

GINKGO



GINKGO





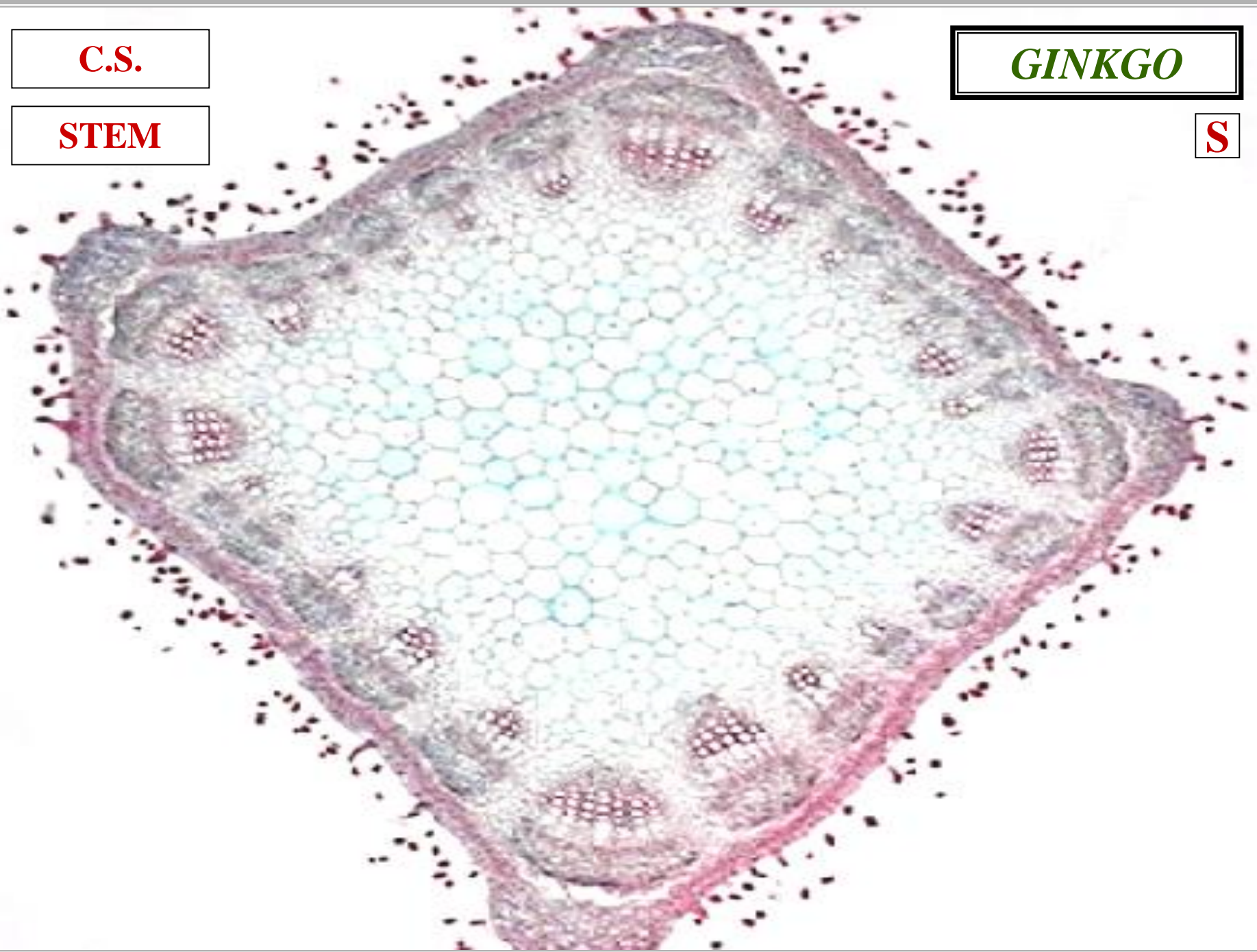
STEM STELE

C.S.

STEM

GINKGO

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C.S.

STEM

GINKGO



SIPHONOSTELE



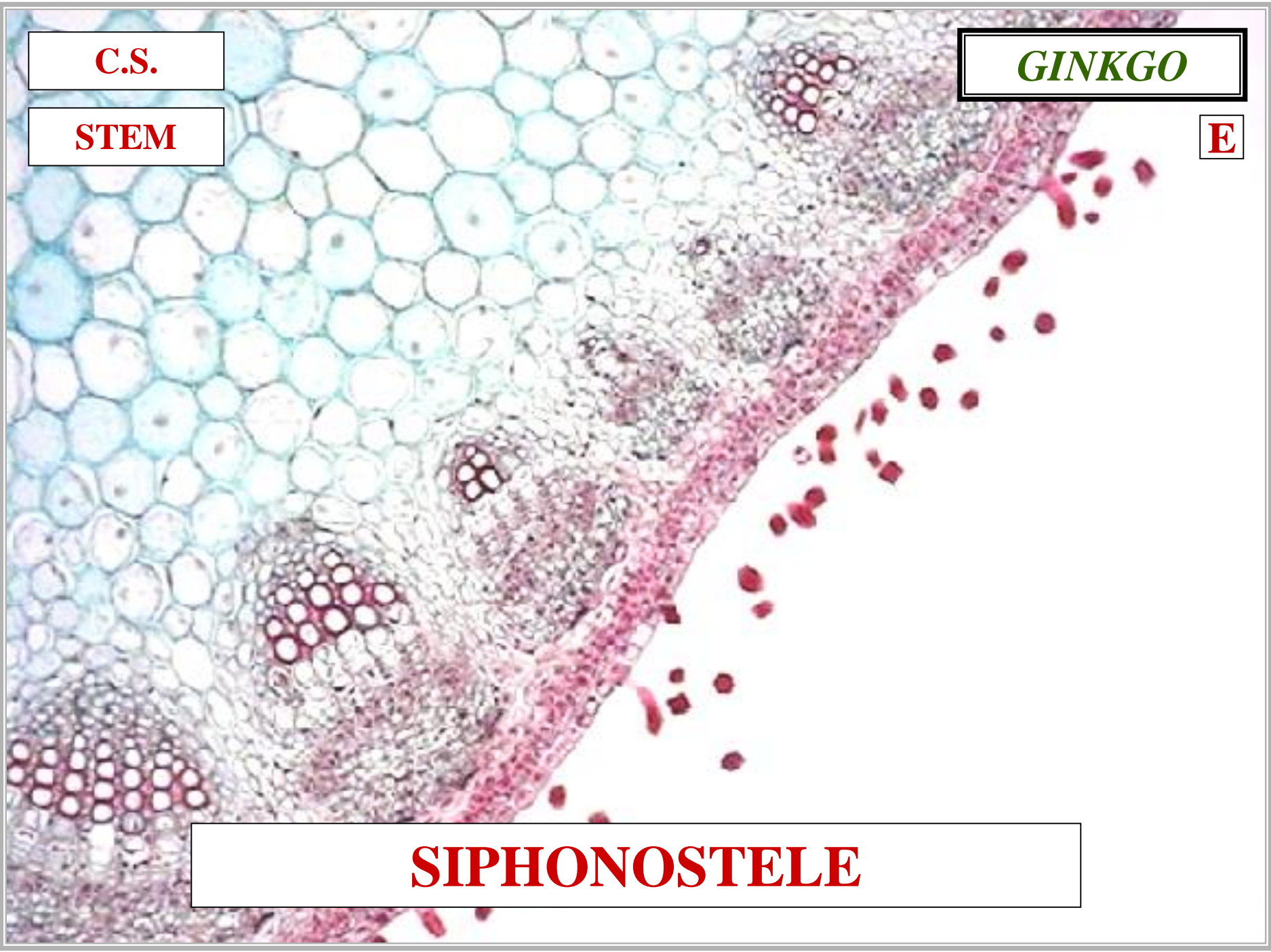
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STEM

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SIPHONOSTELE



C.S.

STEM

GINKGO

VC

SIPHONOSTELE / EUSTELE



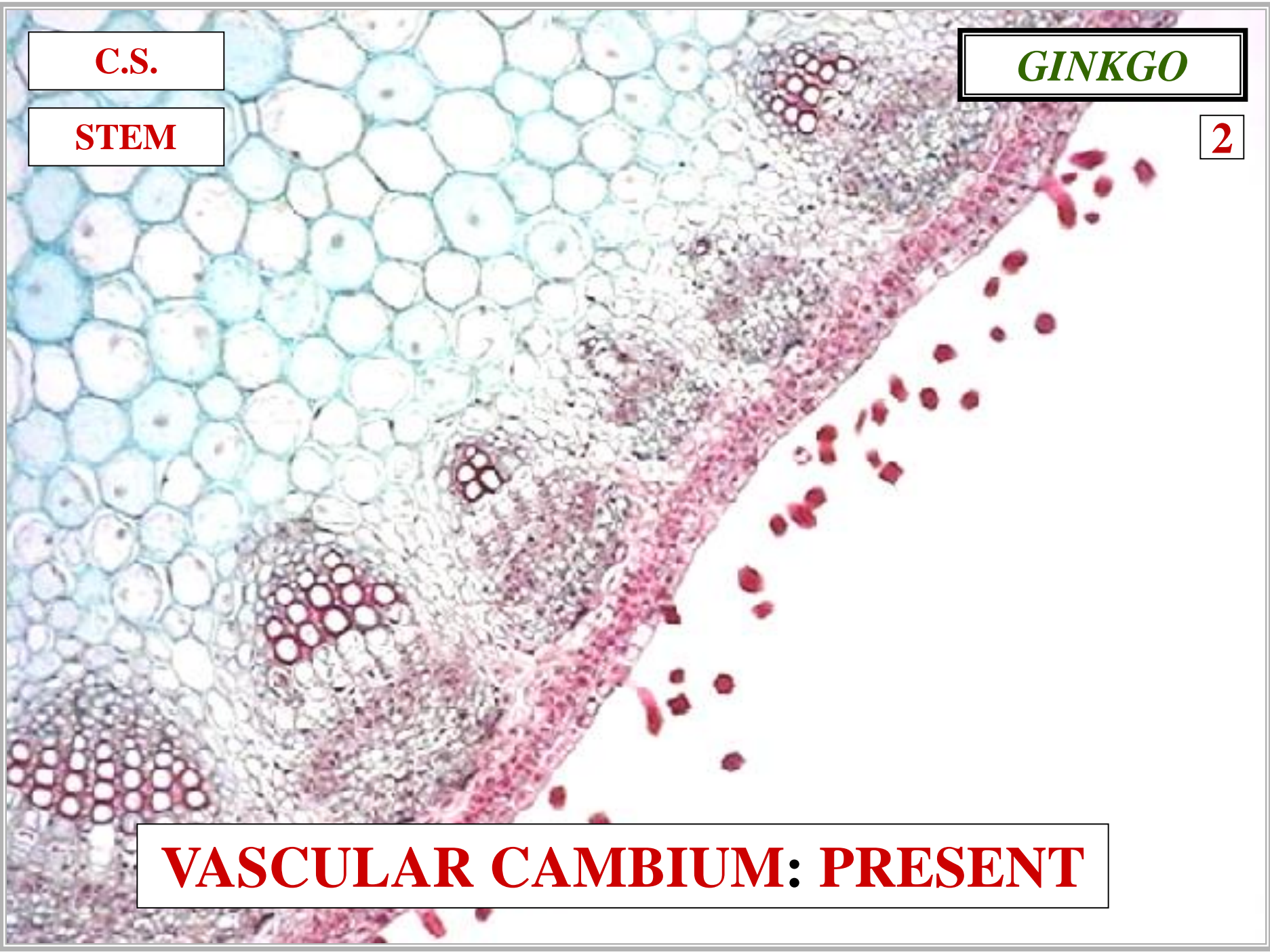
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STEM

GINKGO

2

VASCULAR CAMBIUM: PRESENT



C.S.

