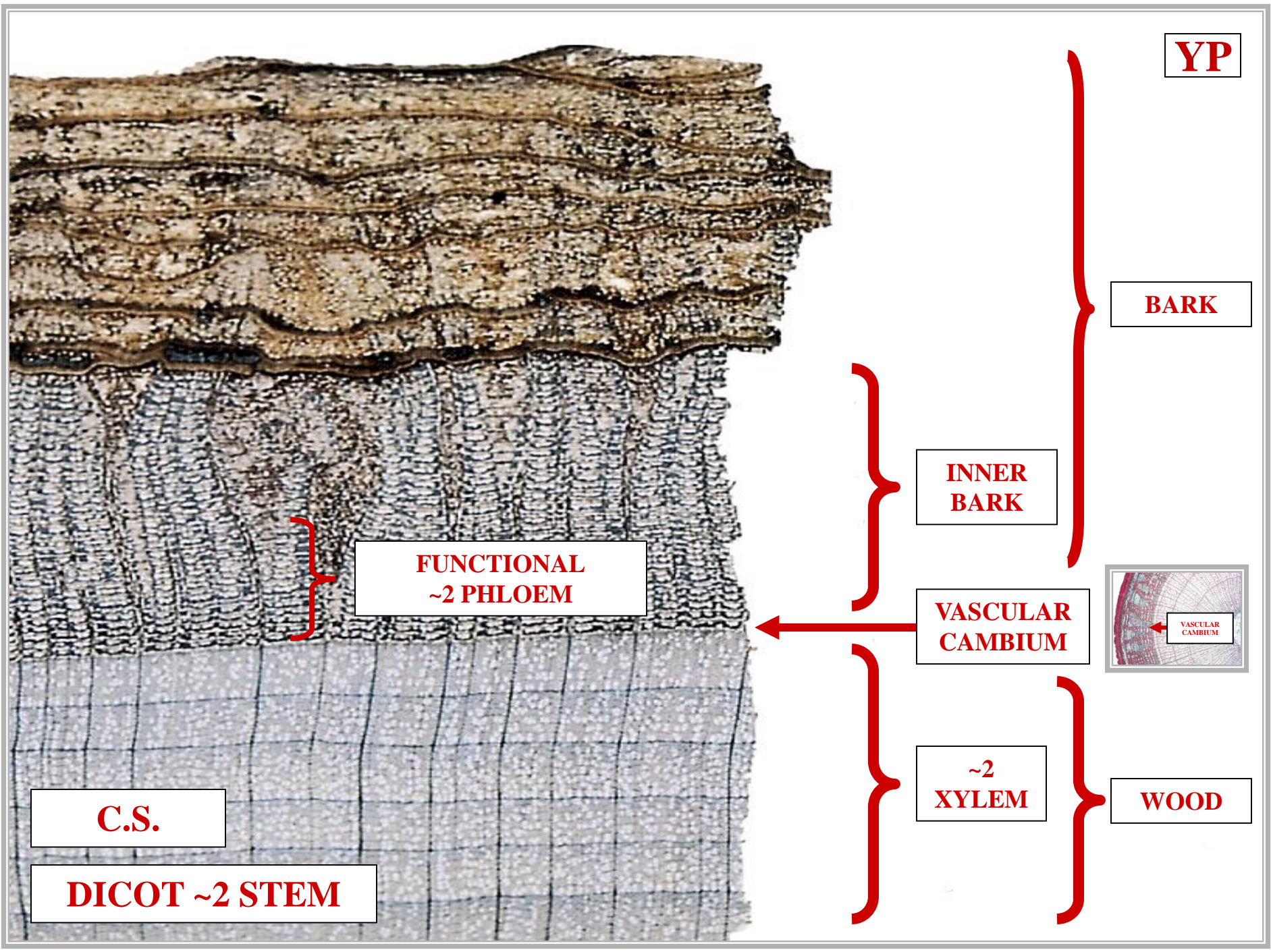
INNER BARK

FUNCTIONAL ~2 PHLOEM



FP



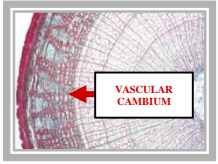


YP

BARK

INNER BARK

VASCULAR CAMBIUM



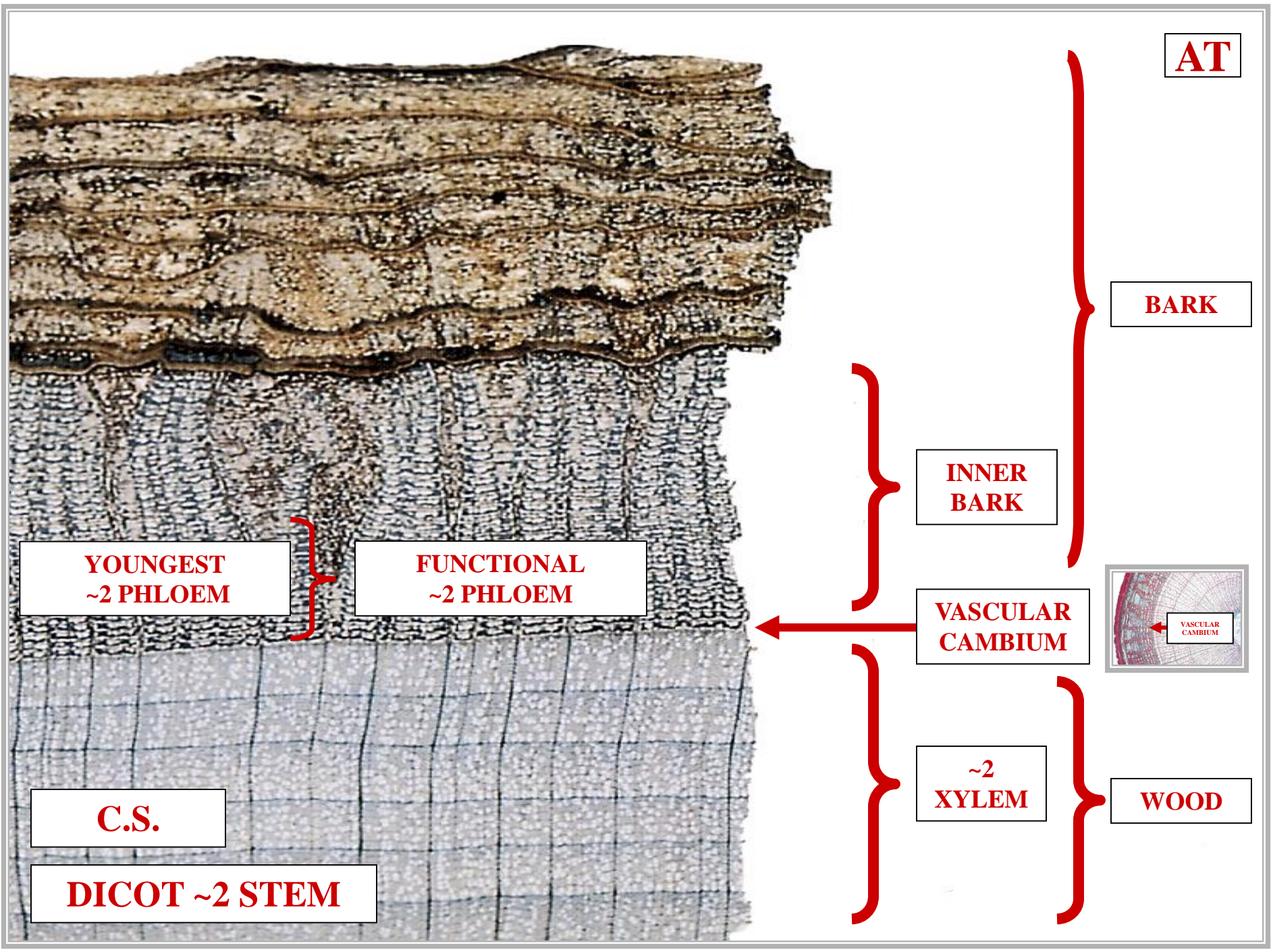
~2 XYLEM

WOOD

FUNCTIONAL ~2 PHLOEM

C.S.