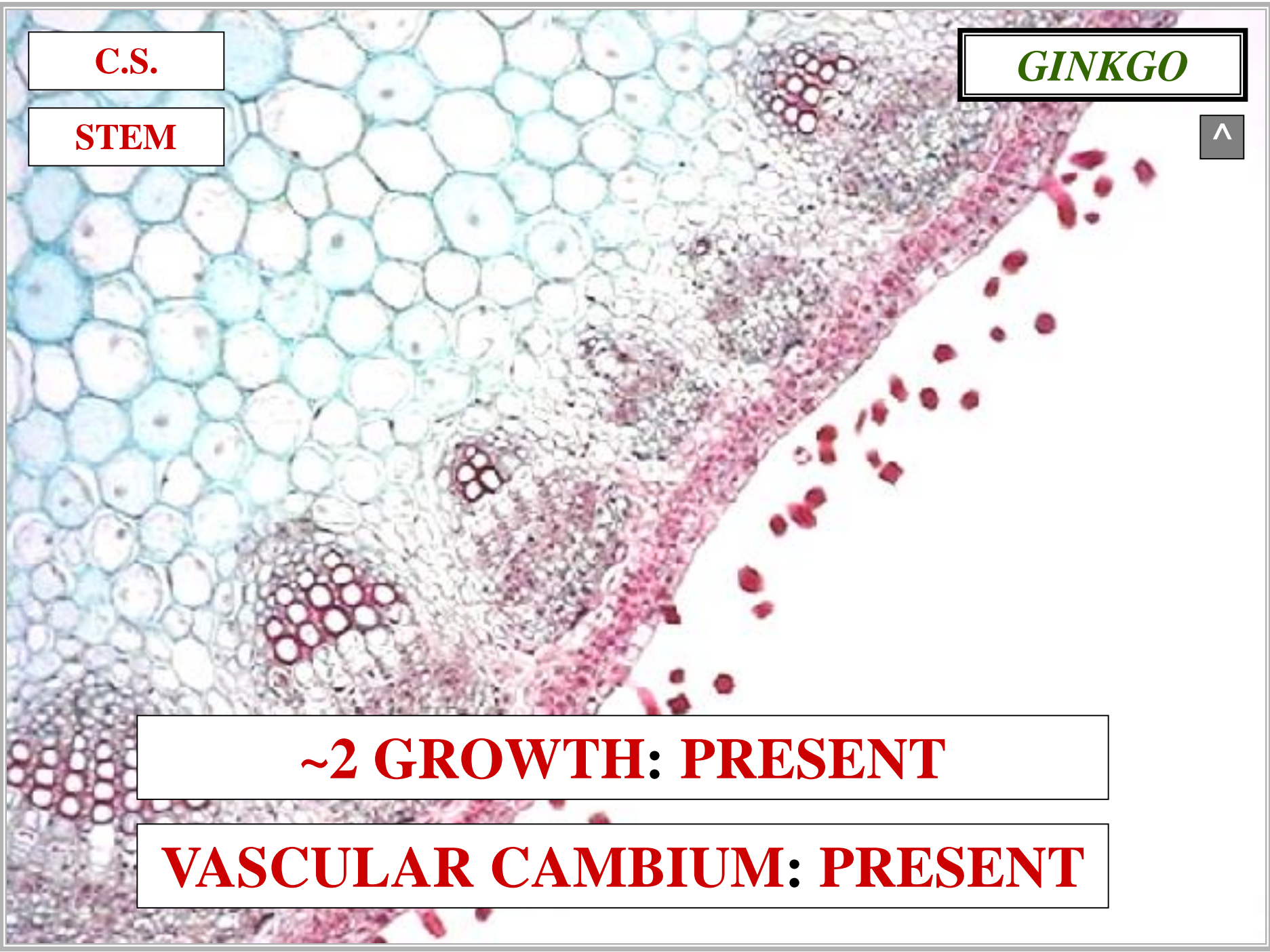
STEM

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~2 GROWTH: PRESENT

VASCULAR CAMBIUM: PRESENT





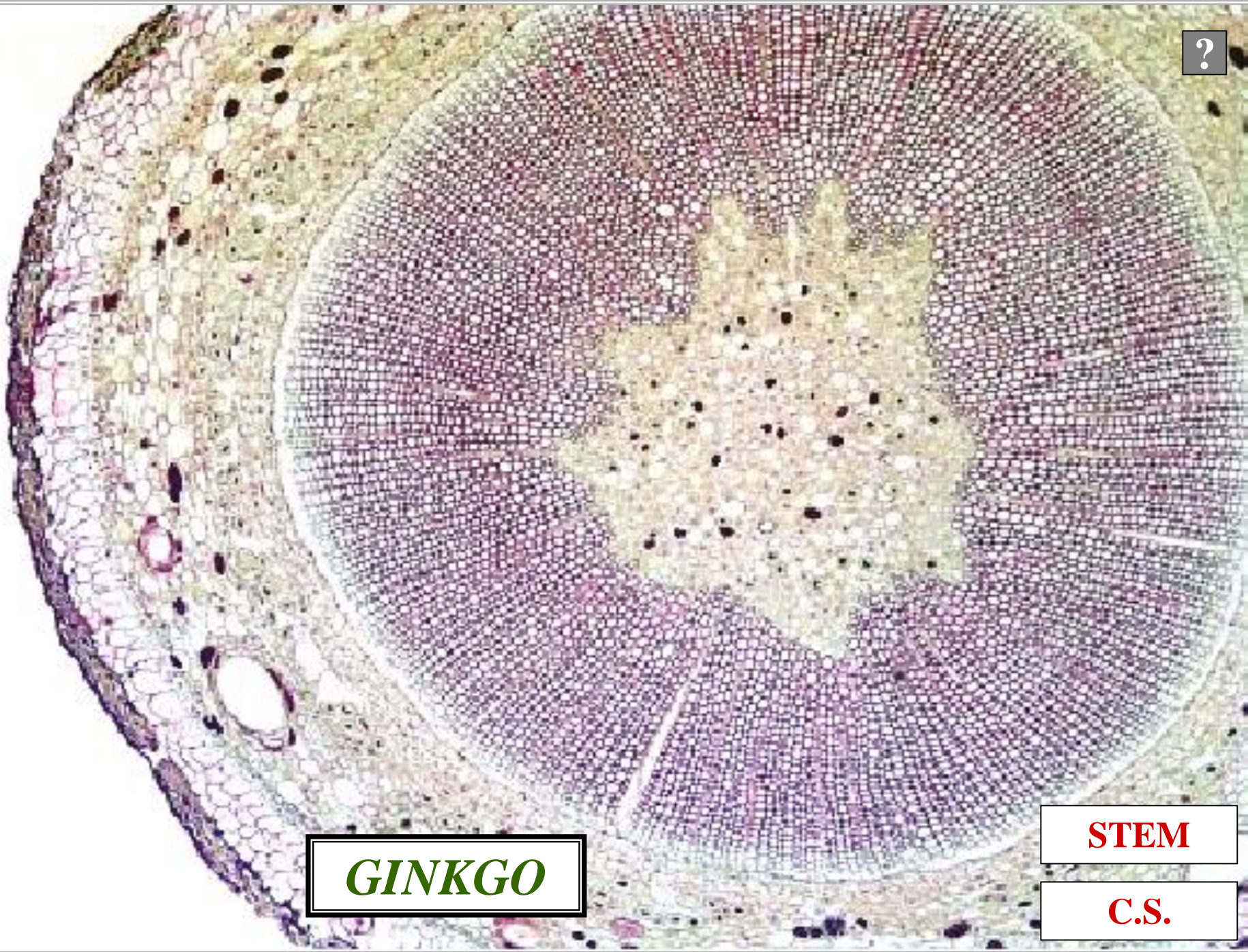
SECONDARY GROWTH ANATOMY

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GINKGO

STEM

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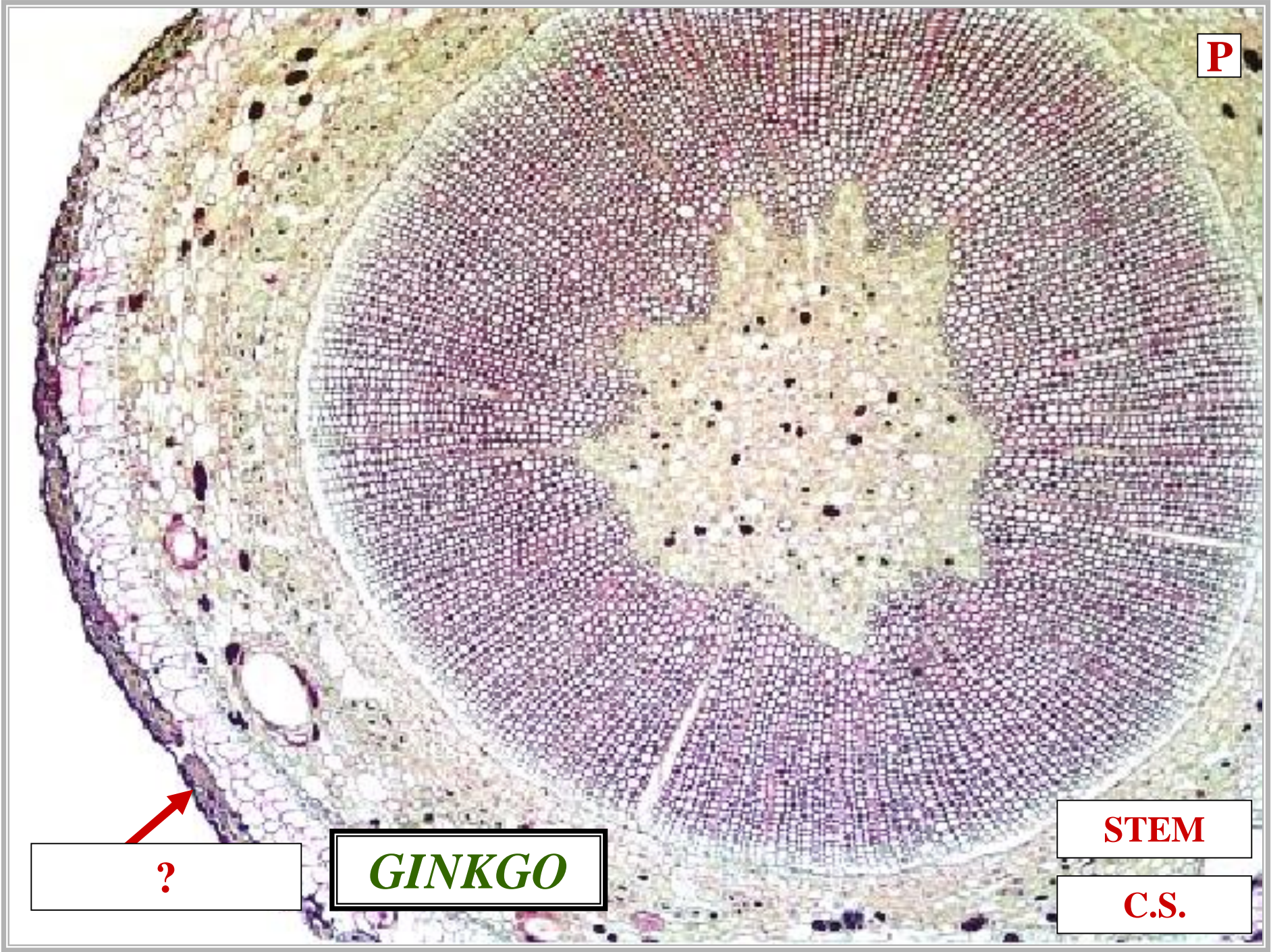
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STEM

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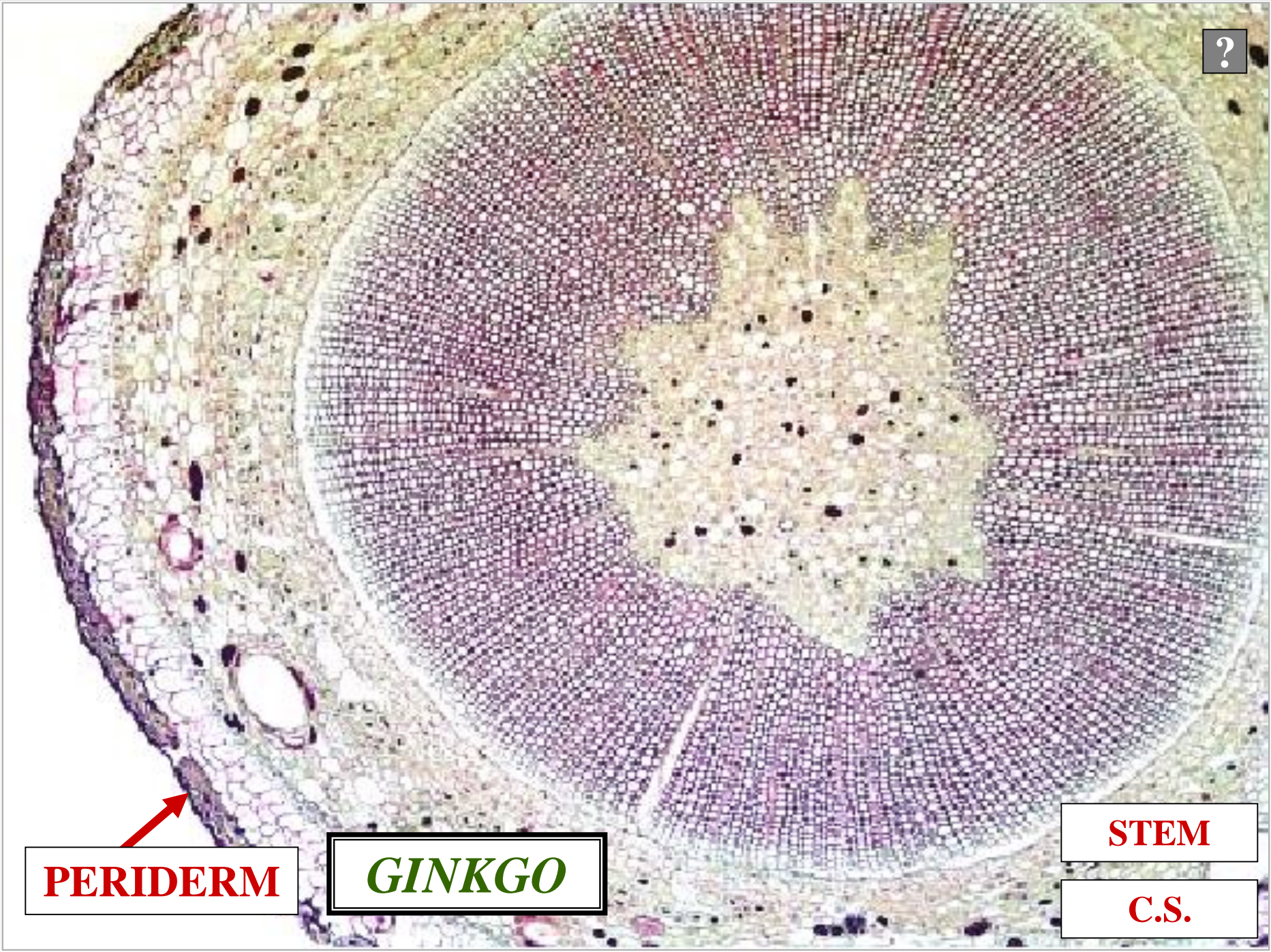
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PERIDERM

GINKGO

STEM

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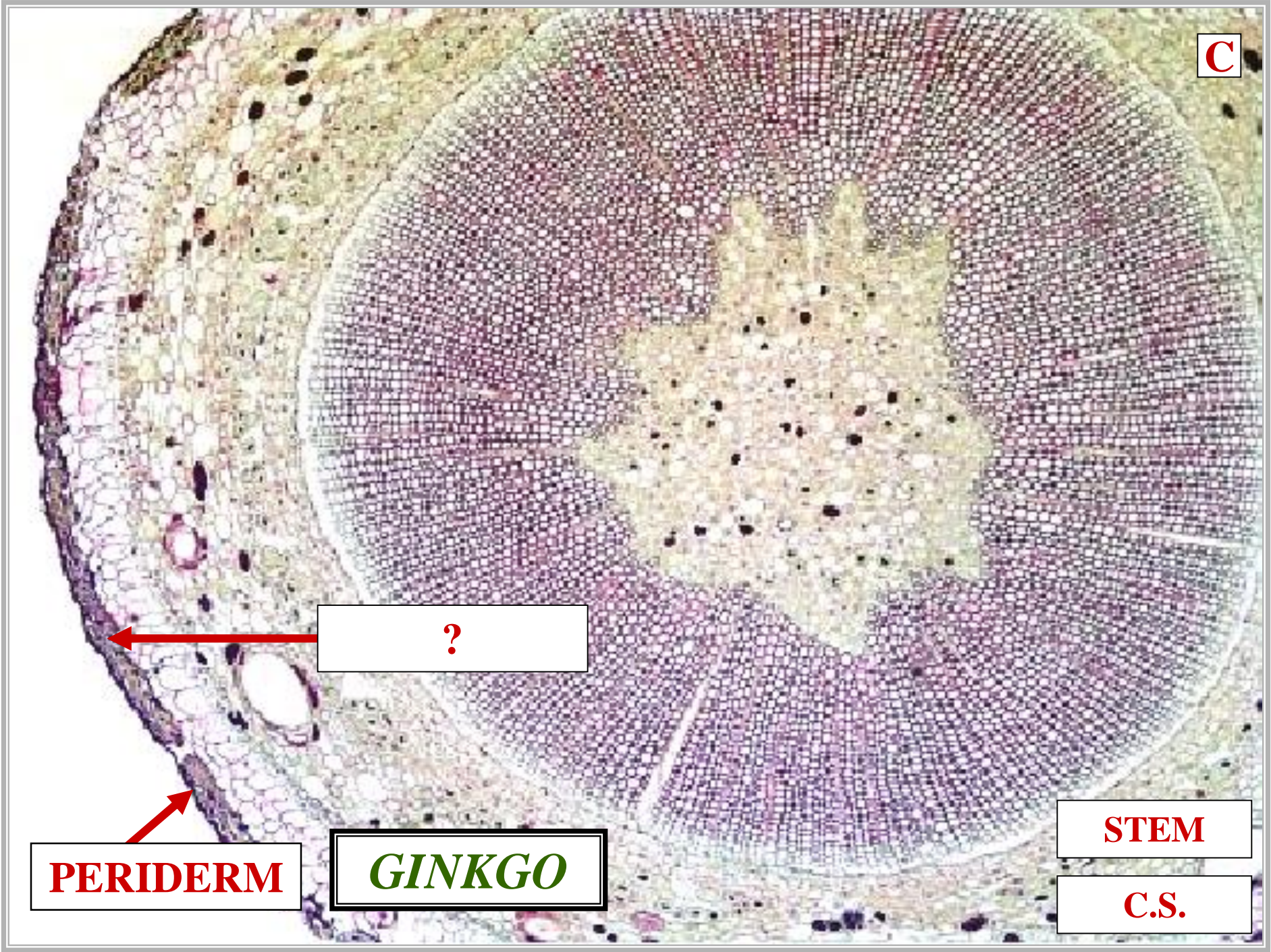
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PERIDERM

GINKGO

STEM

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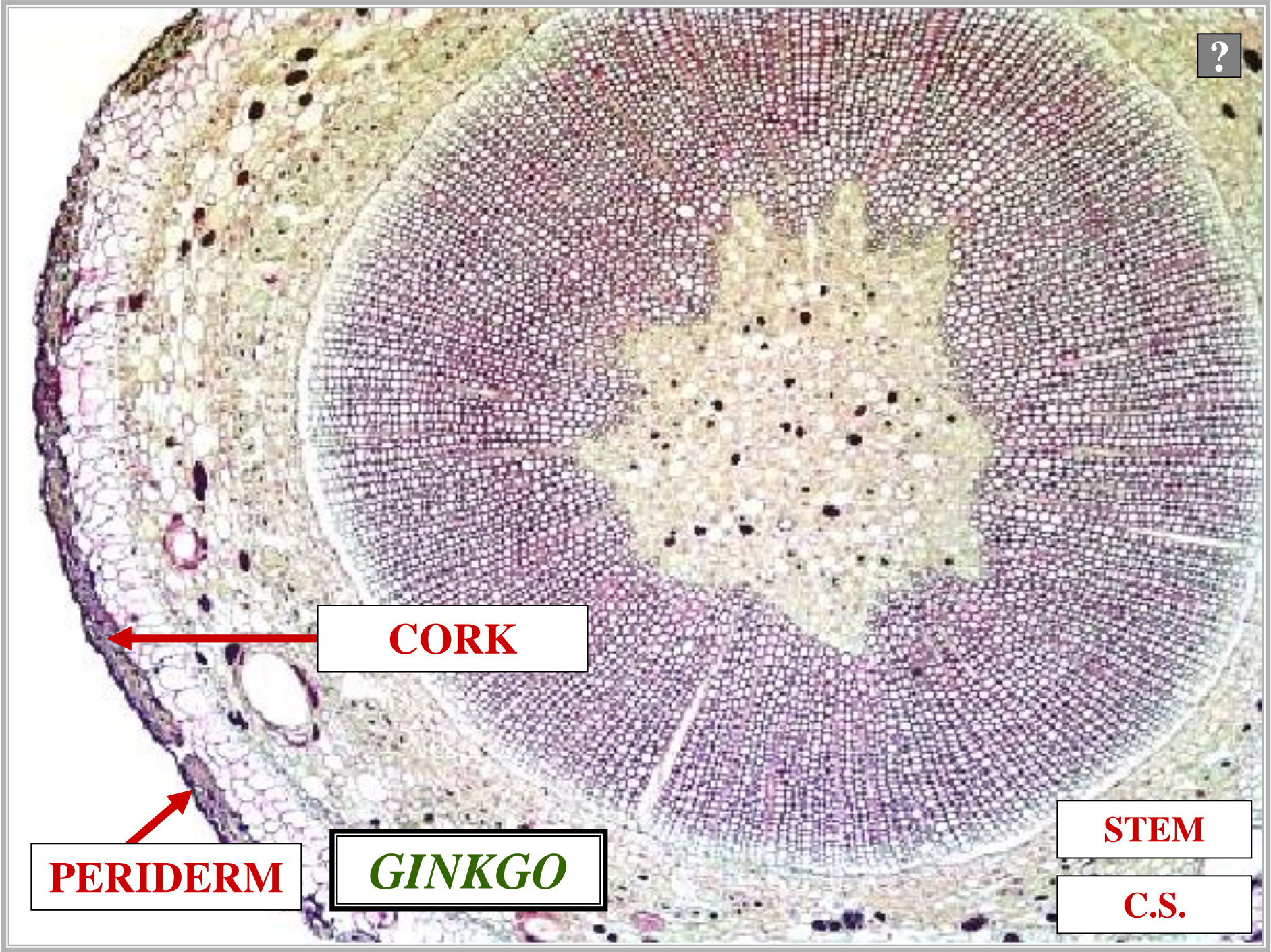
CORK