DICOT ~2 STEM



AT

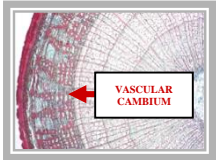
BARK

**INNER
BARK**

**YOUNGEST
~2 PHLOEM**

**FUNCTIONAL
~2 PHLOEM**

**VASCULAR
CAMBIUM**



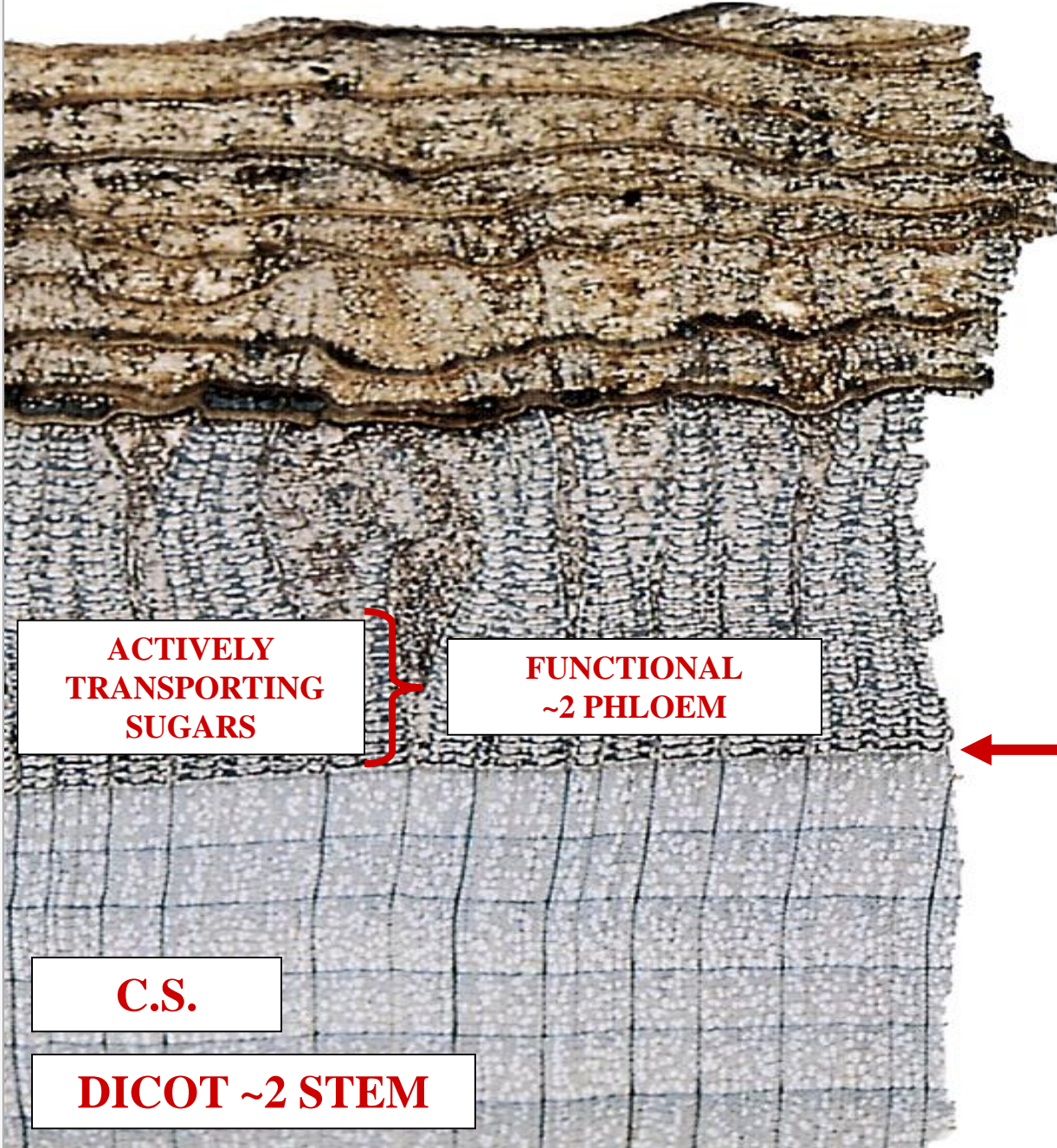
C.S.

**~2
XYLEM**

WOOD

DICOT ~2 STEM

L



BARK

INNER BARK

VASCULAR CAMBIUM

~2 XYLEM

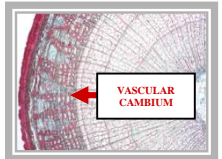
WOOD

ACTIVELY TRANSPORTING SUGARS

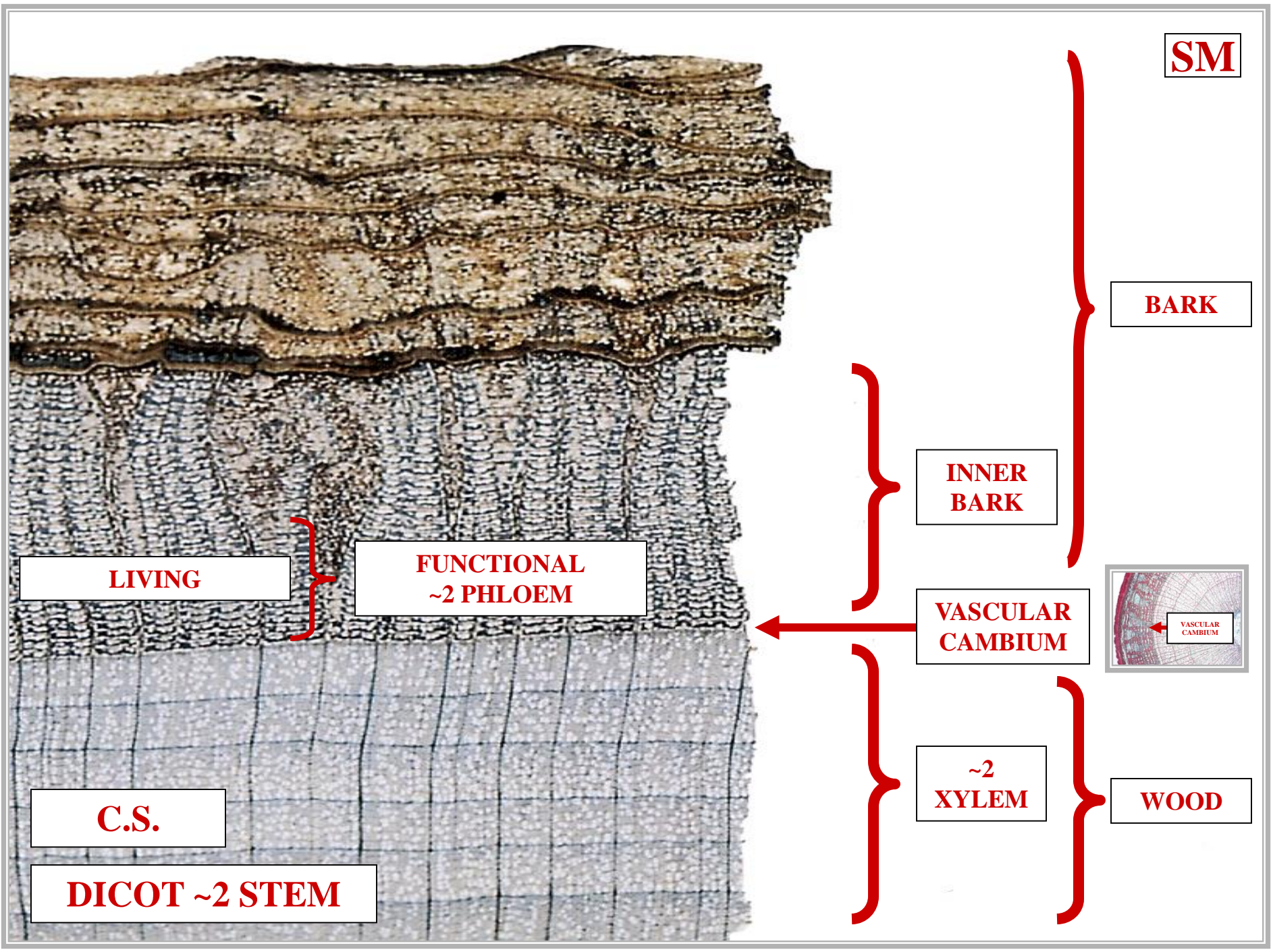
FUNCTIONAL ~2 PHLOEM

C.S.

DICOT ~2 STEM



VASCULAR CAMBIUM



SM

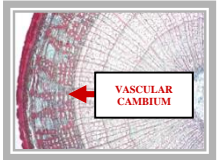
BARK

**INNER
BARK**

LIVING

**FUNCTIONAL
~2 PHLOEM**

**VASCULAR
CAMBIUM**

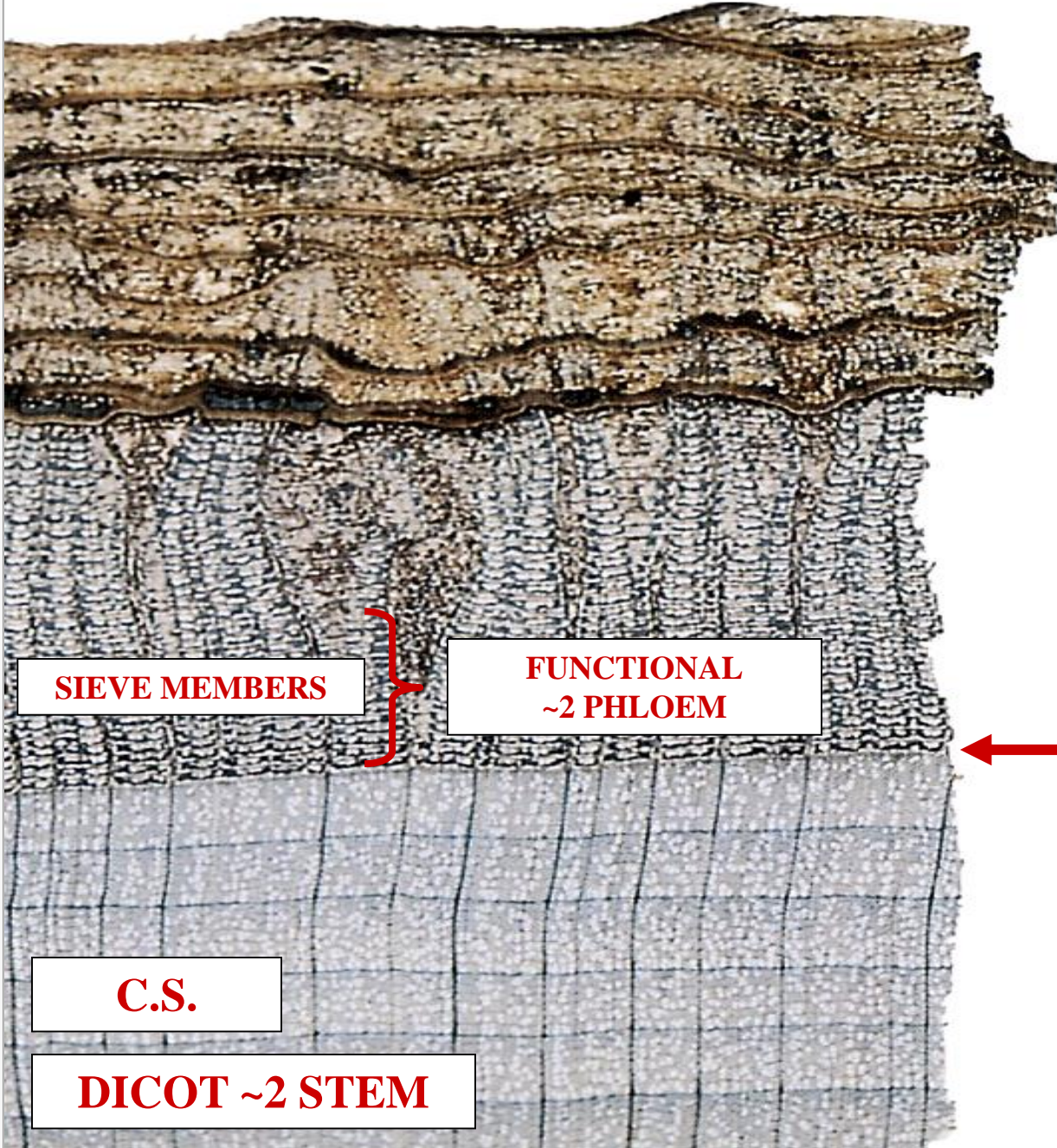


C.S.

**~2
XYLEM**

WOOD

DICOT ~2 STEM

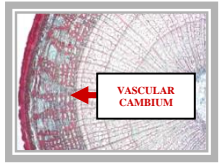


^
N

BARK

INNER BARK

VASCULAR CAMBIUM



VASCULAR CAMBIUM

~2 XYLEM

WOOD

SIEVE MEMBERS

FUNCTIONAL ~2 PHLOEM

C.S.