PERIDERM

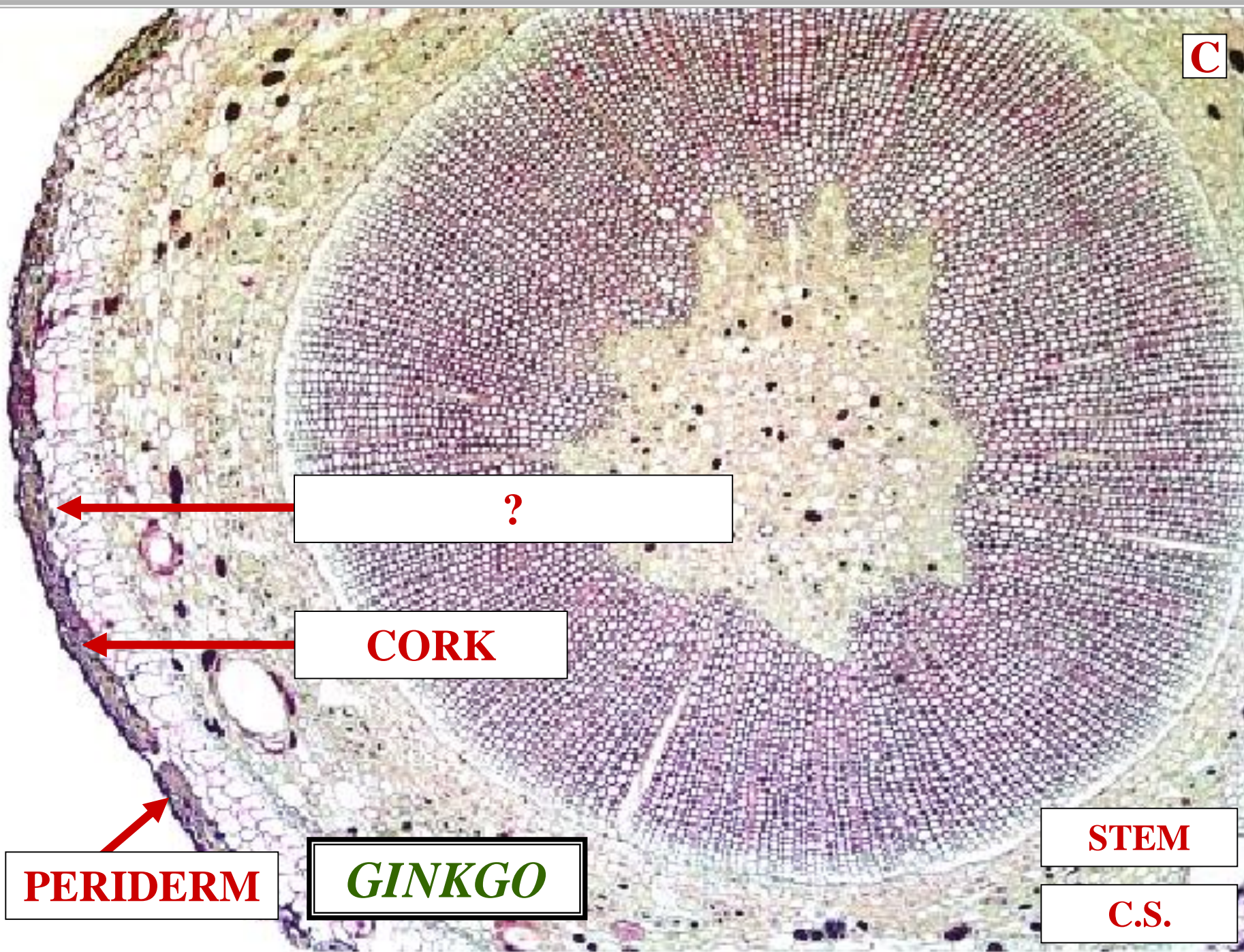
GINKGO

STEM

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CORK

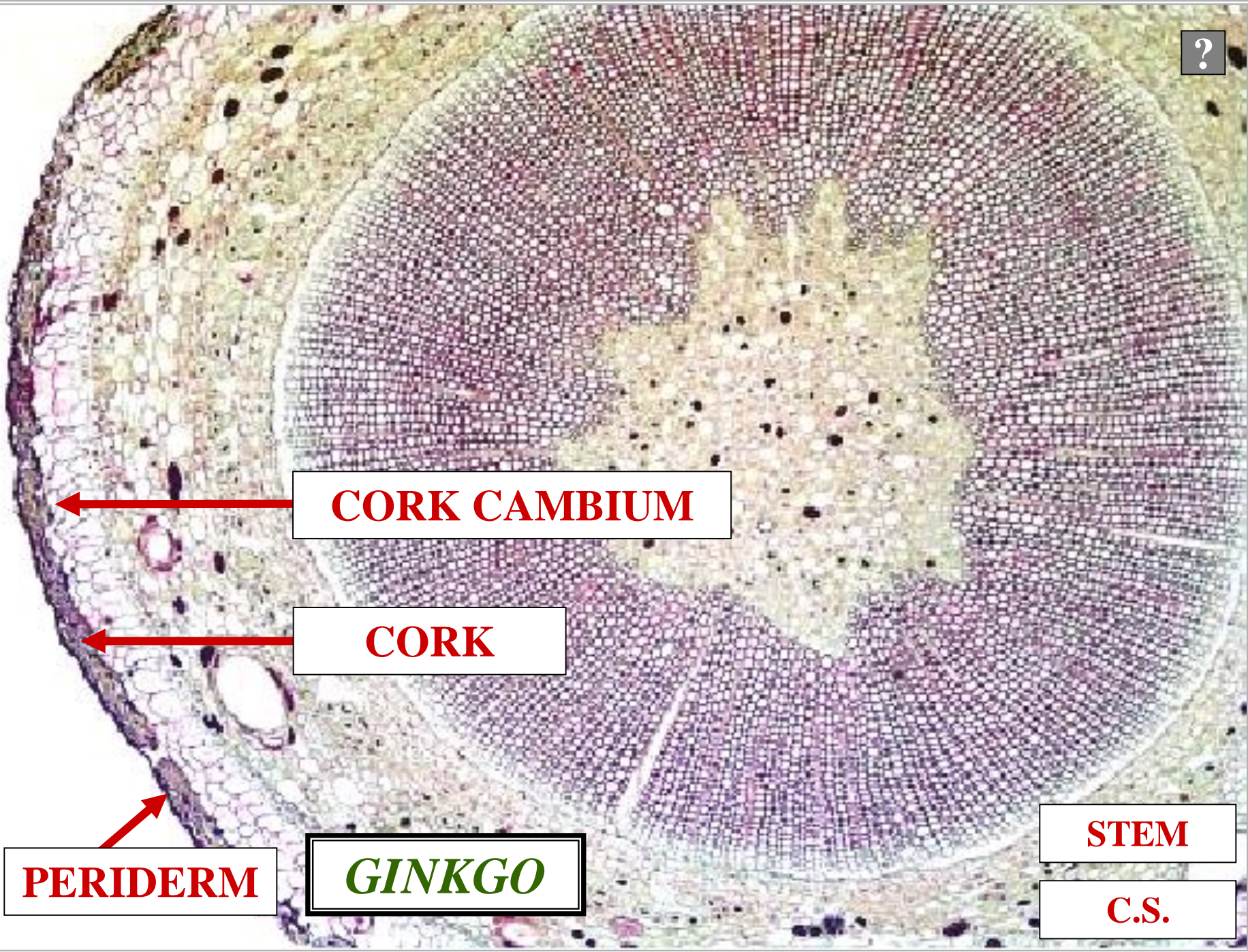
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GINKGO

STEM

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CORK CAMBIUM

CORK

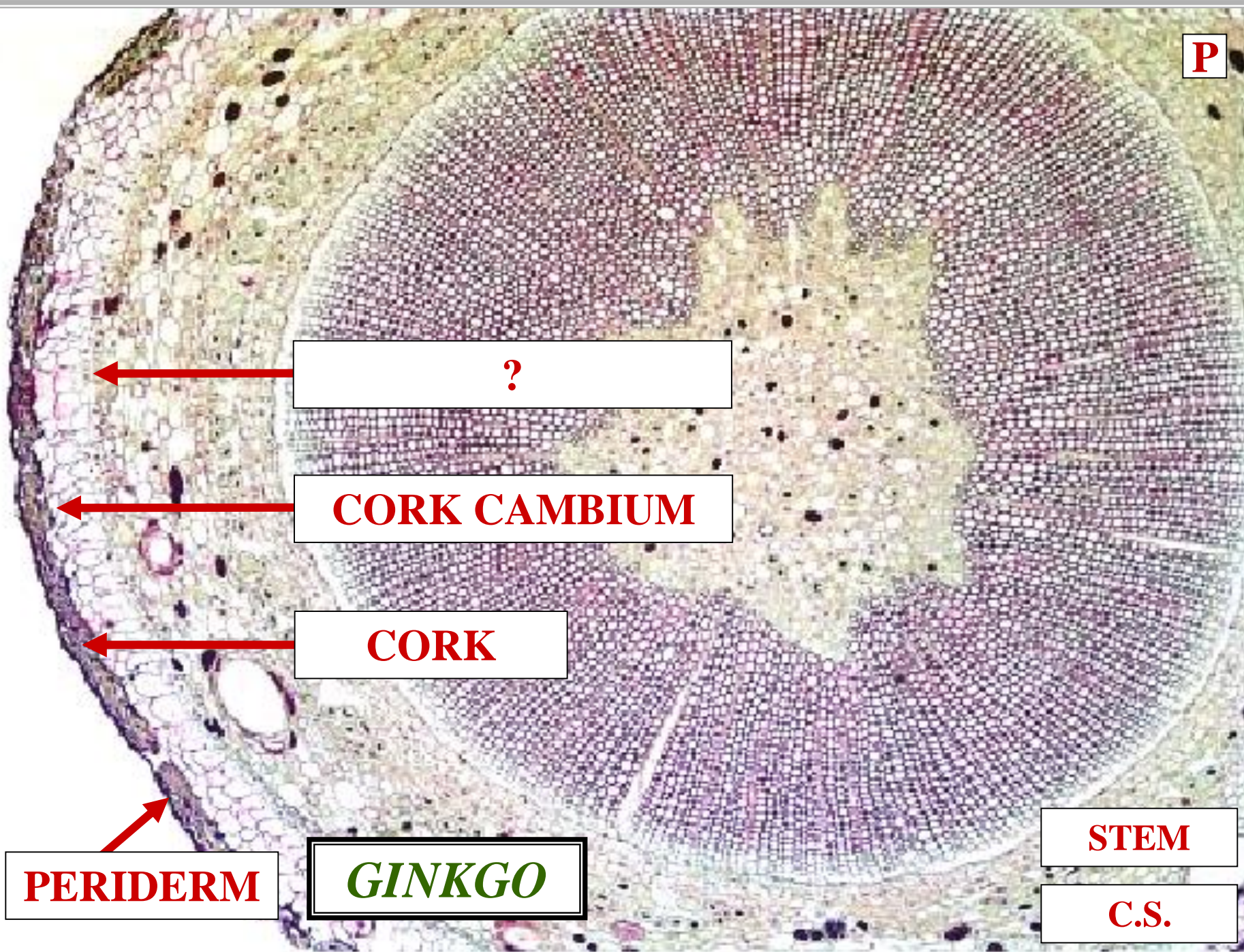
PERIDERM

GINKGO

STEM

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CORK CAMBIUM

CORK

PERIDERM

GINKGO

STEM

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PHELLODERM

CORK CAMBIUM

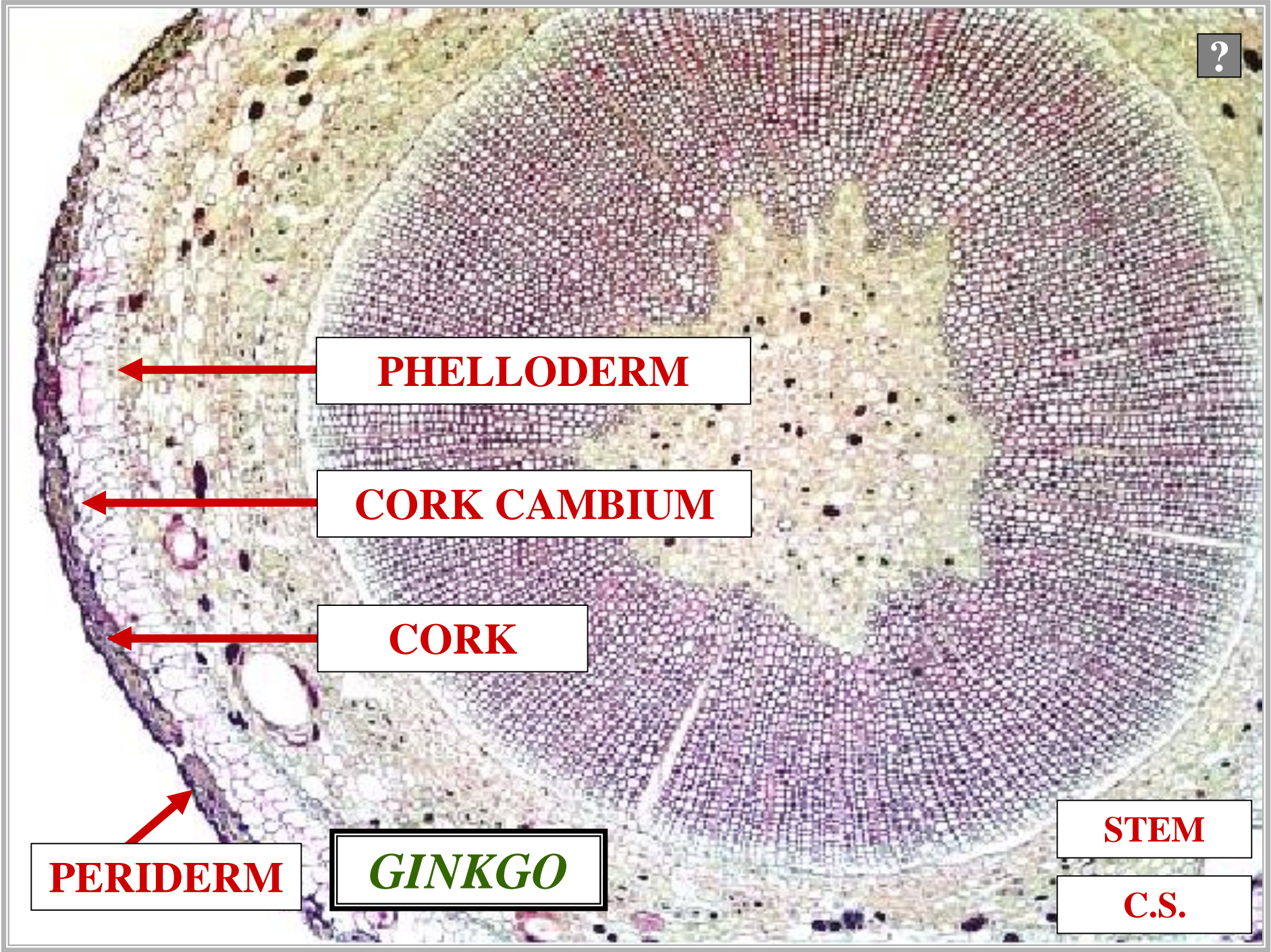
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PERIDERM

GINKGO

STEM

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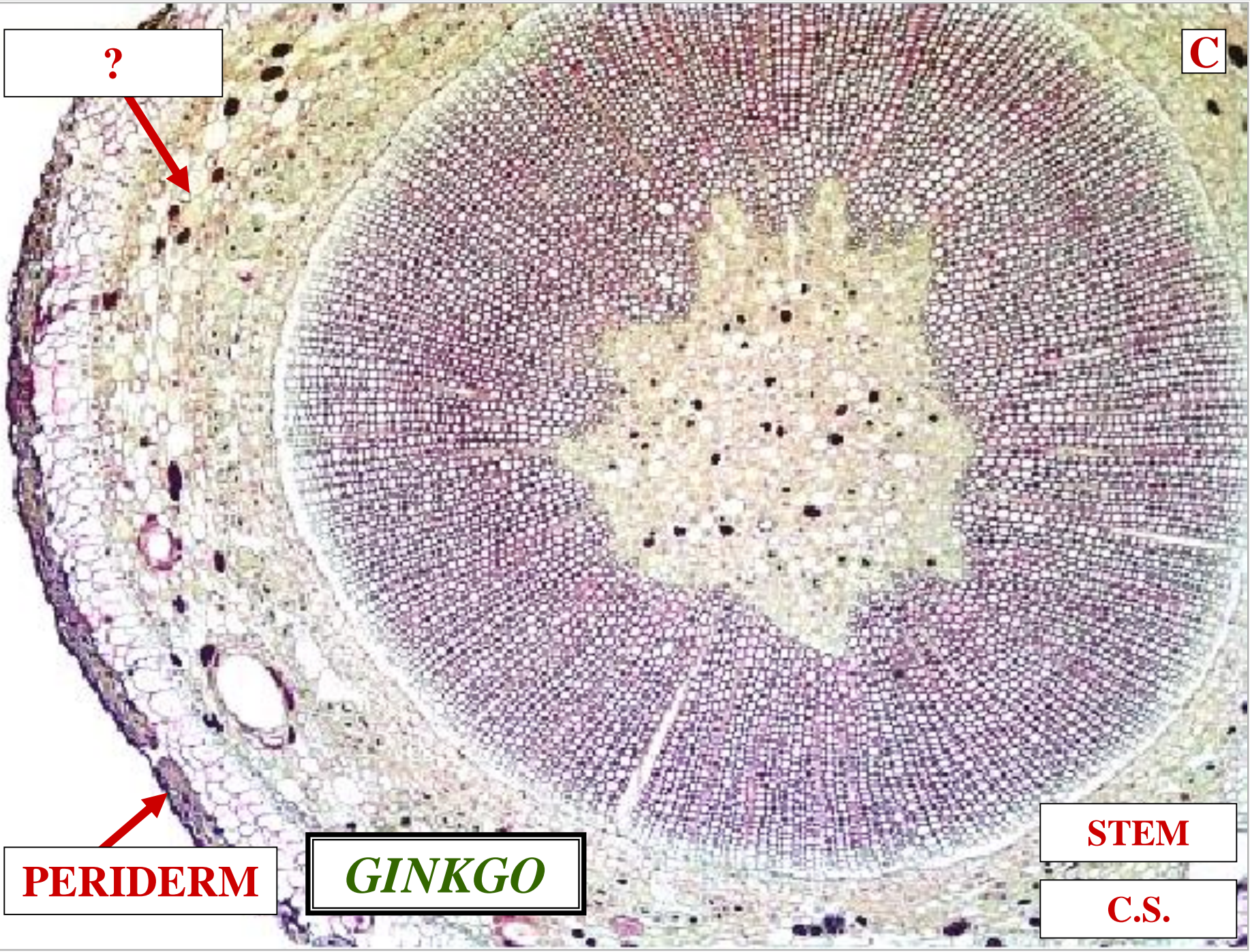
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PERIDERM

GINKGO

STEM

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CORTEX



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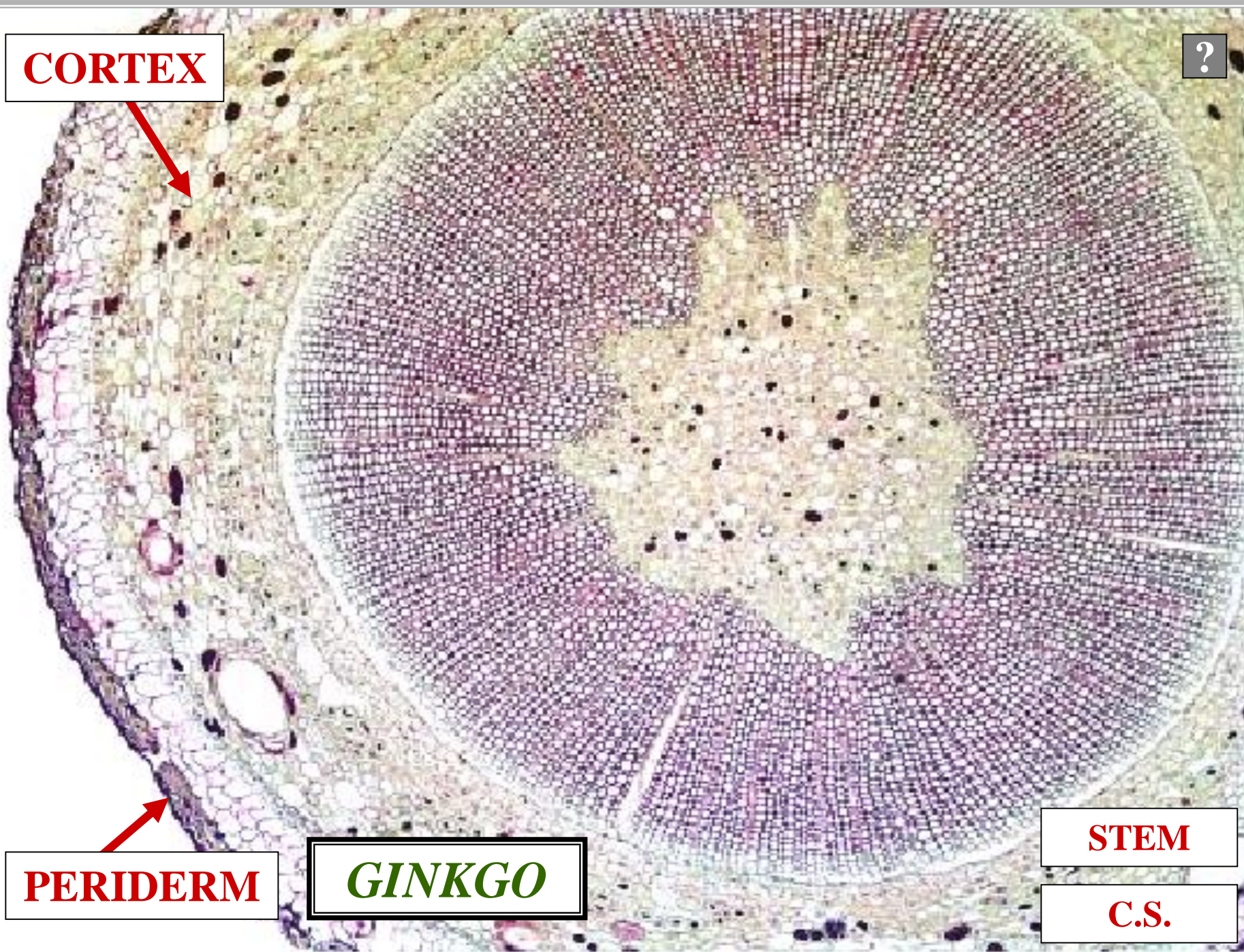
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GINKGO

STEM

C.S.



CORTEX

R

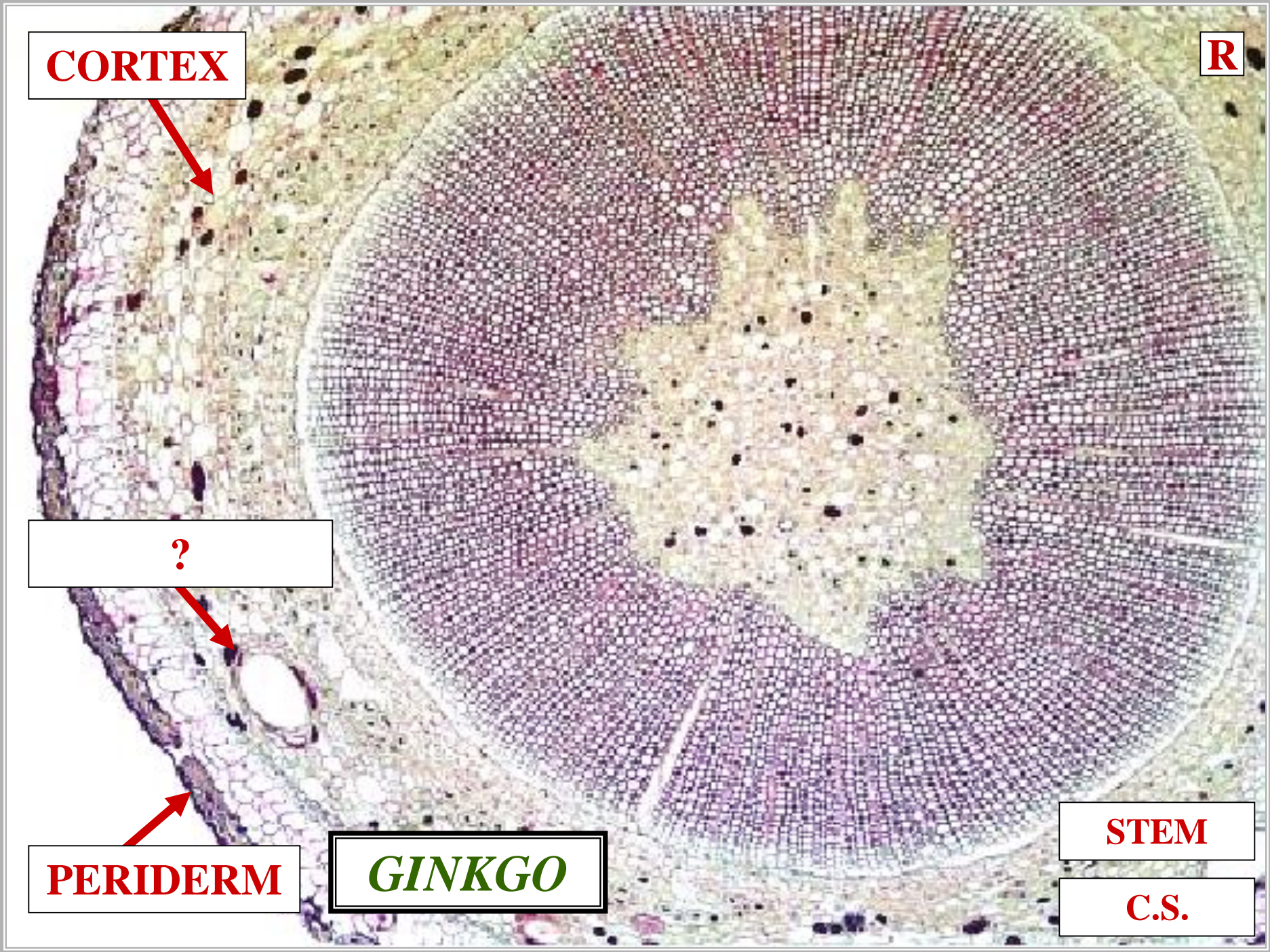
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PERIDERM

GINKGO

STEM

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R

CORTEX



RESIN DUCT



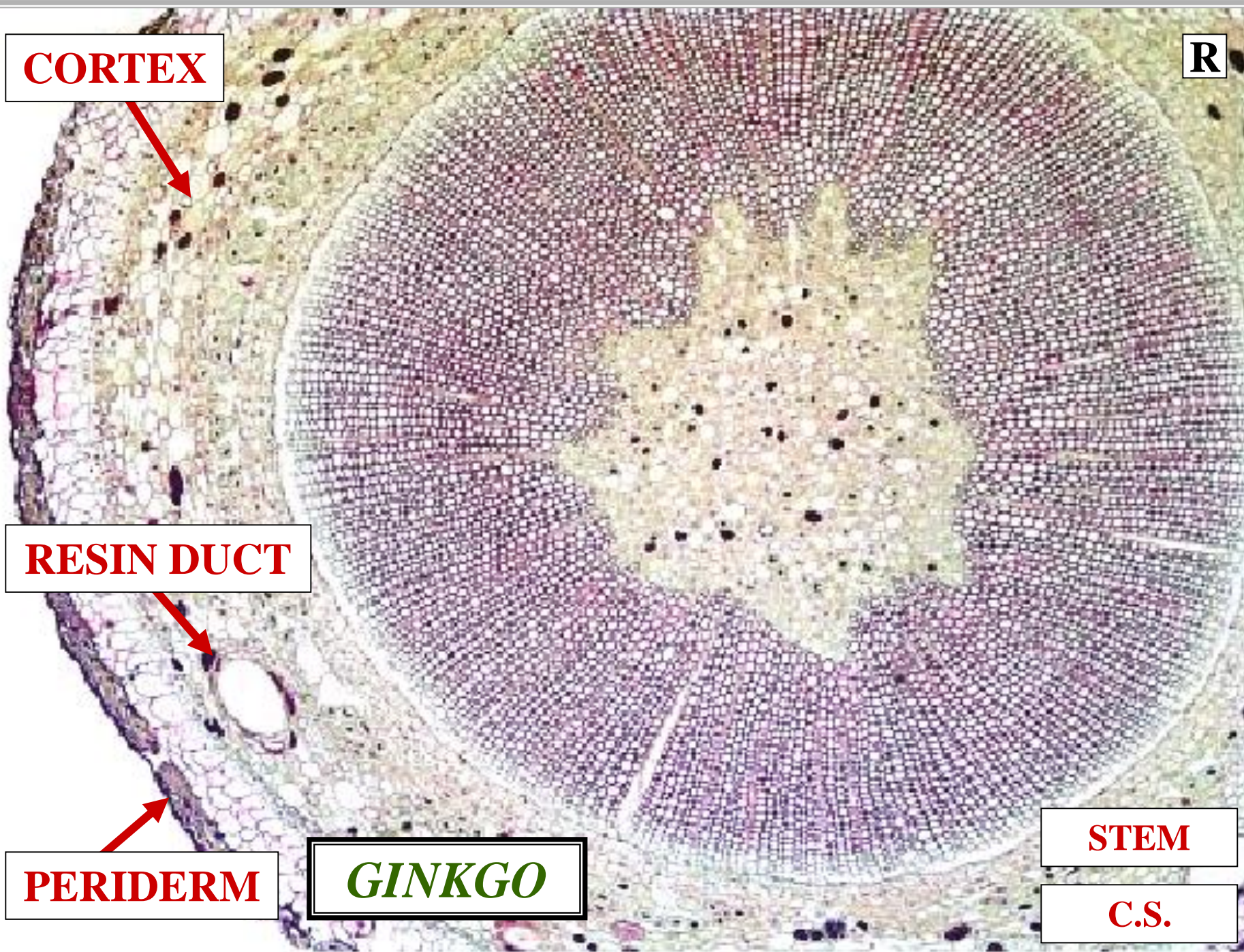
PERIDERM



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RESIN DUCT

GINKGOPHYTA
RESIN DUCT



RESIN INHIBITS
HERBIVORES

GINKGOPHYTA
RESIN DUCT

CORTEX

VC

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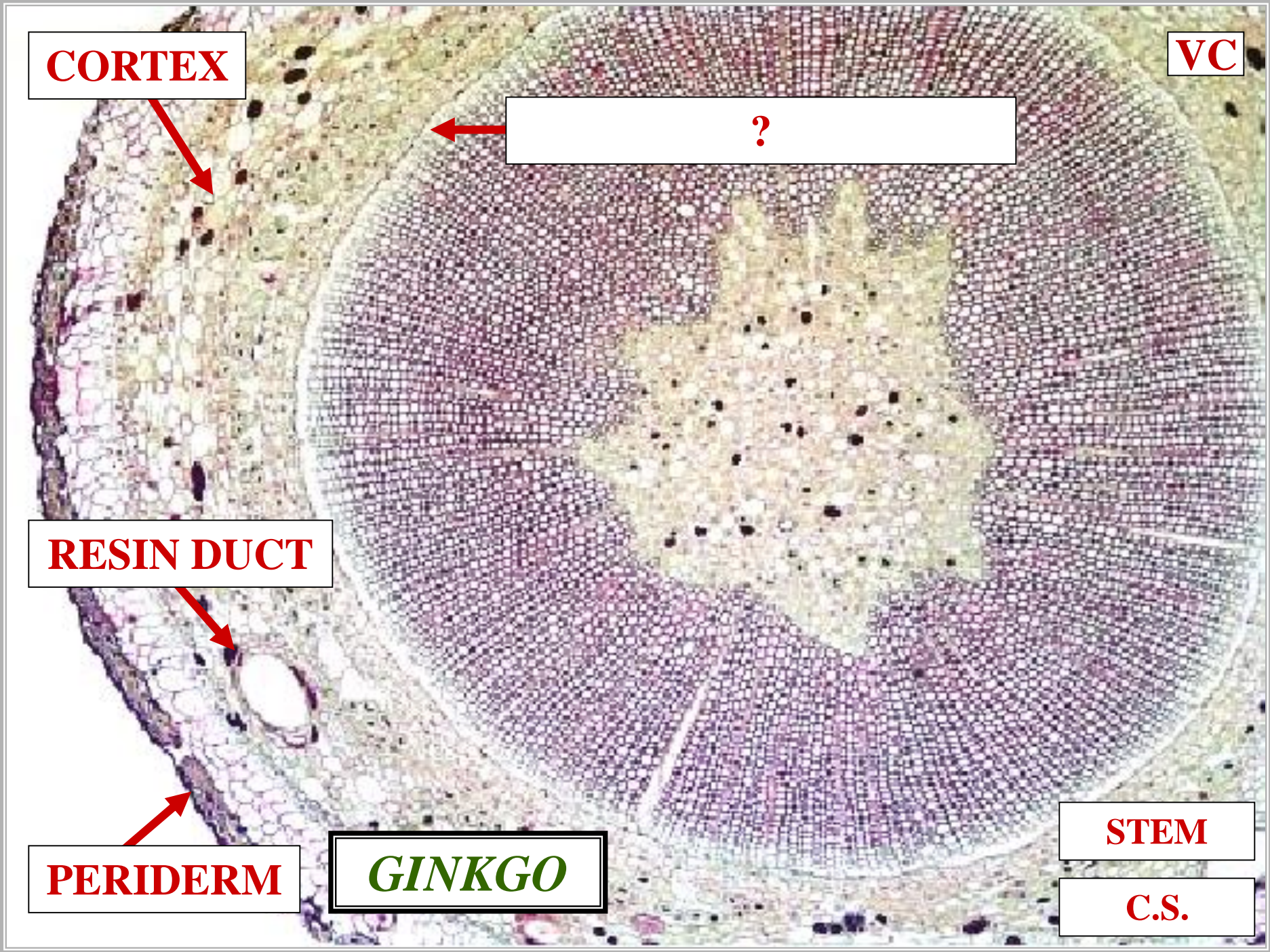
RESIN DUCT

PERIDERM

GINKGO

STEM

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CORTEX



VASCULAR CAMBIUM



RESIN DUCT



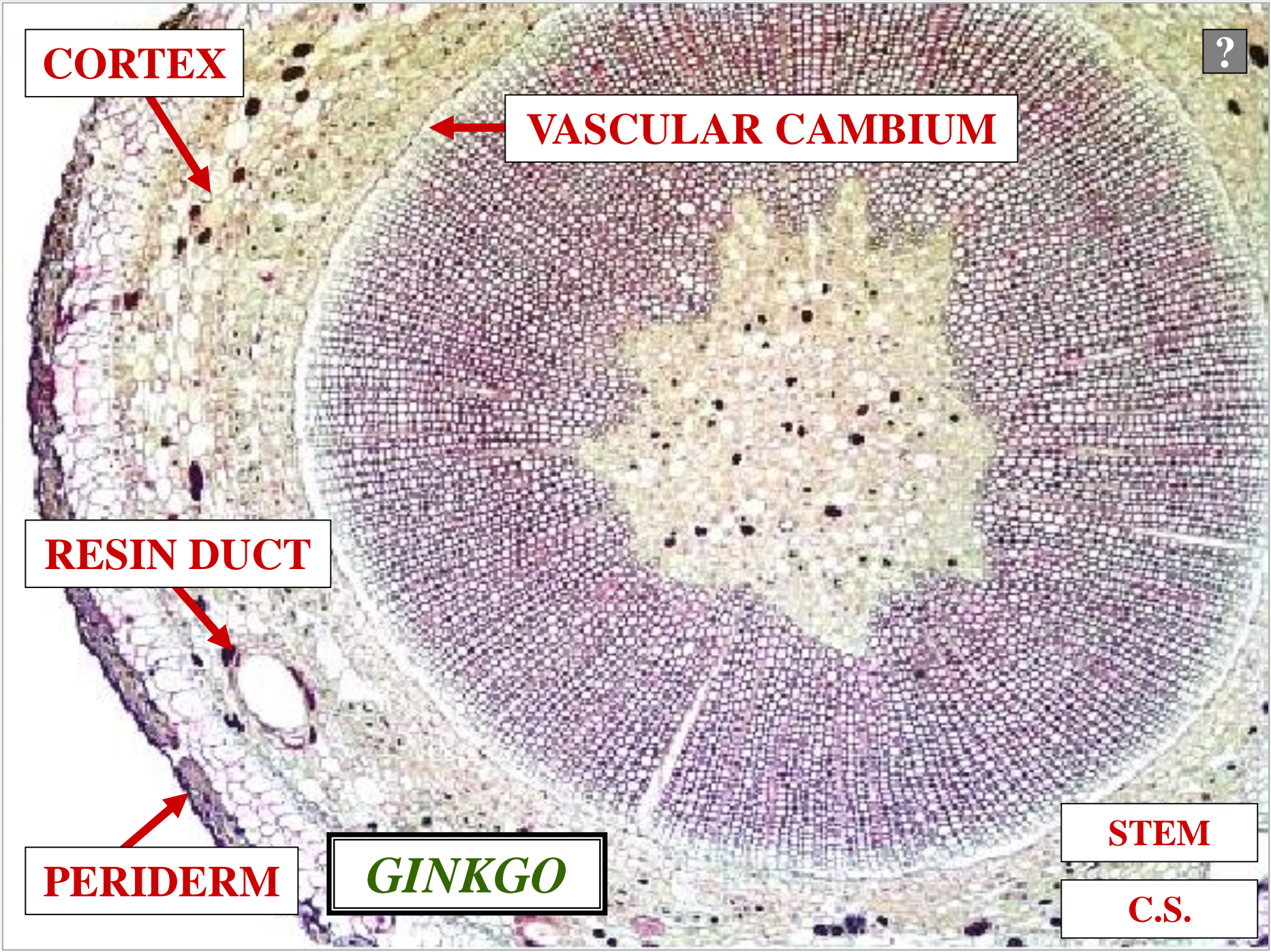
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B