DICOT ~2 STEM

NON-FUNCTIONAL
~2 PHLOEM



INNER BARK

NON-FUNCTIONAL ~2 PHLOEM

OLDEST ~2 PHLOEM

INNER BARK

NON-FUNCTIONAL ~2 PHLOEM



INNER BARK

NON-FUNCTIONAL ~2 PHLOEM

OLDEST ~2 PHLOEM

NOT TRANSPORTING SUGARS

INNER BARK

NON-FUNCTIONAL ~2 PHLOEM



INNER BARK

NON-FUNCTIONAL ~2 PHLOEM

OLDEST ~2 PHLOEM

NOT TRANSPORTING SUGARS

PARTLY LIVING

INNER BARK

NON-FUNCTIONAL ~2 PHLOEM



INNER BARK

NON-FUNCTIONAL ~2 PHLOEM

OLDEST ~2 PHLOEM

NOT TRANSPORTING SUGARS

PARTLY LIVING

SIEVE MEMBERS – DEAD

INNER BARK

NON-FUNCTIONAL ~2 PHLOEM

INNER BARK

NON-FUNCTIONAL ~2 PHLOEM

OLDEST ~2 PHLOEM

NOT TRANSPORTING SUGARS

PARTLY LIVING

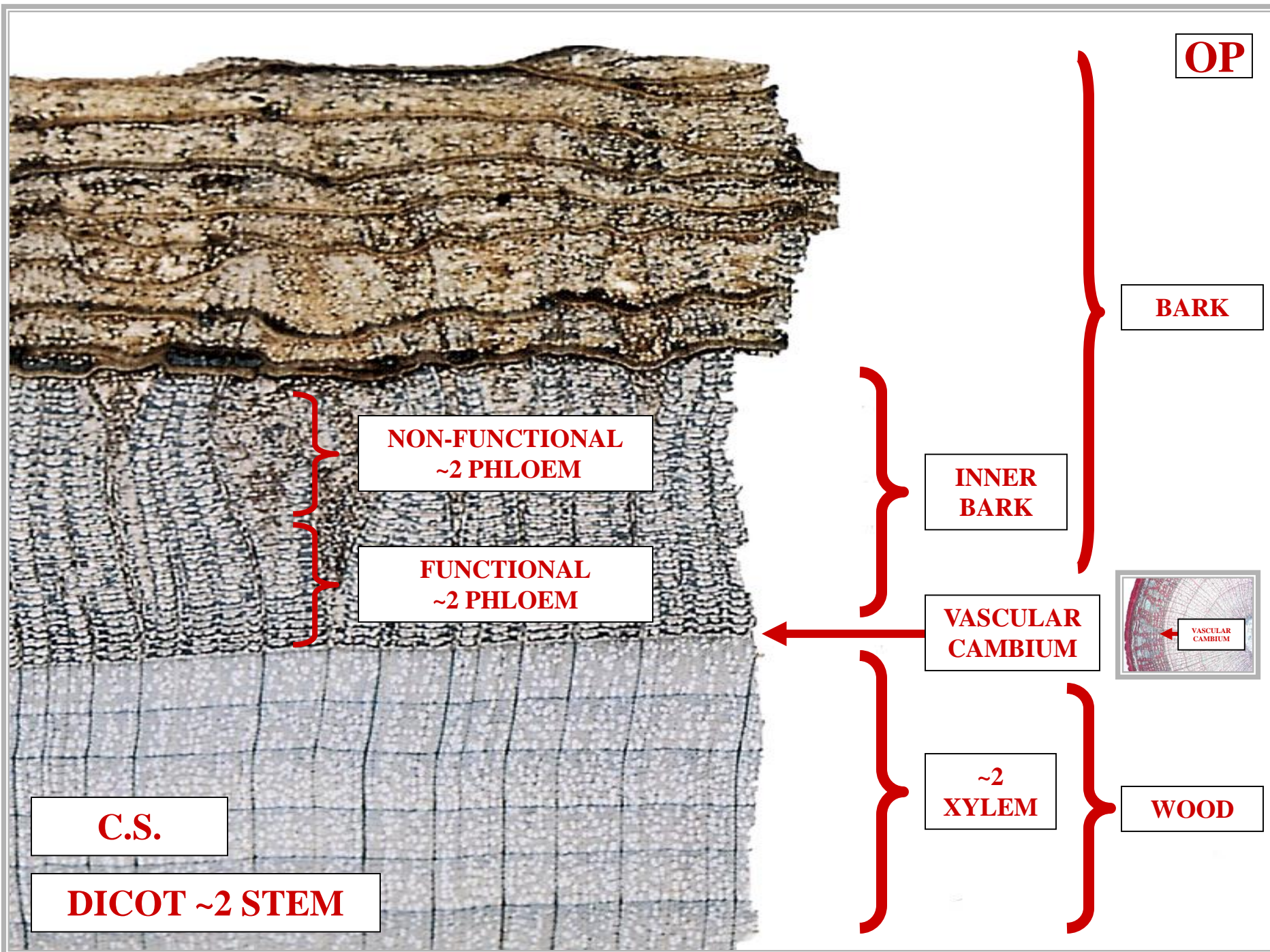
SIEVE MEMBERS – DEAD

PARENCHYMA – LIVING

INNER BARK

NON-FUNCTIONAL ~2 PHLOEM





OP

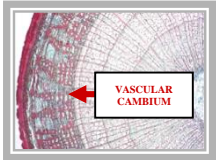
BARK

**NON-FUNCTIONAL
~2 PHLOEM**

**FUNCTIONAL
~2 PHLOEM**

**INNER
BARK**

**VASCULAR
CAMBIUM**

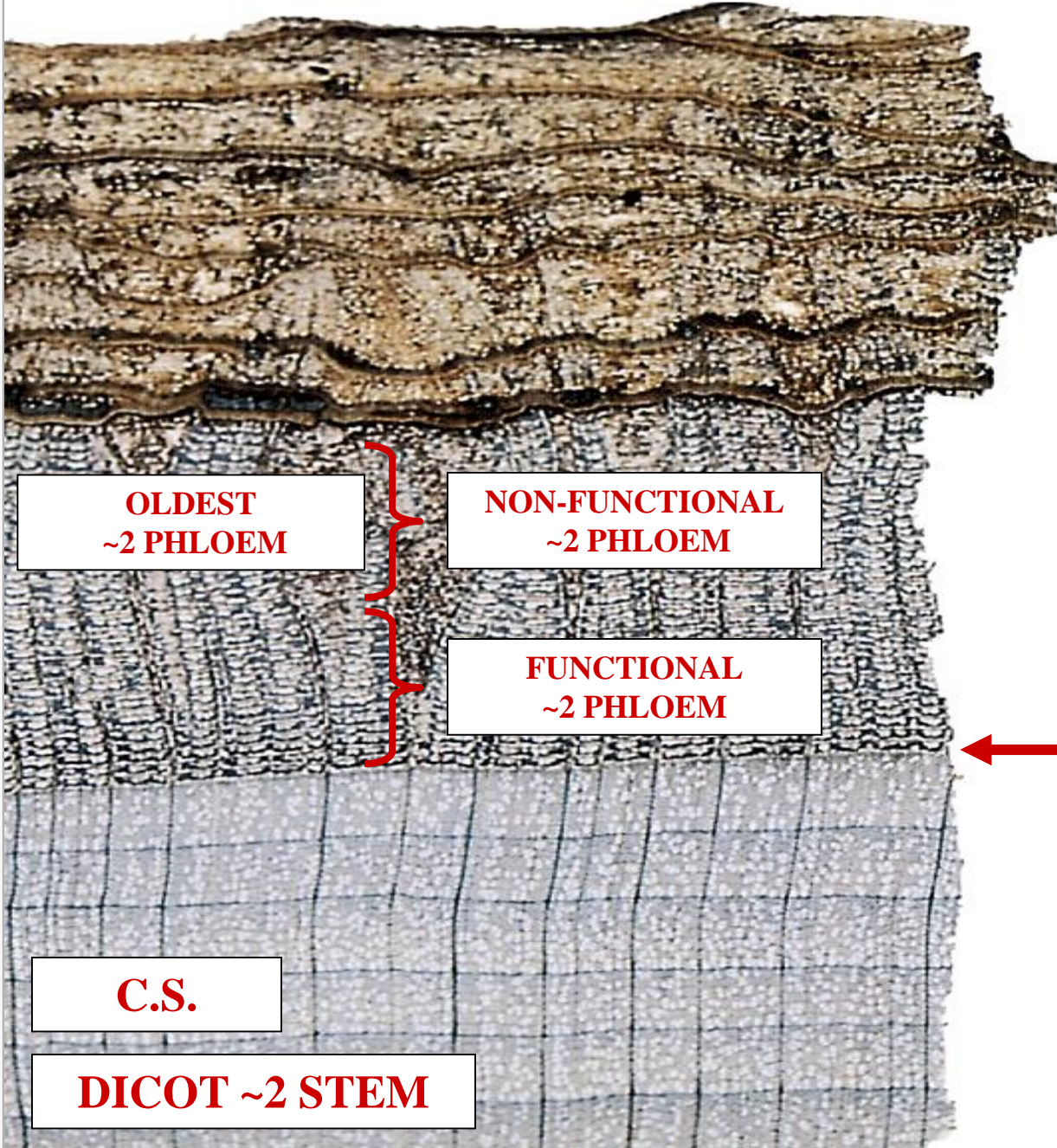


**~2
XYLEM**

WOOD

C.S.