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VASCULAR CAMBIUM



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RESIN DUCT



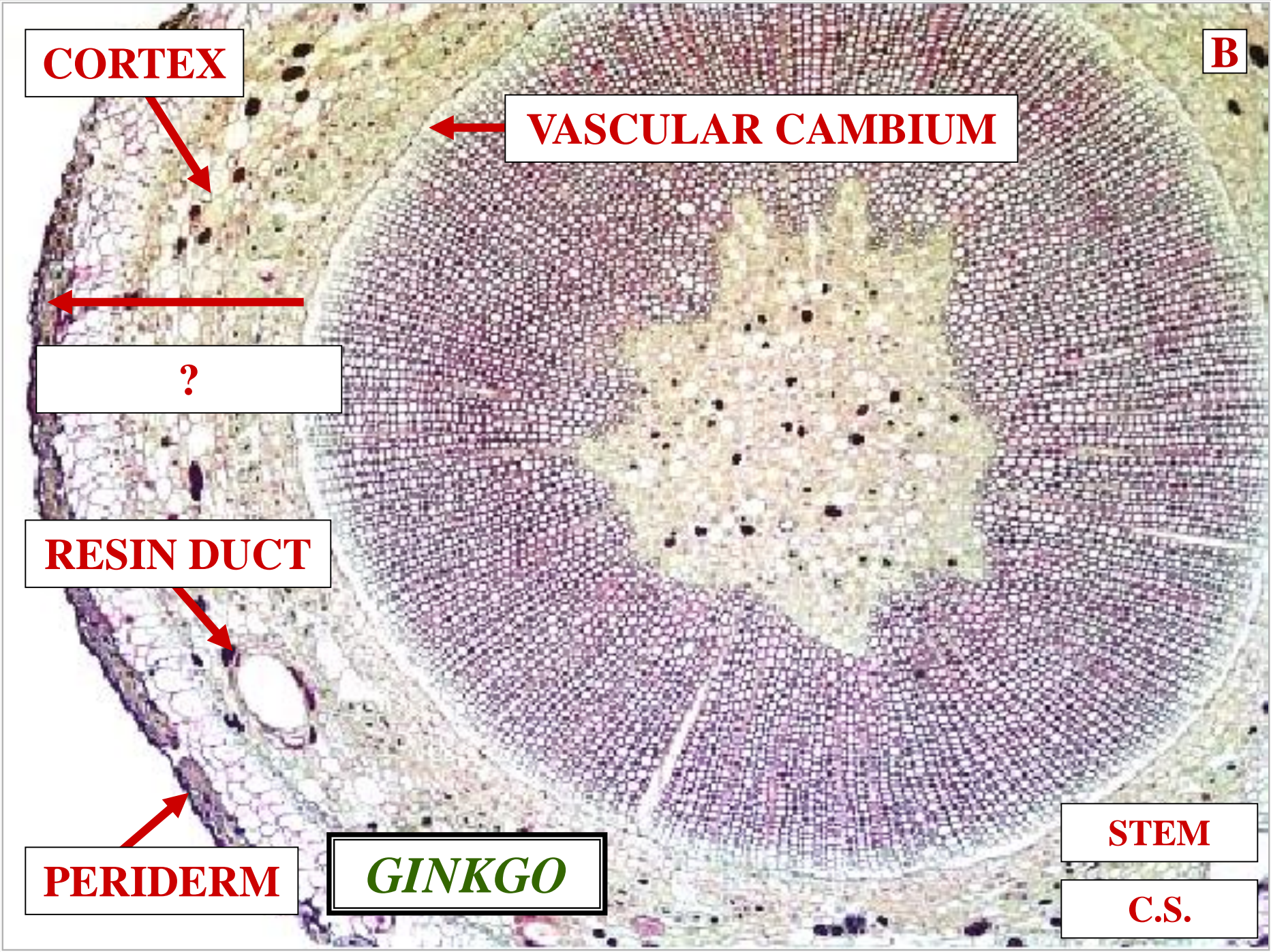
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VASCULAR CAMBIUM



BARK



RESIN DUCT



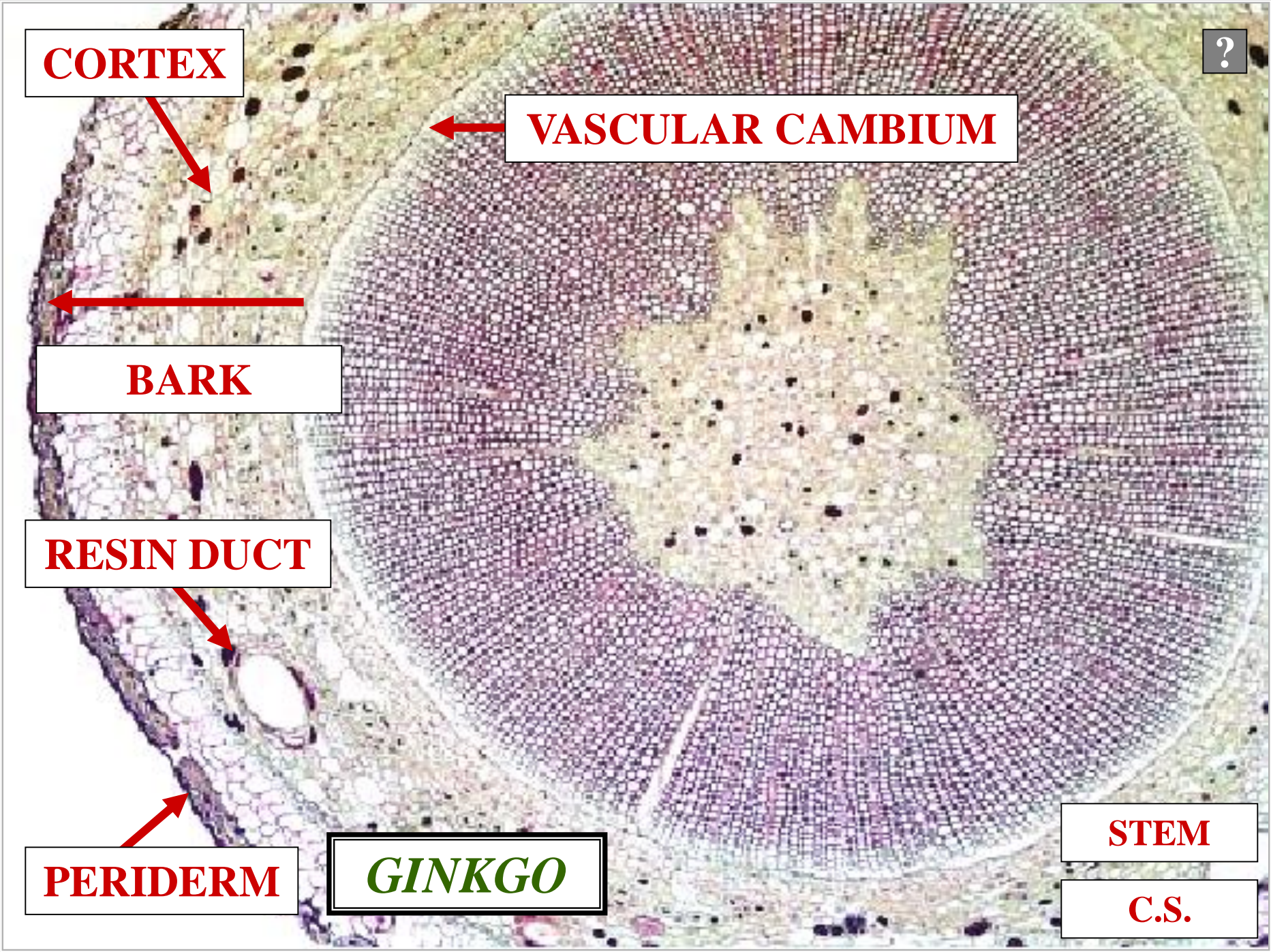
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CORTEX

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VASCULAR CAMBIUM

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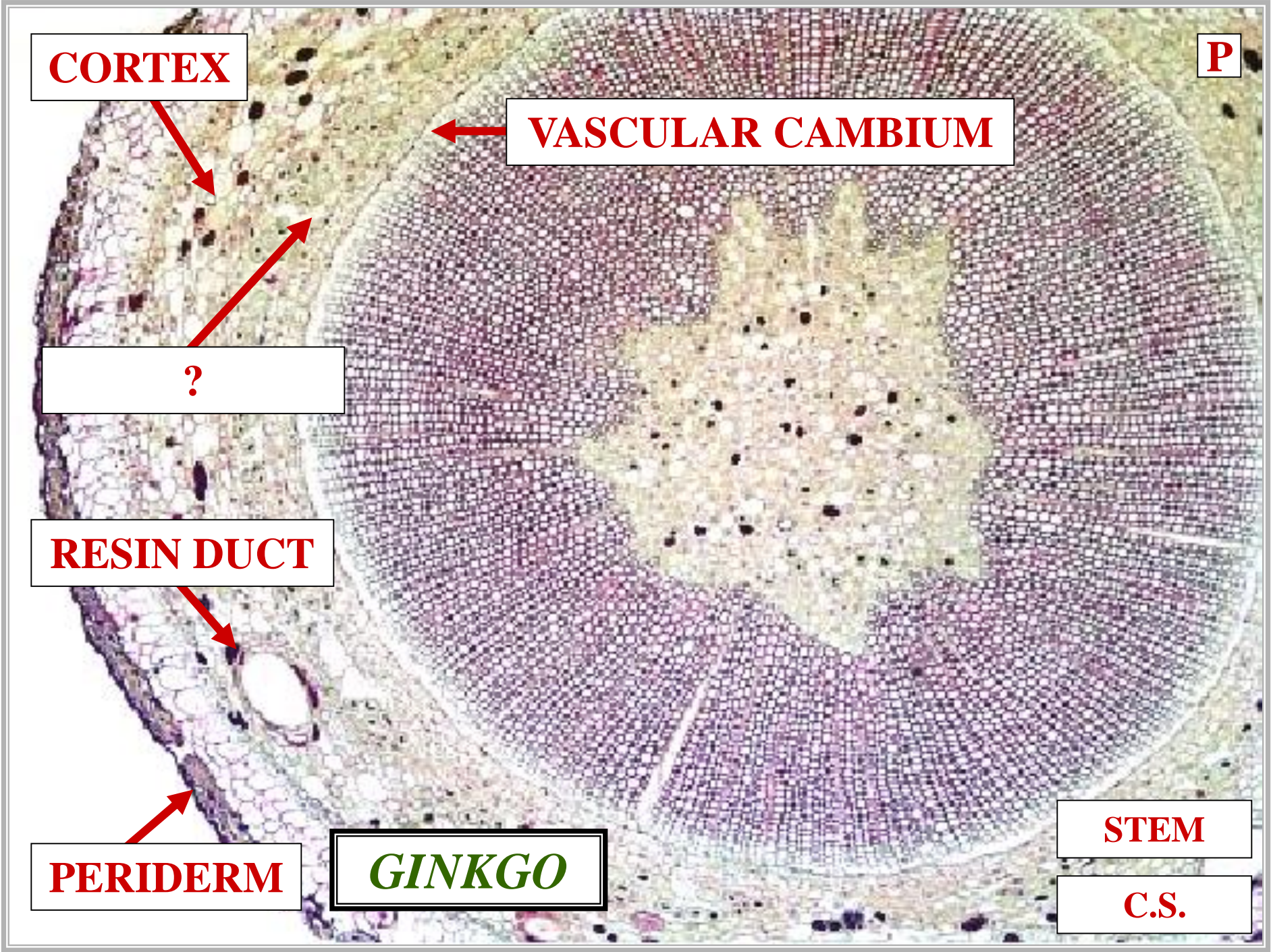
RESIN DUCT

PERIDERM

GINKGO

STEM

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VASCULAR CAMBIUM



~2 PHLOEM



RESIN DUCT



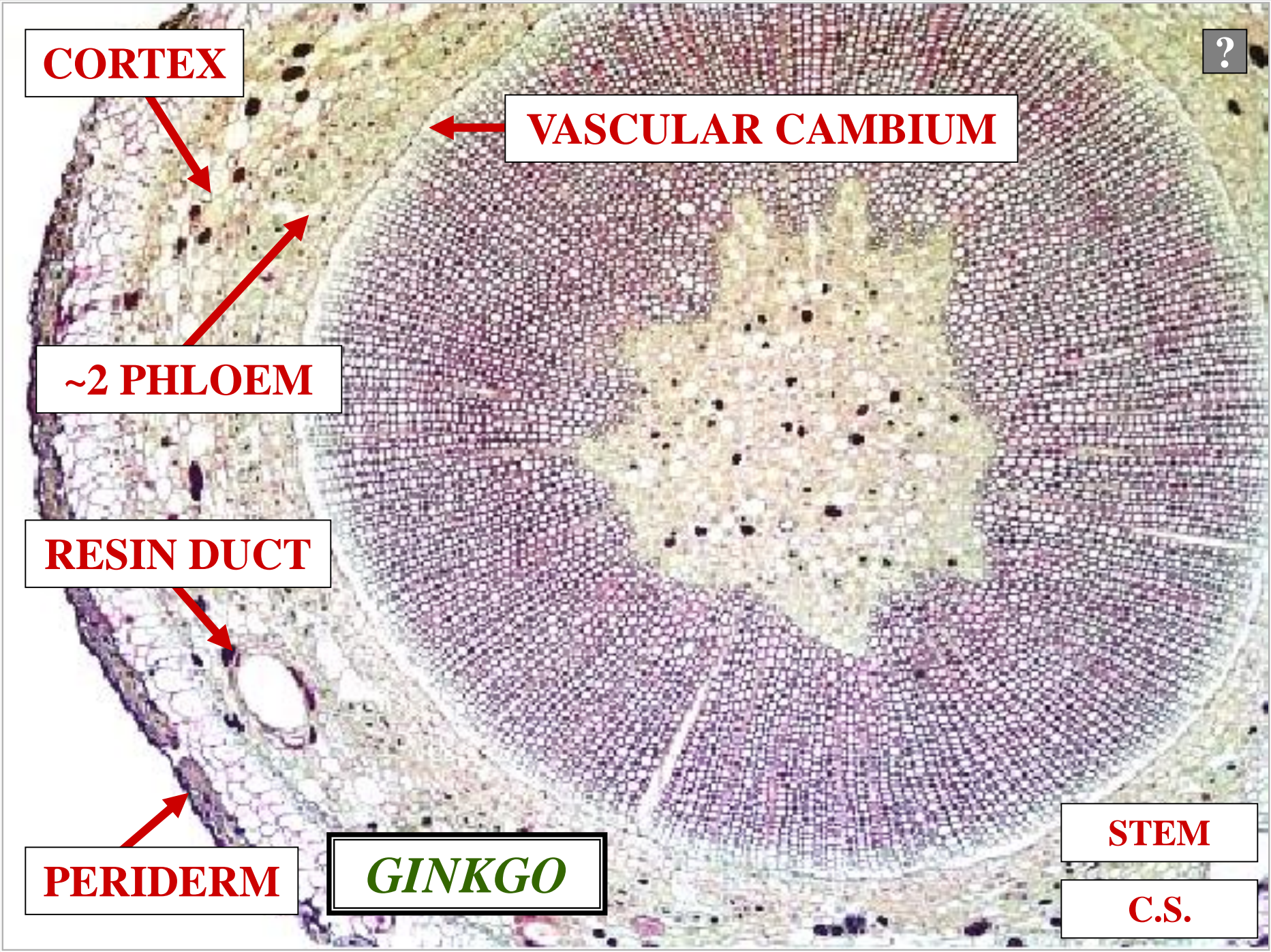
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STEM

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W

CORTEX

VASCULAR CAMBIUM

~2 PHLOEM

RESIN DUCT

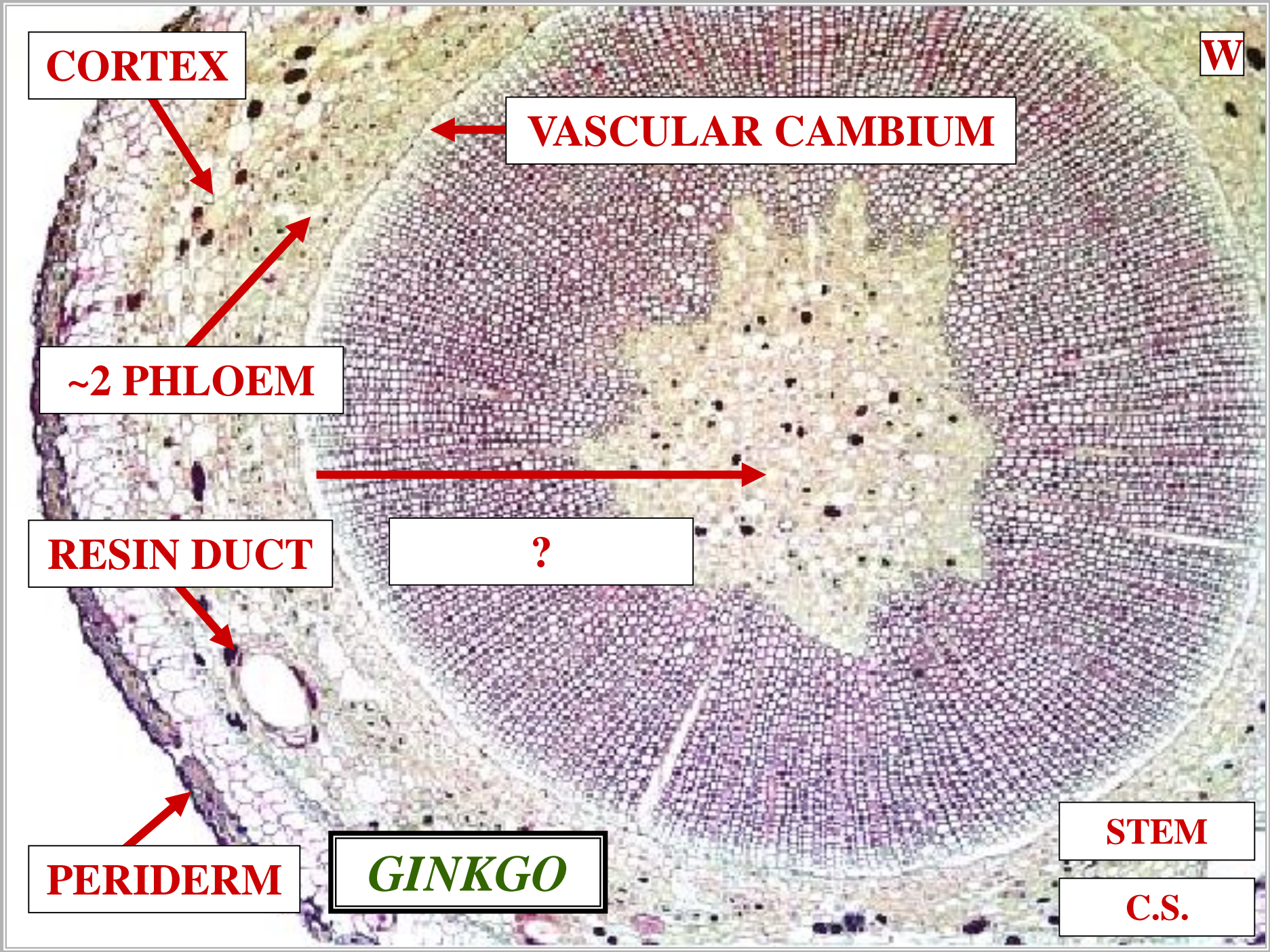
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PERIDERM