DICOT ~2 STEM



NT

BARK

INNER BARK

VASCULAR CAMBIUM

~2 XYLEM

WOOD

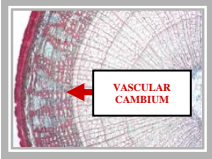
OLDEST ~2 PHLOEM

NON-FUNCTIONAL ~2 PHLOEM

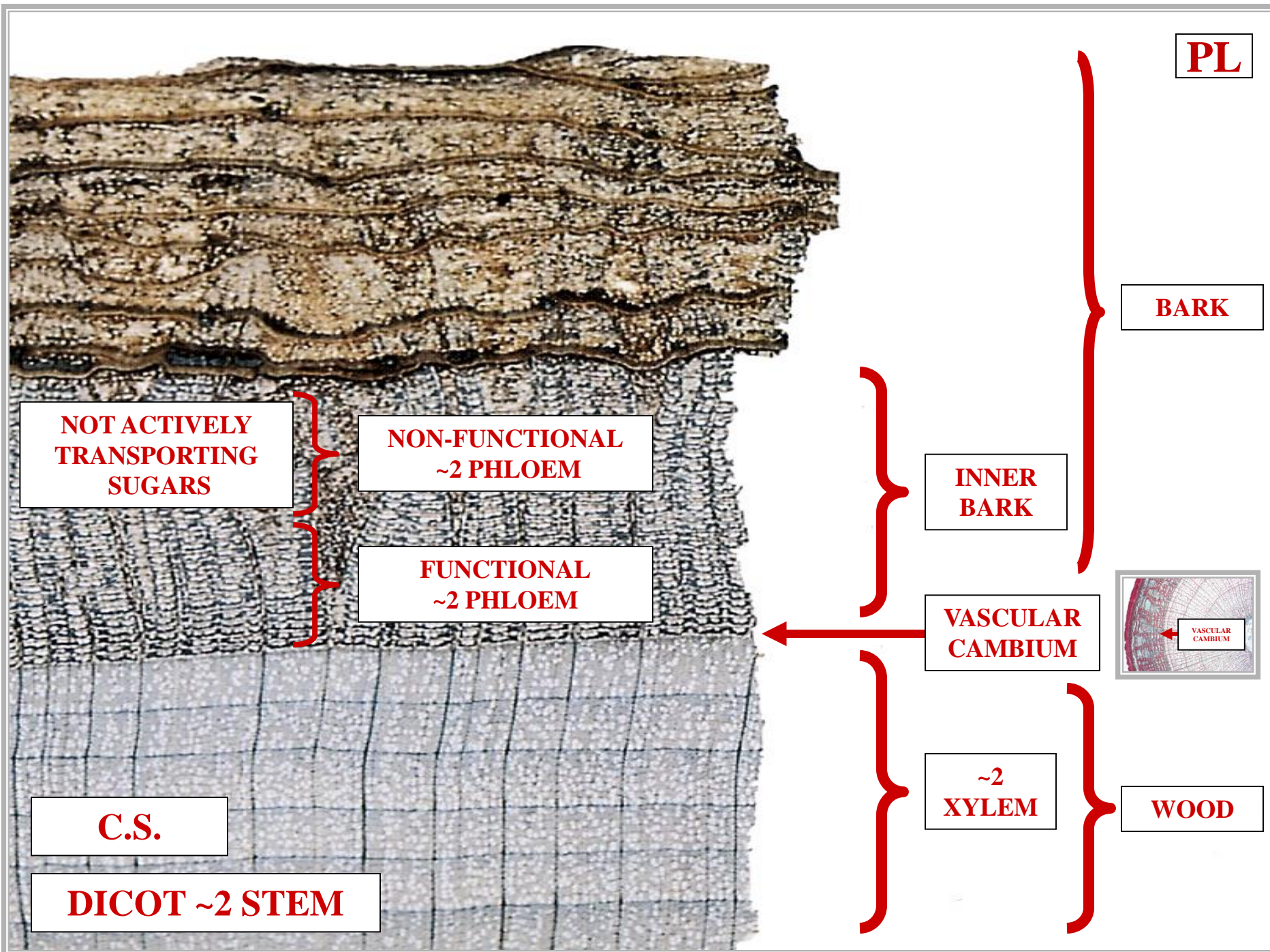
FUNCTIONAL ~2 PHLOEM

C.S.

DICOT ~2 STEM



VASCULAR CAMBIUM

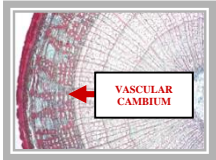


PL

BARK

INNER BARK

VASCULAR CAMBIUM



VASCULAR CAMBIUM

~2 XYLEM

WOOD

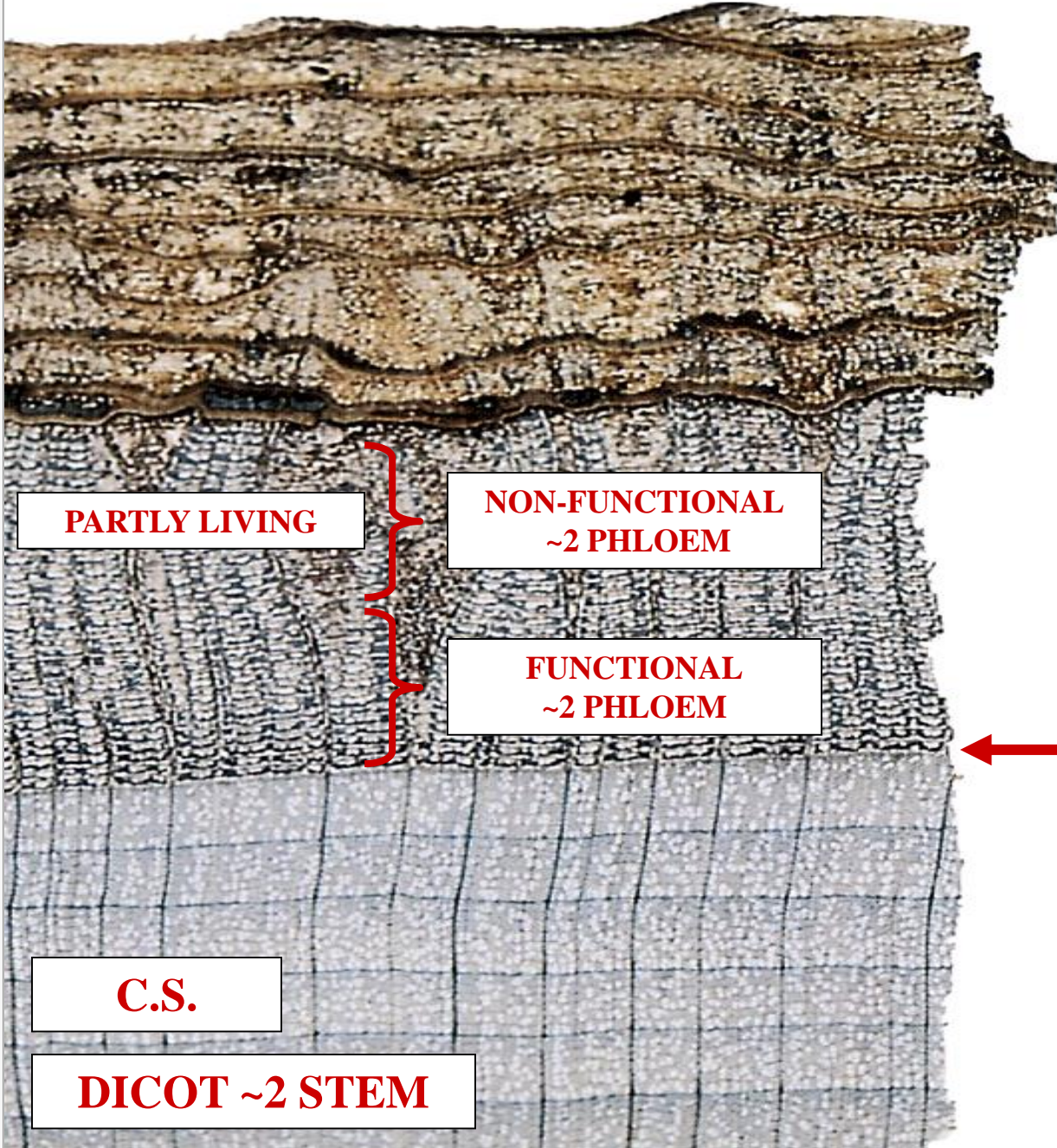
NOT ACTIVELY TRANSPORTING SUGARS

NON-FUNCTIONAL ~2 PHLOEM

FUNCTIONAL ~2 PHLOEM

C.S.

DICOT ~2 STEM



SM

BARK

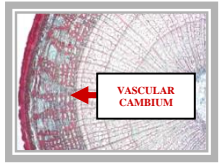
PARTLY LIVING

**NON-FUNCTIONAL
~2 PHLOEM**

**INNER
BARK**

**FUNCTIONAL
~2 PHLOEM**

**VASCULAR
CAMBIUM**

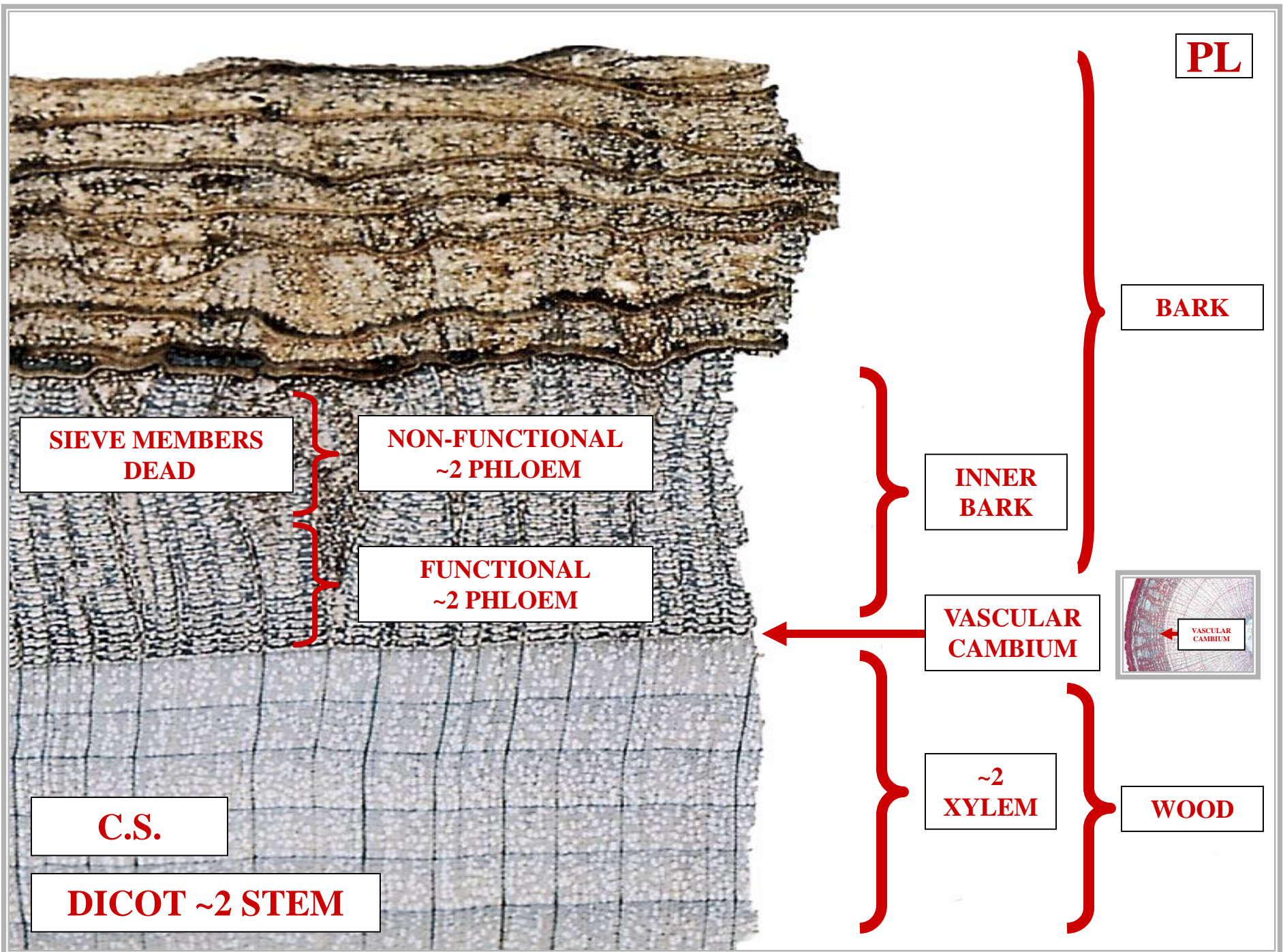


C.S.

**~2
XYLEM**

WOOD

DICOT ~2 STEM



PL

BARK

INNER BARK

VASCULAR CAMBIUM

~2 XYLEM

WOOD

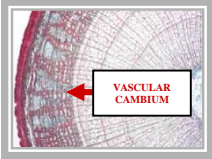
SIEVE MEMBERS DEAD

NON-FUNCTIONAL ~2 PHLOEM

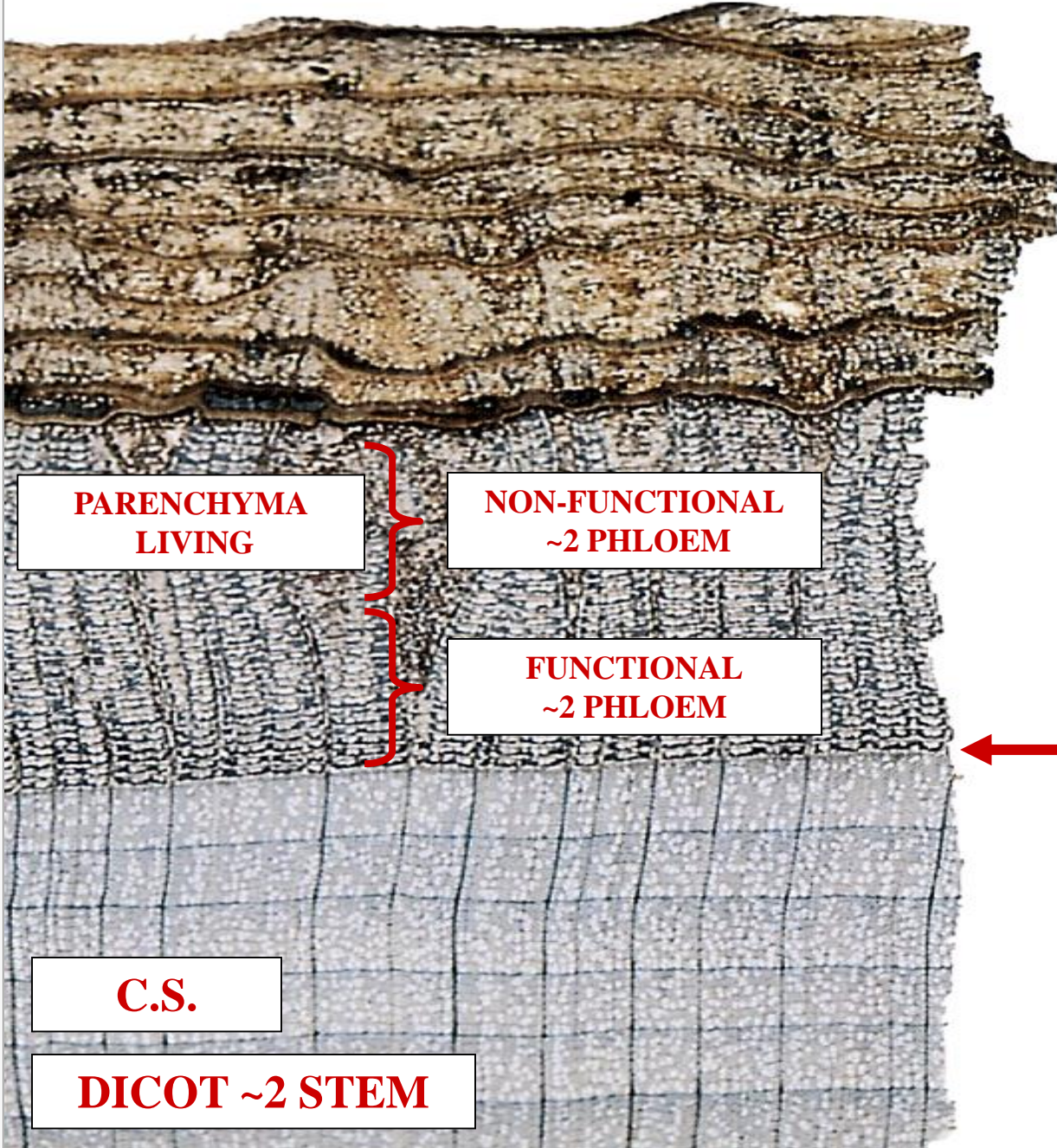
FUNCTIONAL ~2 PHLOEM

C.S.

DICOT ~2 STEM



VASCULAR CAMBIUM



BARK

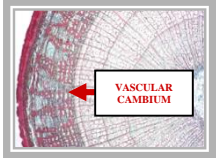
**PARENCHYMA
LIVING**

**NON-FUNCTIONAL
~2 PHLOEM**

**INNER
BARK**

**FUNCTIONAL
~2 PHLOEM**

**VASCULAR
CAMBIUM**



C.S.