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STEM

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CORTEX



VASCULAR CAMBIUM



~2 PHLOEM



RESIN DUCT



WOOD



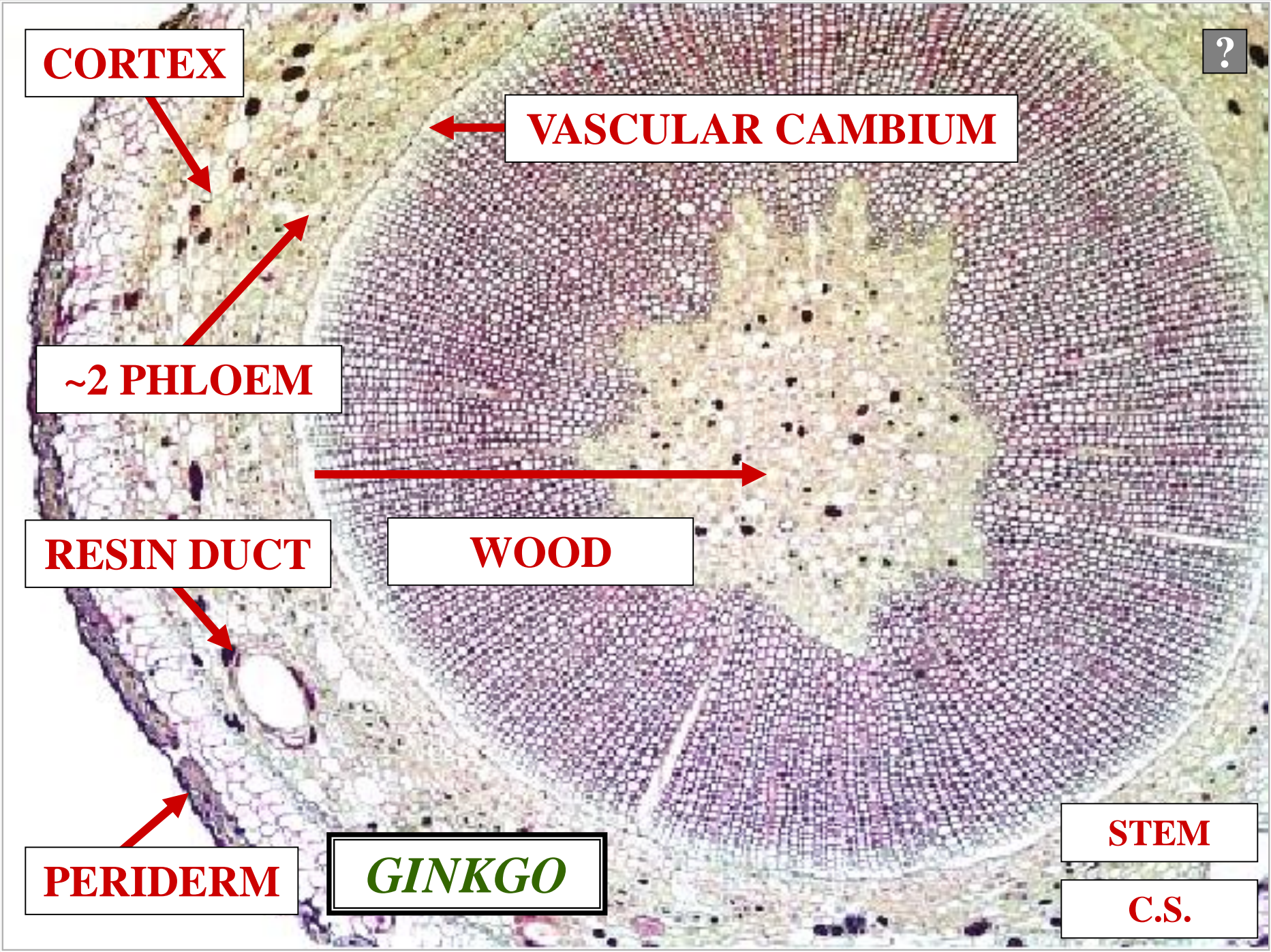
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GINKGO

STEM

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X

CORTEX

VASCULAR CAMBIUM

~2 PHLOEM

RESIN DUCT

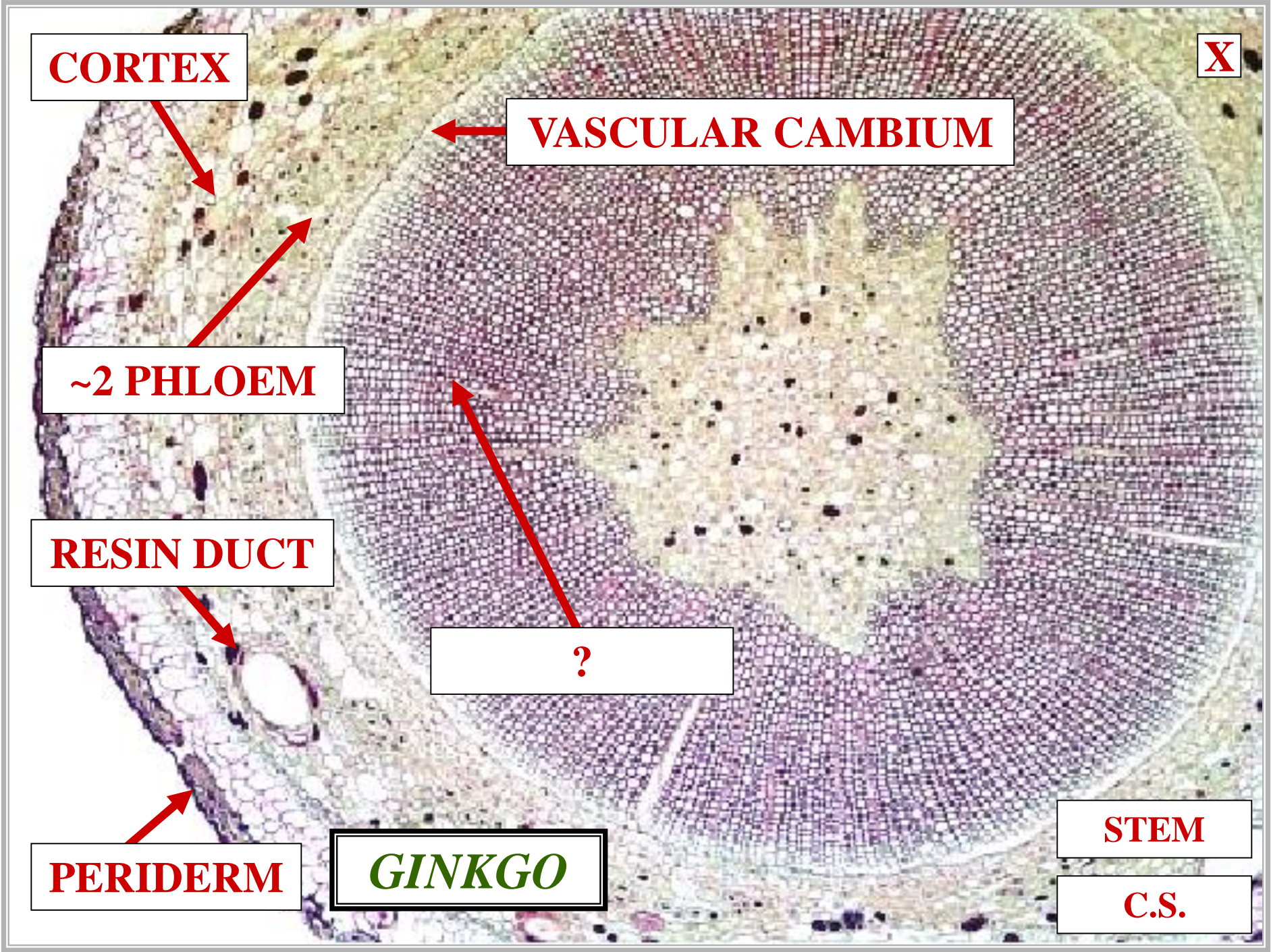
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PERIDERM

GINKGO

STEM

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CORTEX

VASCULAR CAMBIUM

~2 PHLOEM

RESIN DUCT

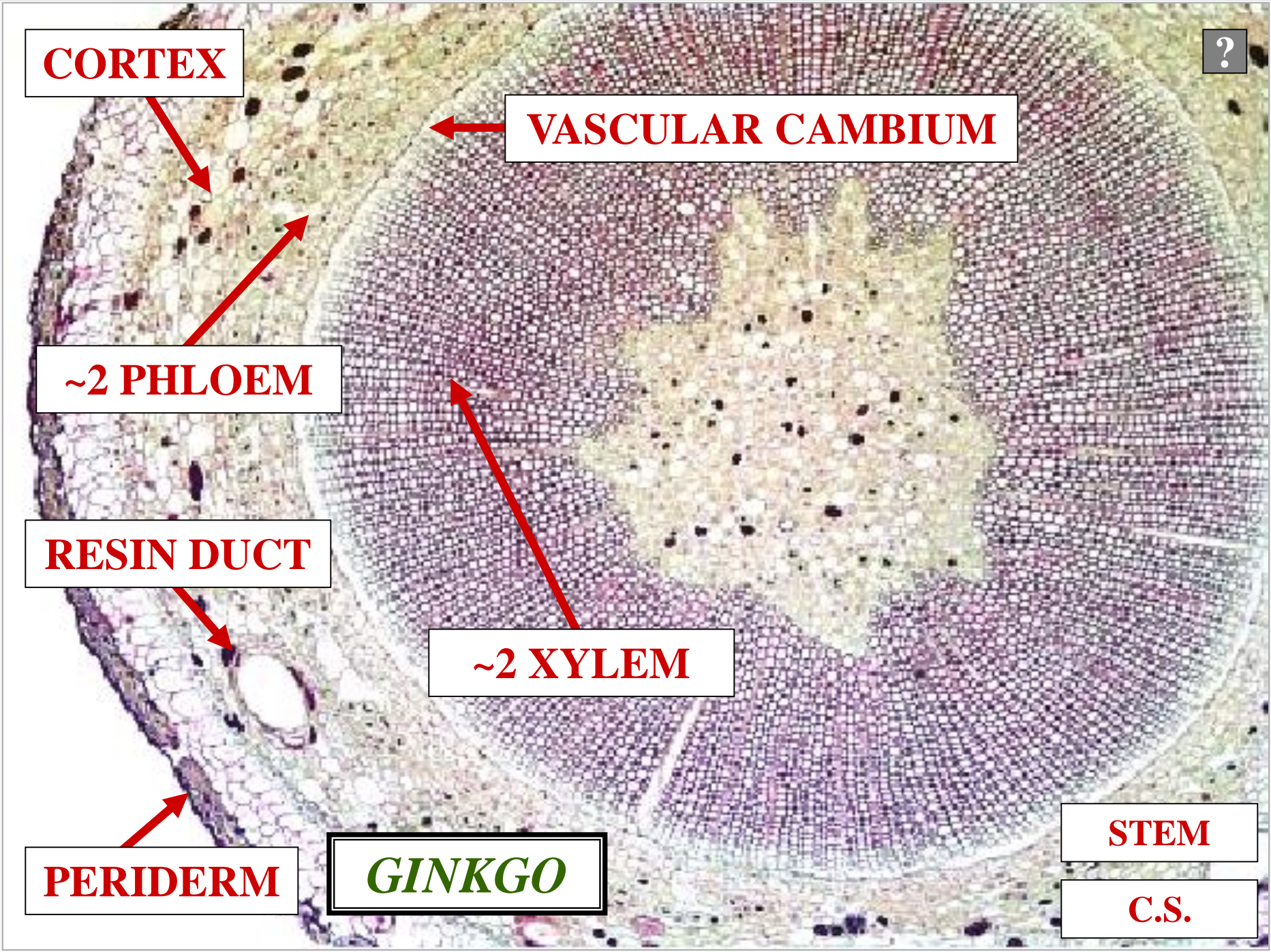
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GINKGO

STEM

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CORTEX

VASCULAR CAMBIUM

~2 PHLOEM

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RESIN DUCT

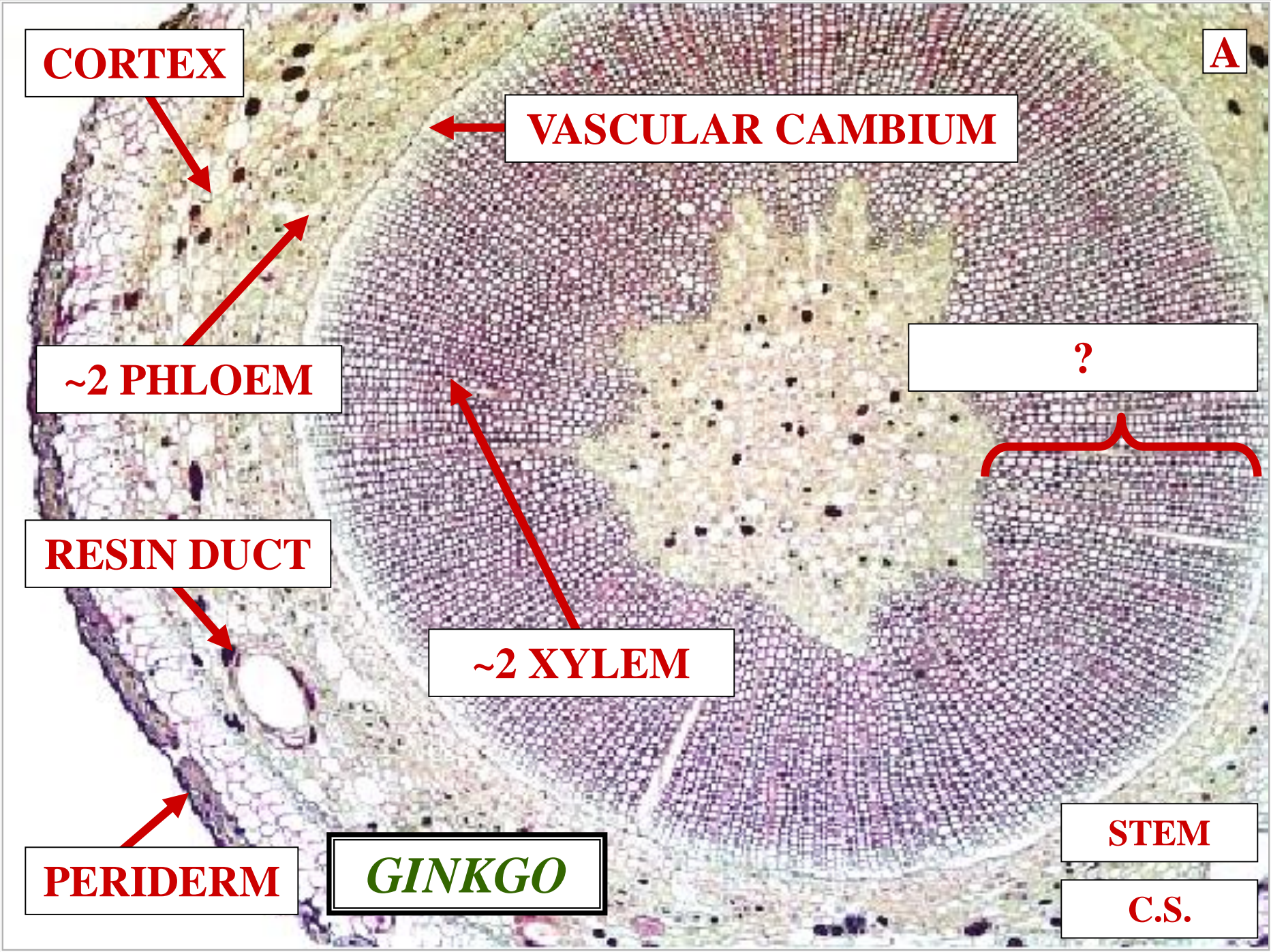
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PERIDERM

GINKGO

STEM

C.S.