**~2
XYLEM**

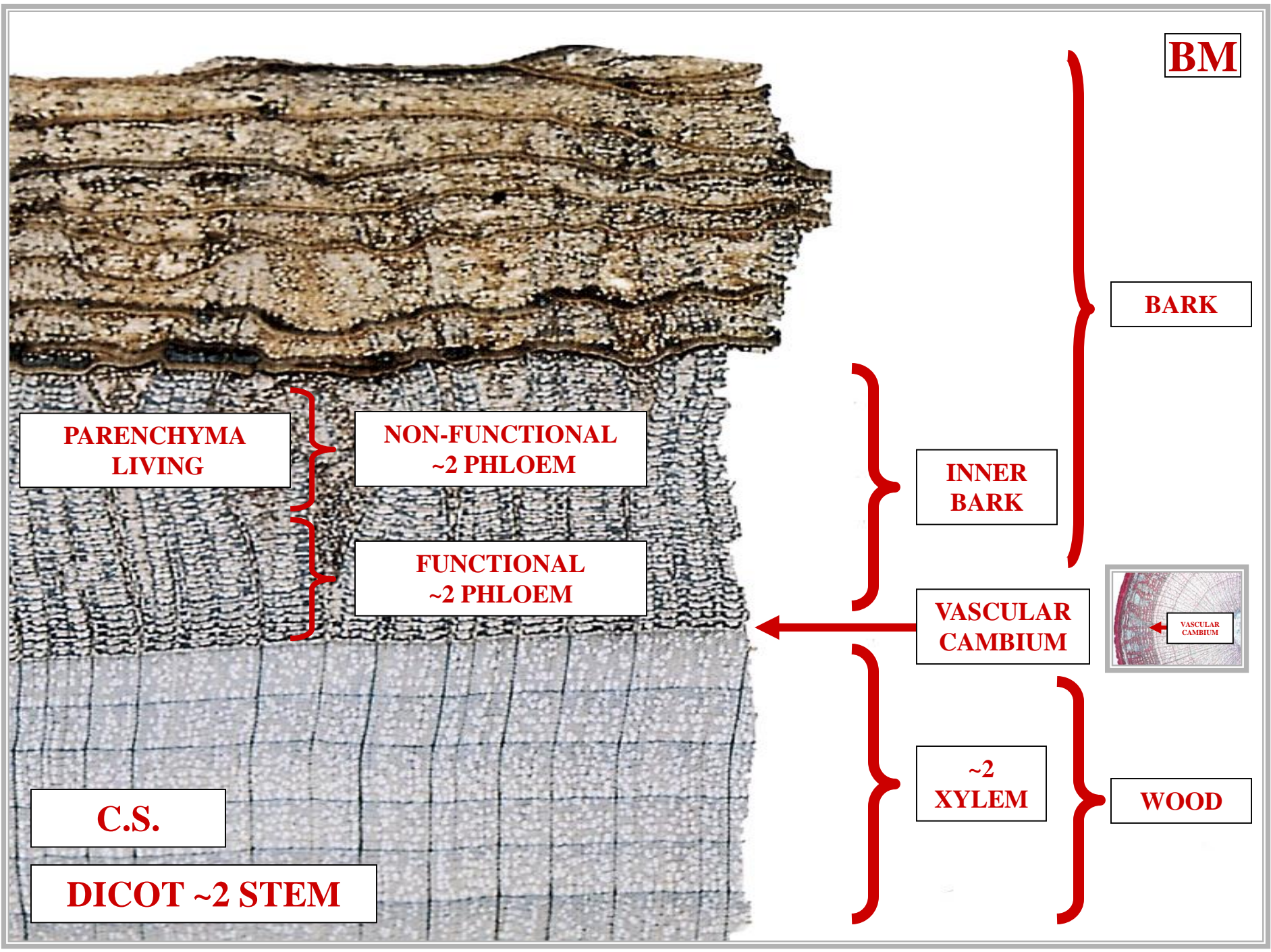
WOOD

DICOT ~2 STEM



NF

**NON-FUNCTIONAL
~2 PHLOEM
PARENCHYMA
CELLS**

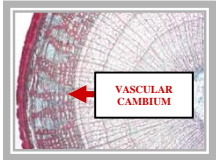


BM

BARK

**INNER
BARK**

**VASCULAR
CAMBIUM**



**VASCULAR
CAMBIUM**

**~2
XYLEM**

WOOD

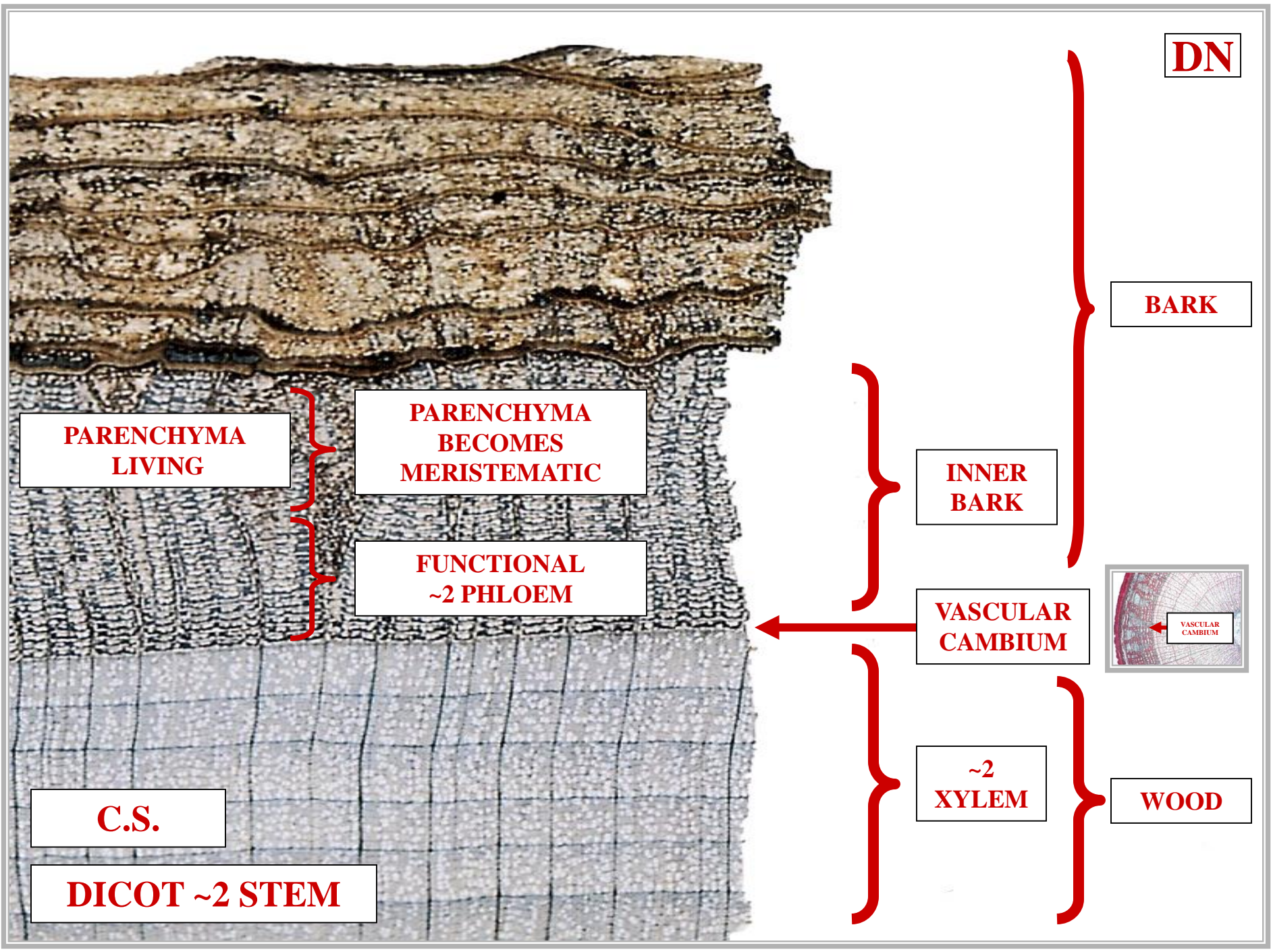
**PARENCHYMA
LIVING**

**NON-FUNCTIONAL
~2 PHLOEM**

**FUNCTIONAL
~2 PHLOEM**

C.S.

DICOT ~2 STEM



DN

BARK

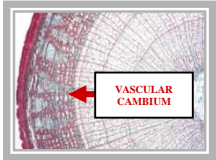
PARENCHYMA
LIVING

PARENCHYMA
BECOMES
MERISTEMATIC

FUNCTIONAL
~2 PHLOEM

INNER
BARK

VASCULAR
CAMBIUM

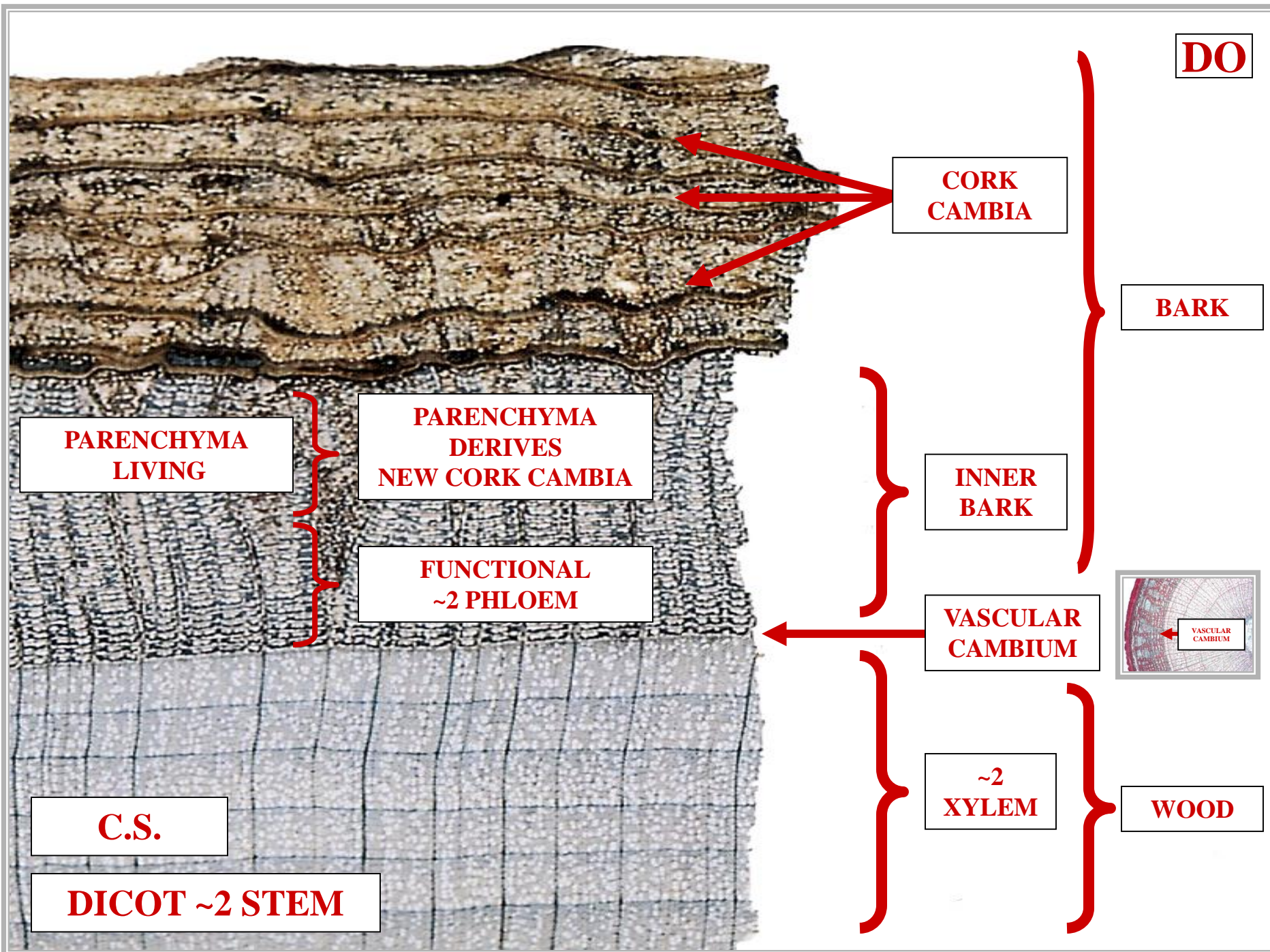


~2
XYLEM

WOOD

C.S.

DICOT ~2 STEM



DO

**CORK
CAMBIA**

BARK

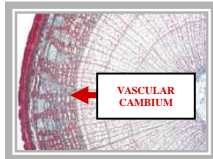
**PARENCHYMA
LIVING**

**PARENCHYMA
DERIVES
NEW CORK CAMBIA**

**INNER
BARK**

**FUNCTIONAL
~2 PHLOEM**

**VASCULAR
CAMBIUM**



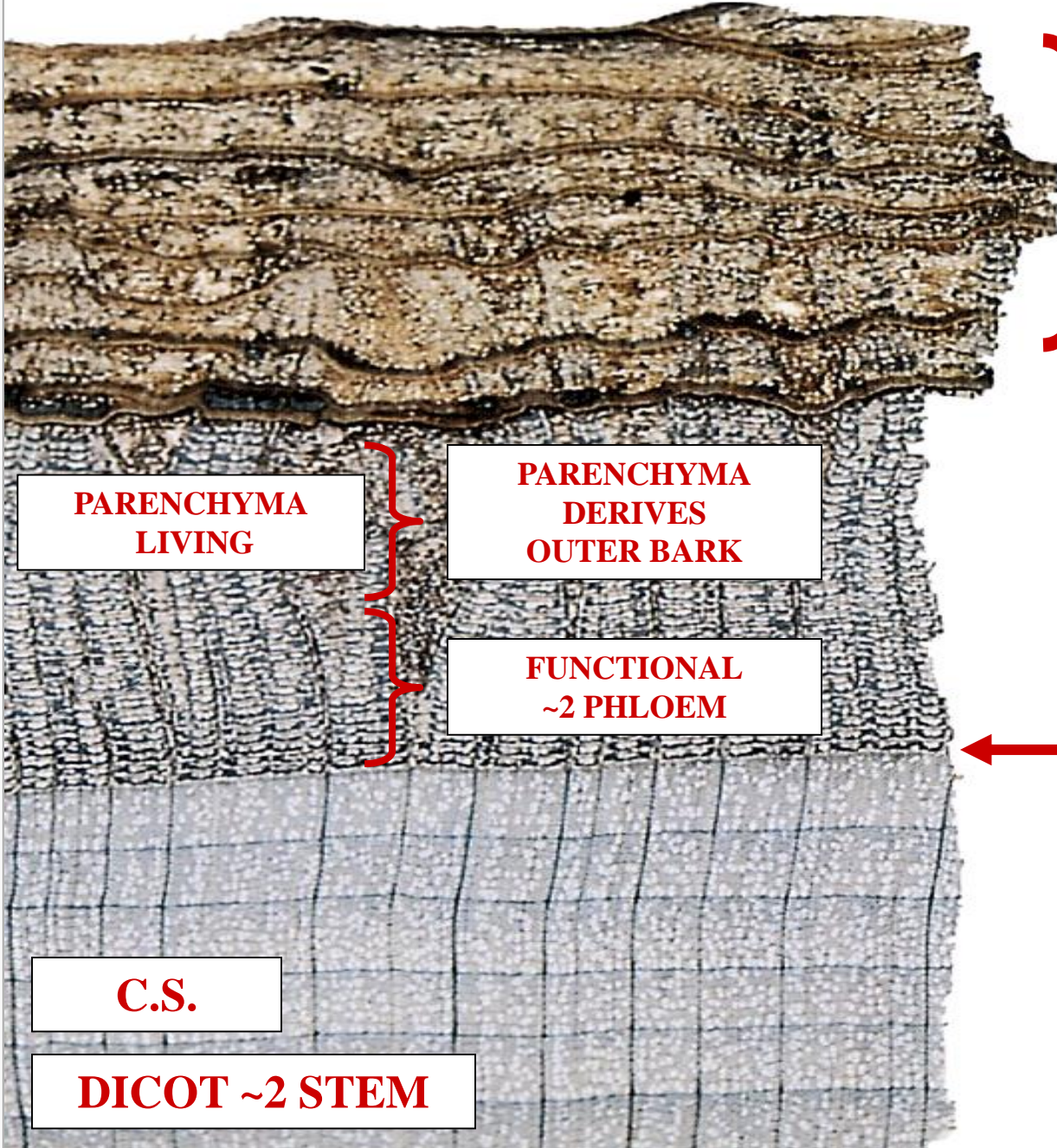
**VASCULAR
CAMBIUM**

**~2
XYLEM**

WOOD

C.S.

DICOT ~2 STEM



OUTER BARK

BARK

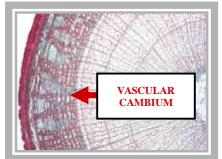
PARENCHYMA LIVING

PARENCHYMA DERIVES OUTER BARK

INNER BARK

FUNCTIONAL ~2 PHLOEM

VASCULAR CAMBIUM



C.S.

~2 XYLEM

WOOD

DICOT ~2 STEM

OUTER BARK

OUTER BARK