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CORTEX

VASCULAR CAMBIUM

~2 PHLOEM

ANNUAL RING

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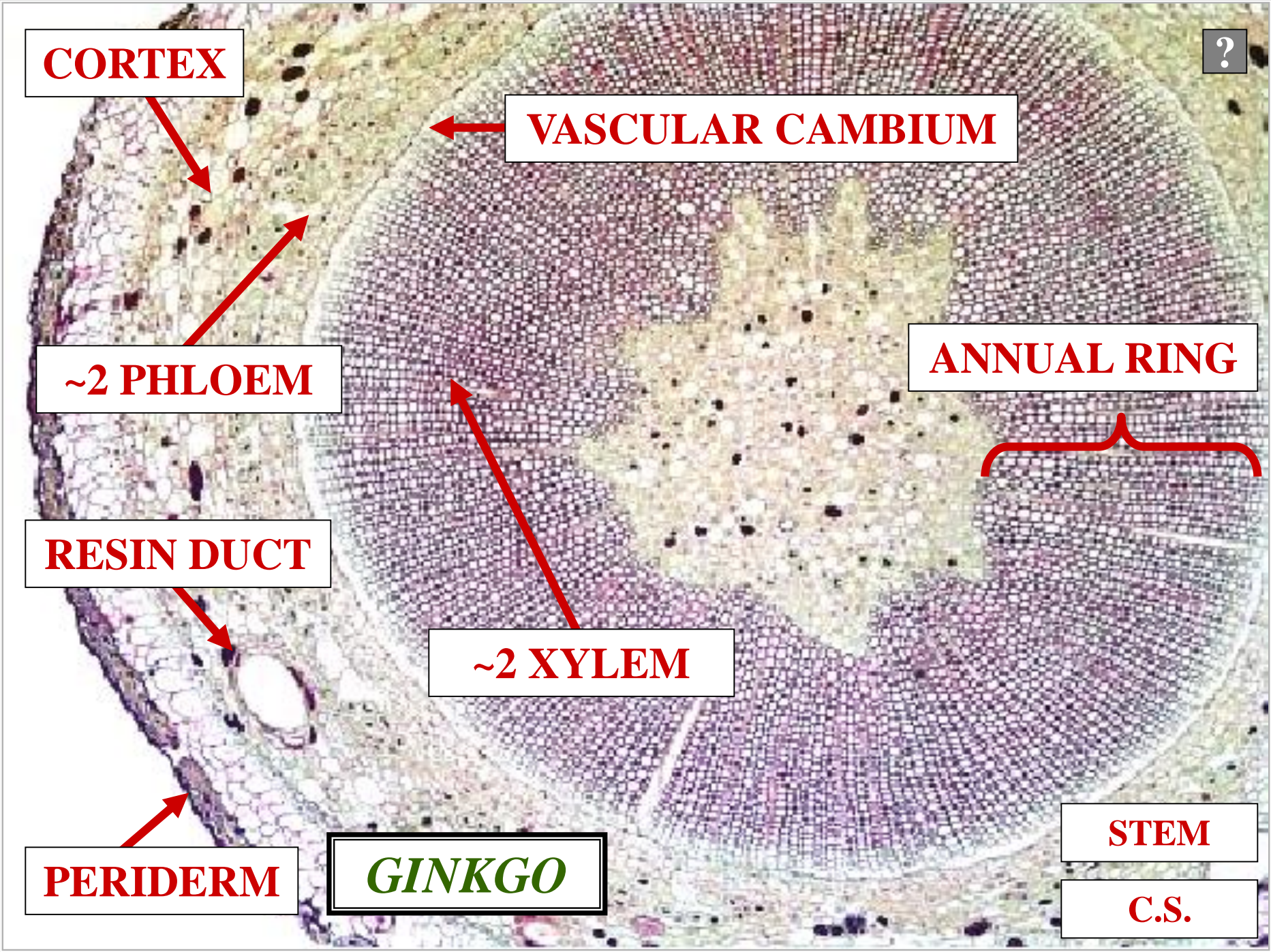
~2 XYLEM

PERIDERM

GINKGO

STEM

C.S.



CORTEX

P

VASCULAR CAMBIUM

~2 PHLOEM

ANNUAL RING

RESIN DUCT

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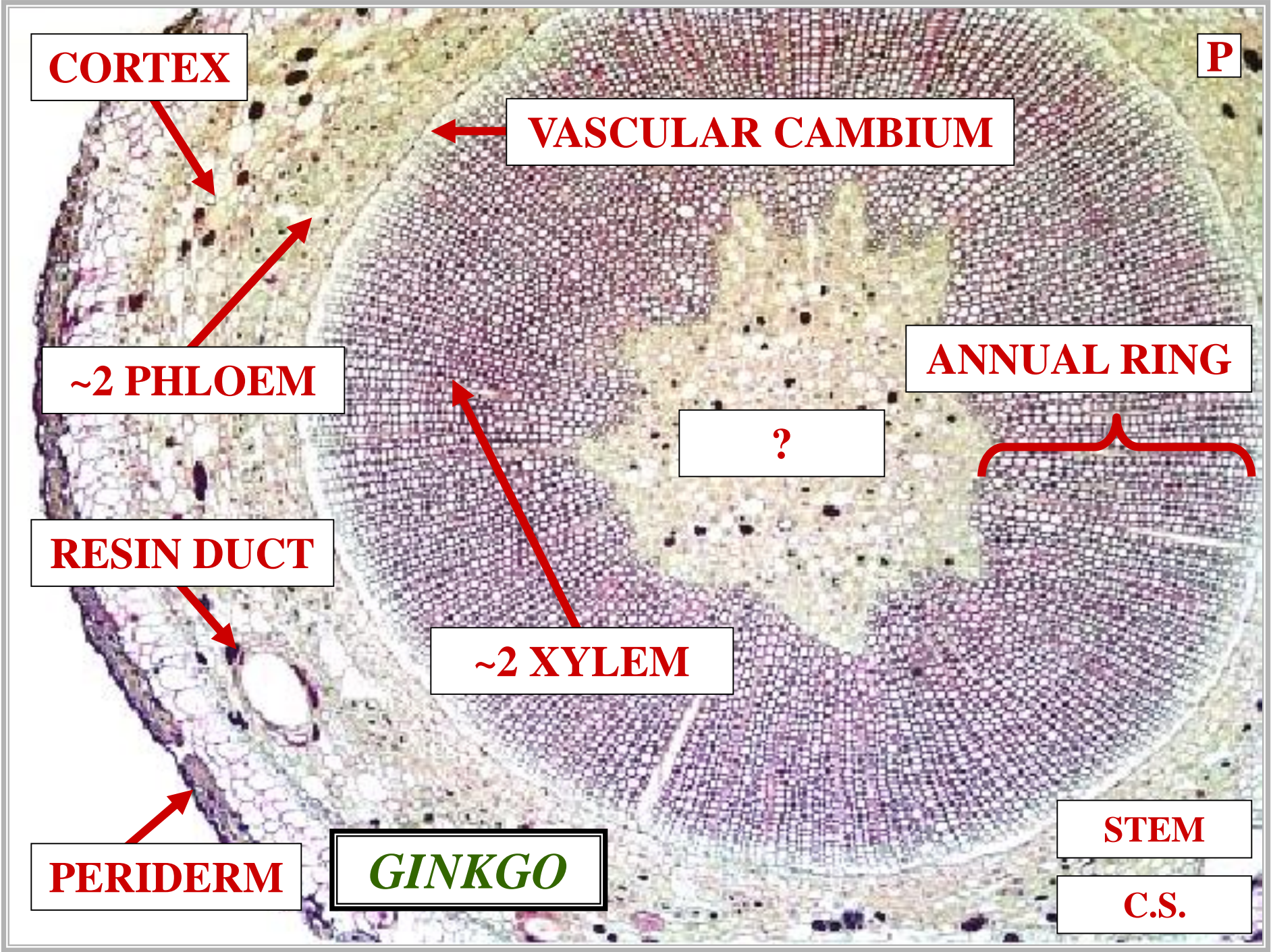
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PERIDERM

GINKGO

STEM

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CORTEX

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VASCULAR CAMBIUM

~2 PHLOEM

ANNUAL RING

PITH

RESIN DUCT

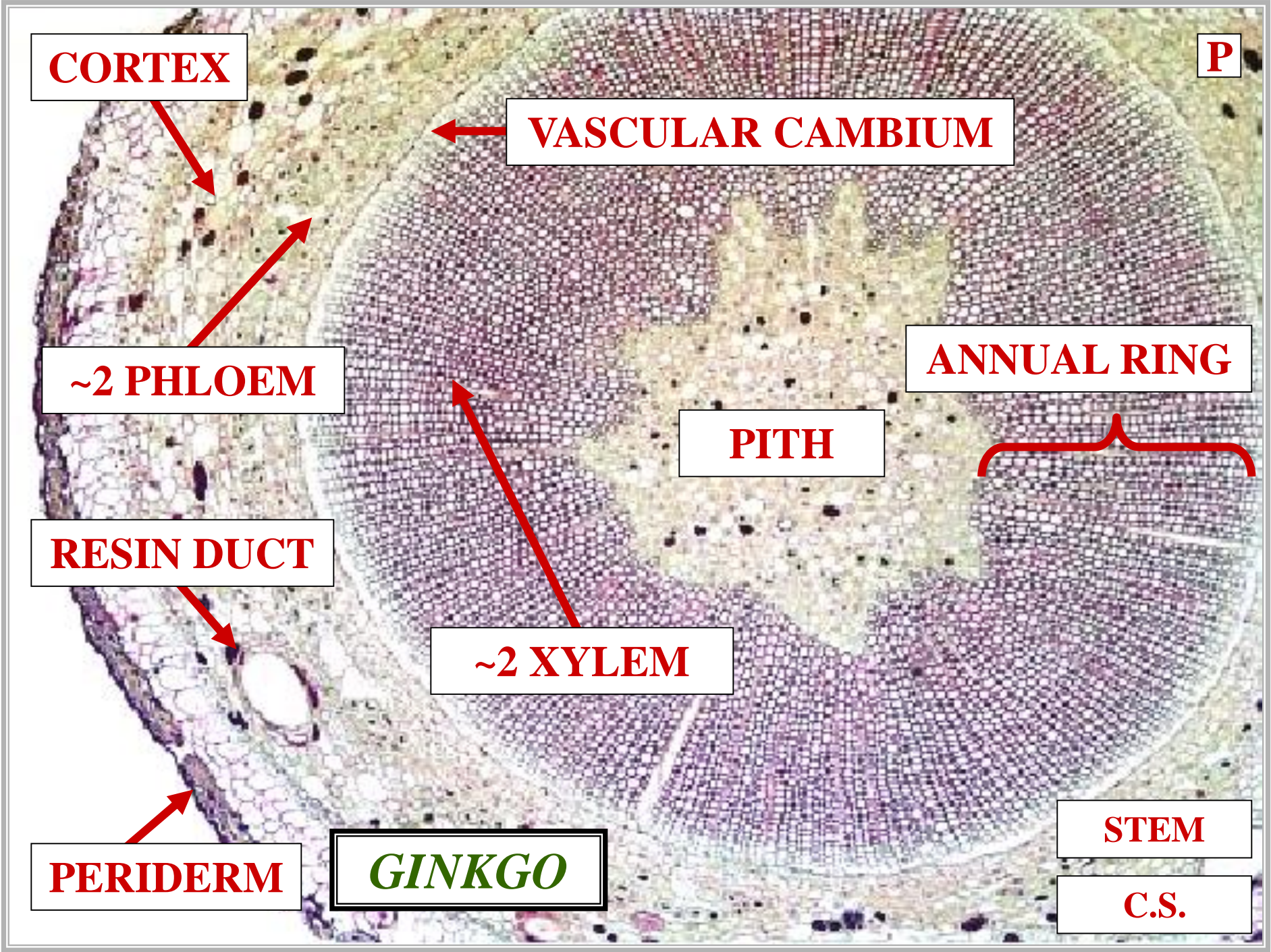
~2 XYLEM

PERIDERM

GINKGO

STEM

C.S.



CORTEX

VASCULAR CAMBIUM

~2 PHLOEM

ANNUAL RING

PITH

RESIN DUCT

~2 XYLEM

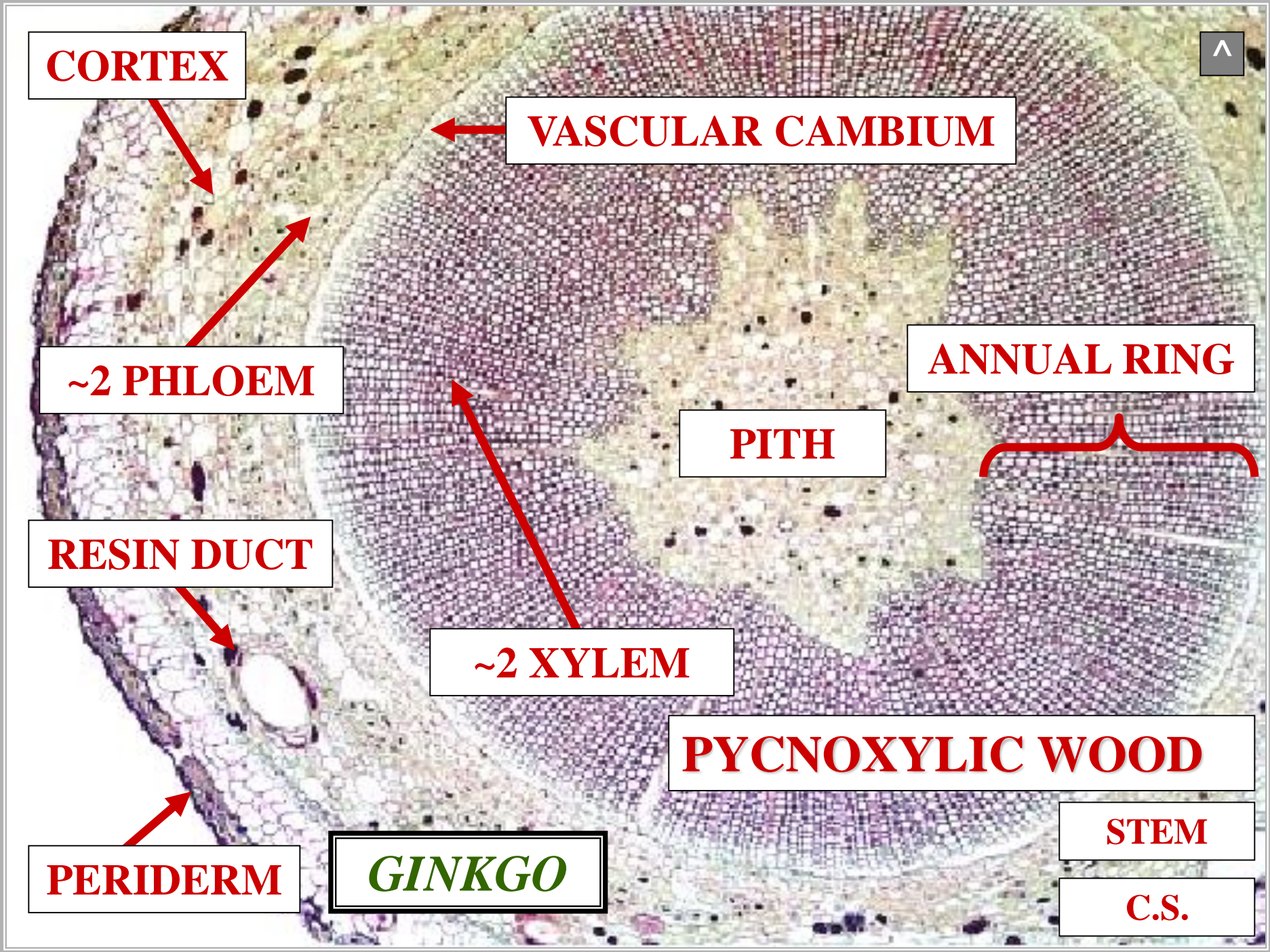
PYCNOXYLIC WOOD

PERIDERM

GINKGO

STEM

C.S.



LEAF

DECIDUOUS LEAF

GINKGOPHYTA
DECIDUOUS LEAF



FUNCTIONAL
1 SEASON

GINKGOPHYTA
DECIDUOUS LEAF

GINKGO



DECIDUOUS LEAF





DECIDUOUS LEAF

GINKGO



LEAF MORPHOLOGY

GINKGO

P



GINKGO

L

PETIOLE

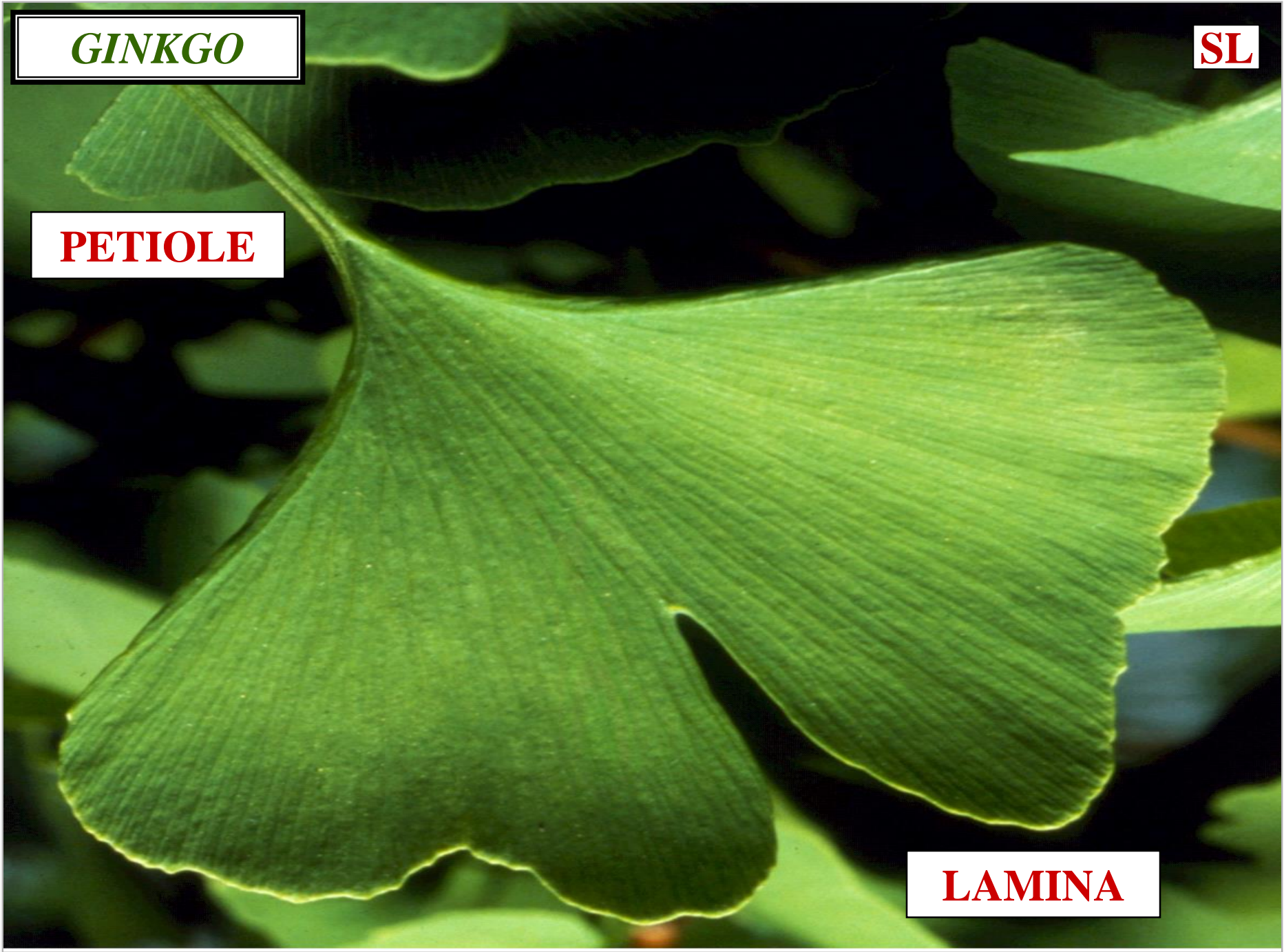


GINKGO

SL

PETIOLE

LAMINA



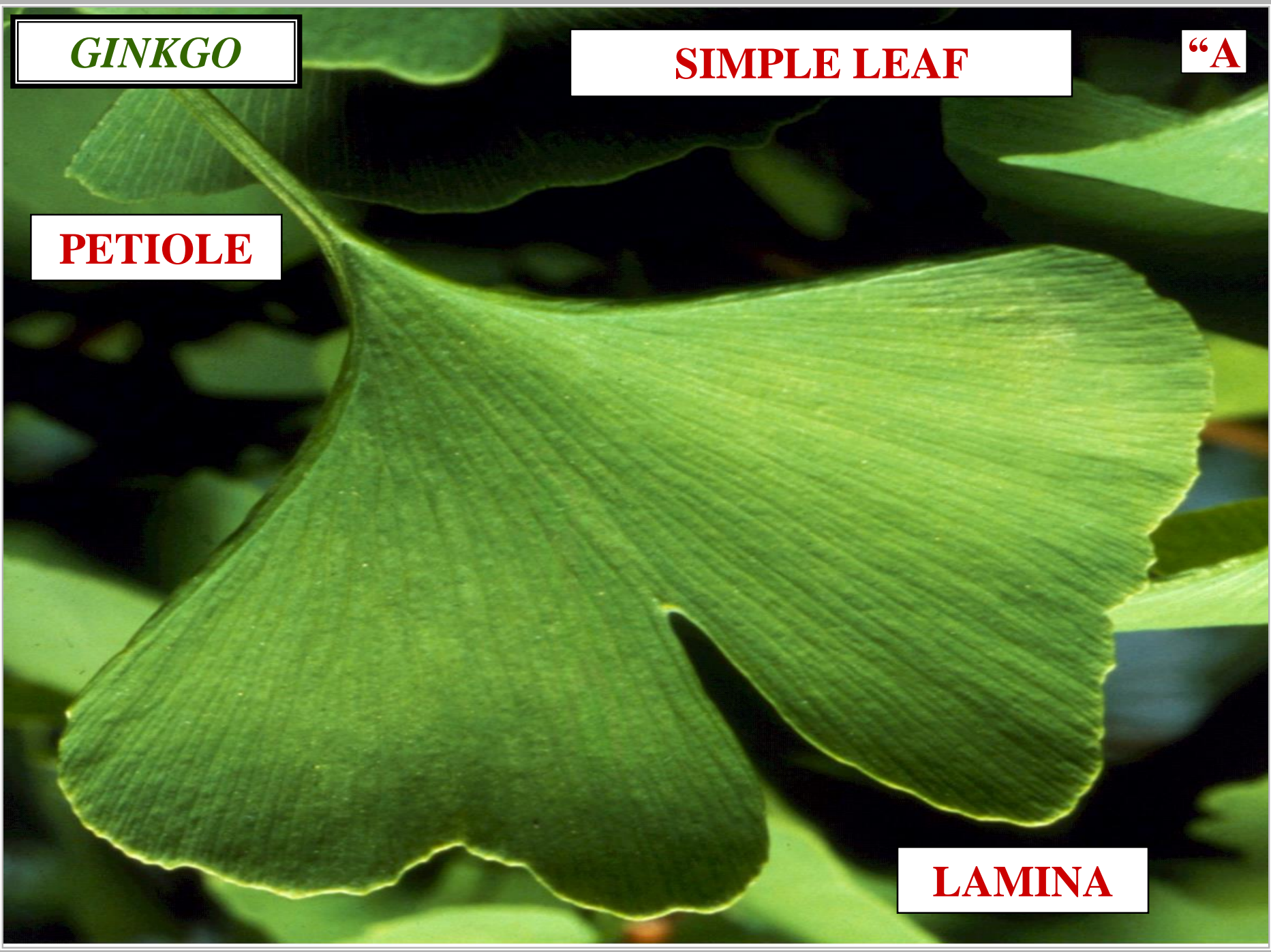
GINKGO

SIMPLE LEAF

“A”

PETIOLE

LAMINA



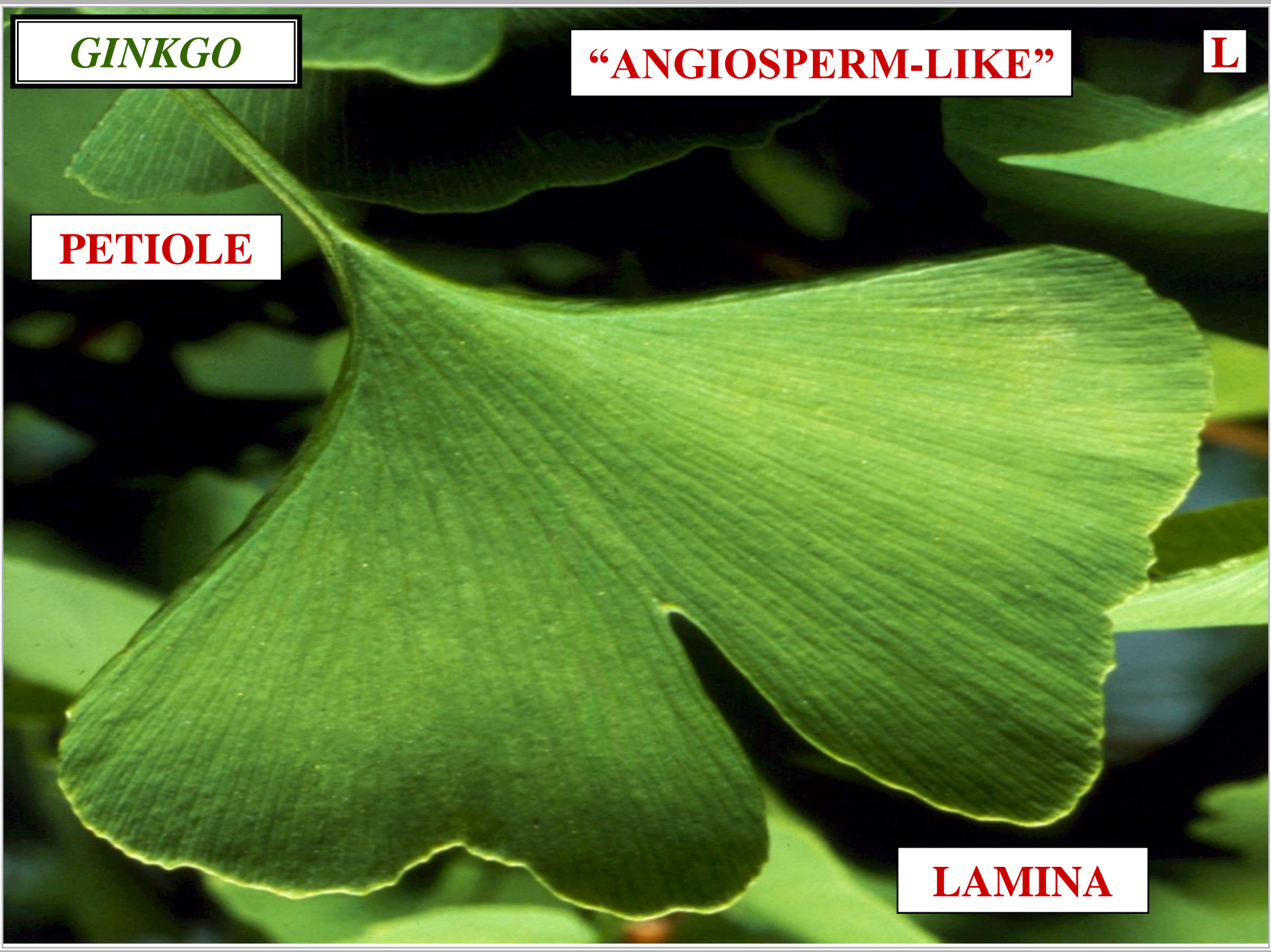
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“ANGIOSPERM-LIKE”

L

PETIOLE

LAMINA



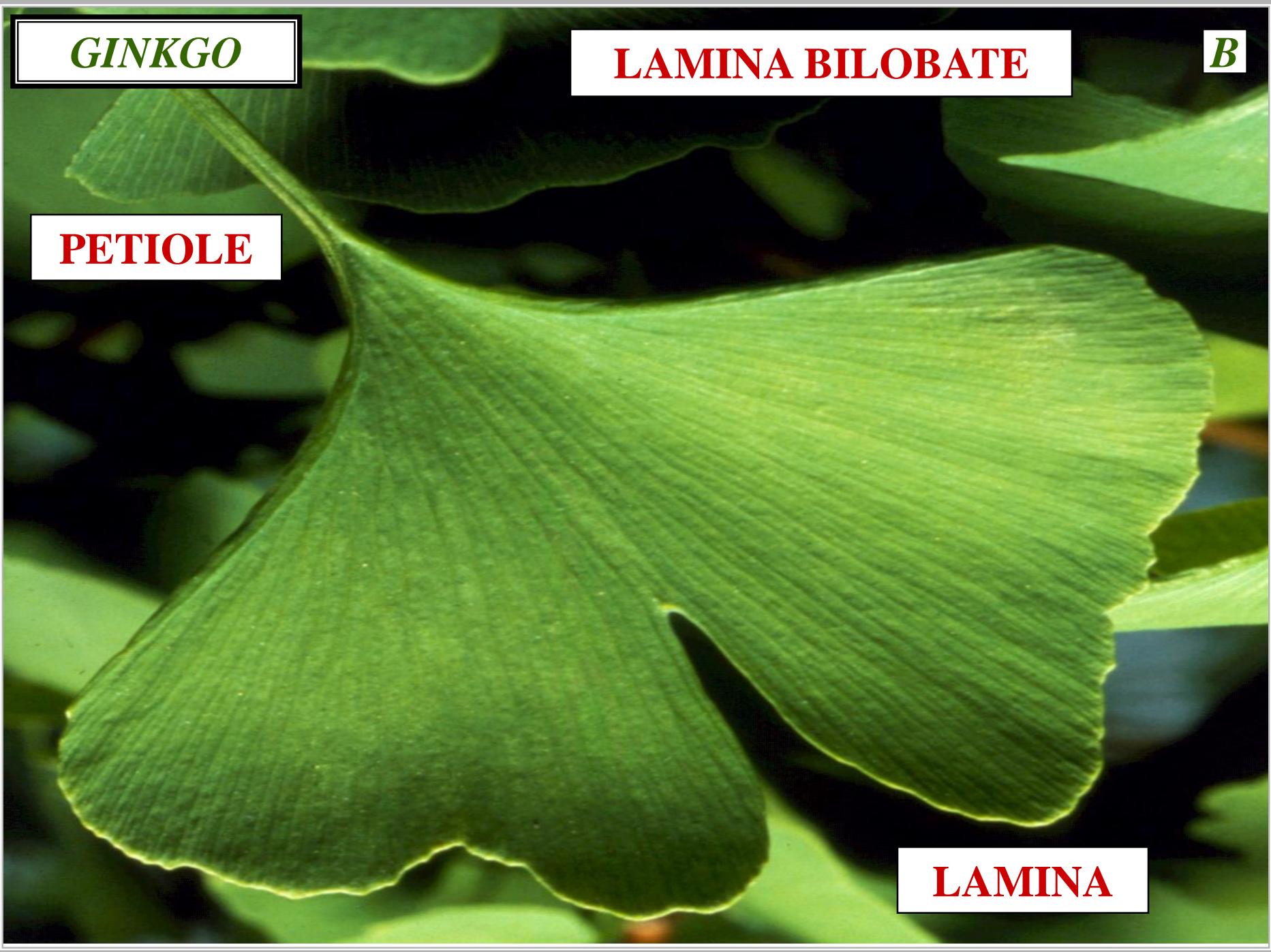
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LAMINA BILOBATE

B

PETIOLE

LAMINA



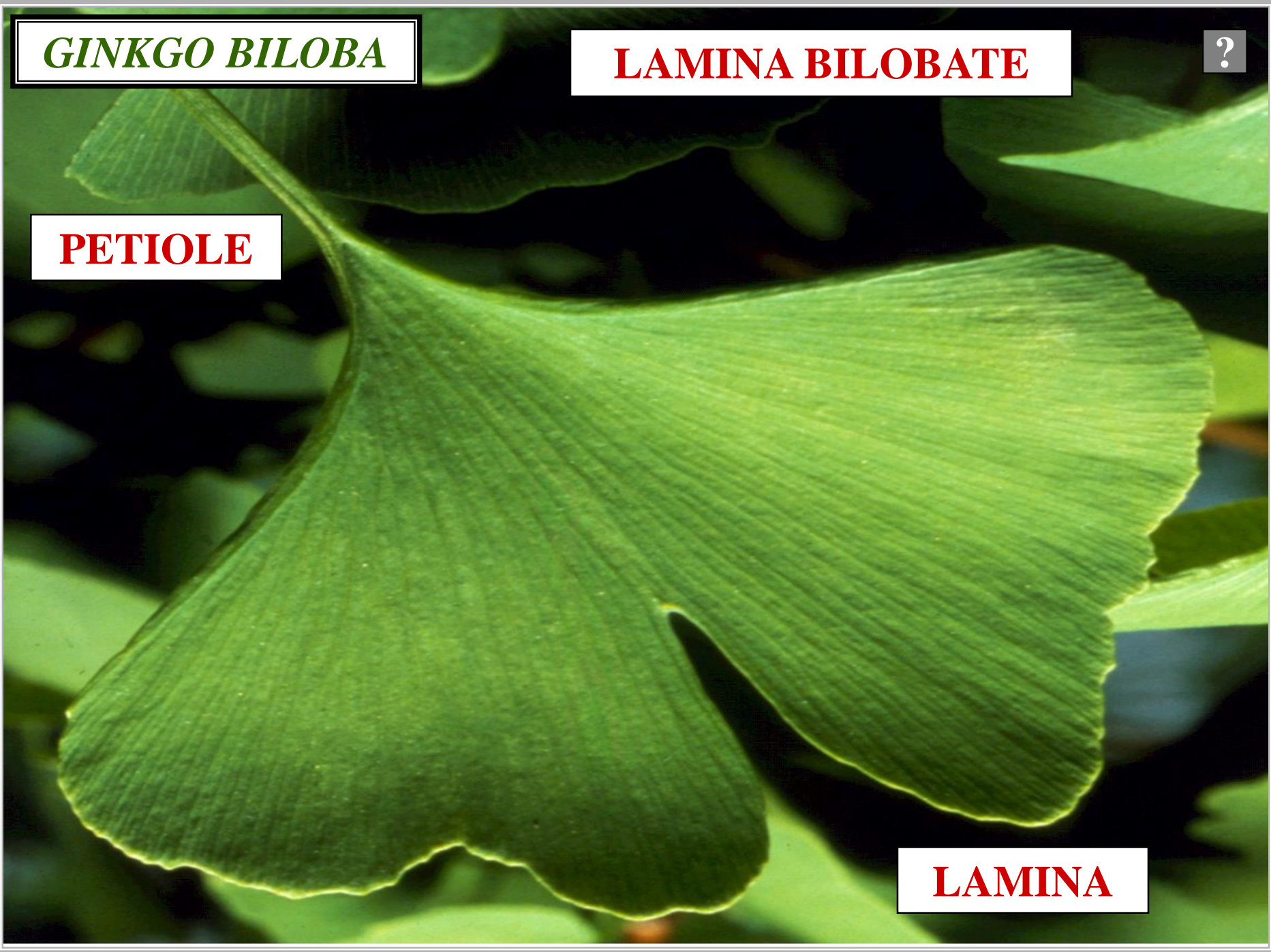
GINKGO BILOBA

LAMINA BILOBATE

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PETIOLE

LAMINA

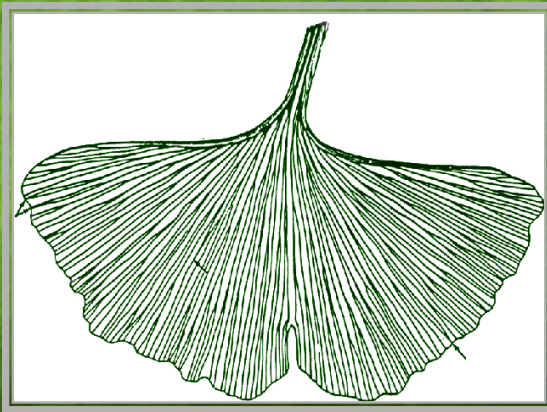


GINKGO BILOBA

LEAF VENATION

D

PETIOLE



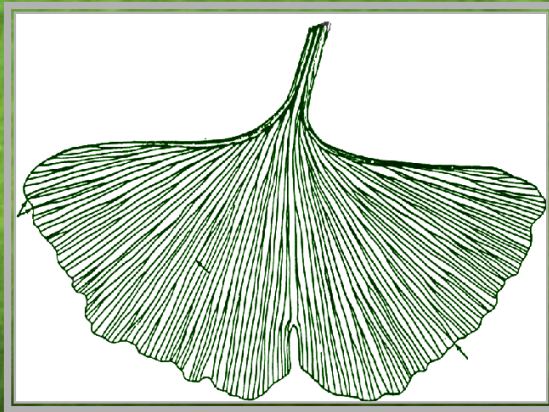
LAMINA

GINKGO BILOBA

DICHOTOMOUS VENATION



PETIOLE



LAMINA

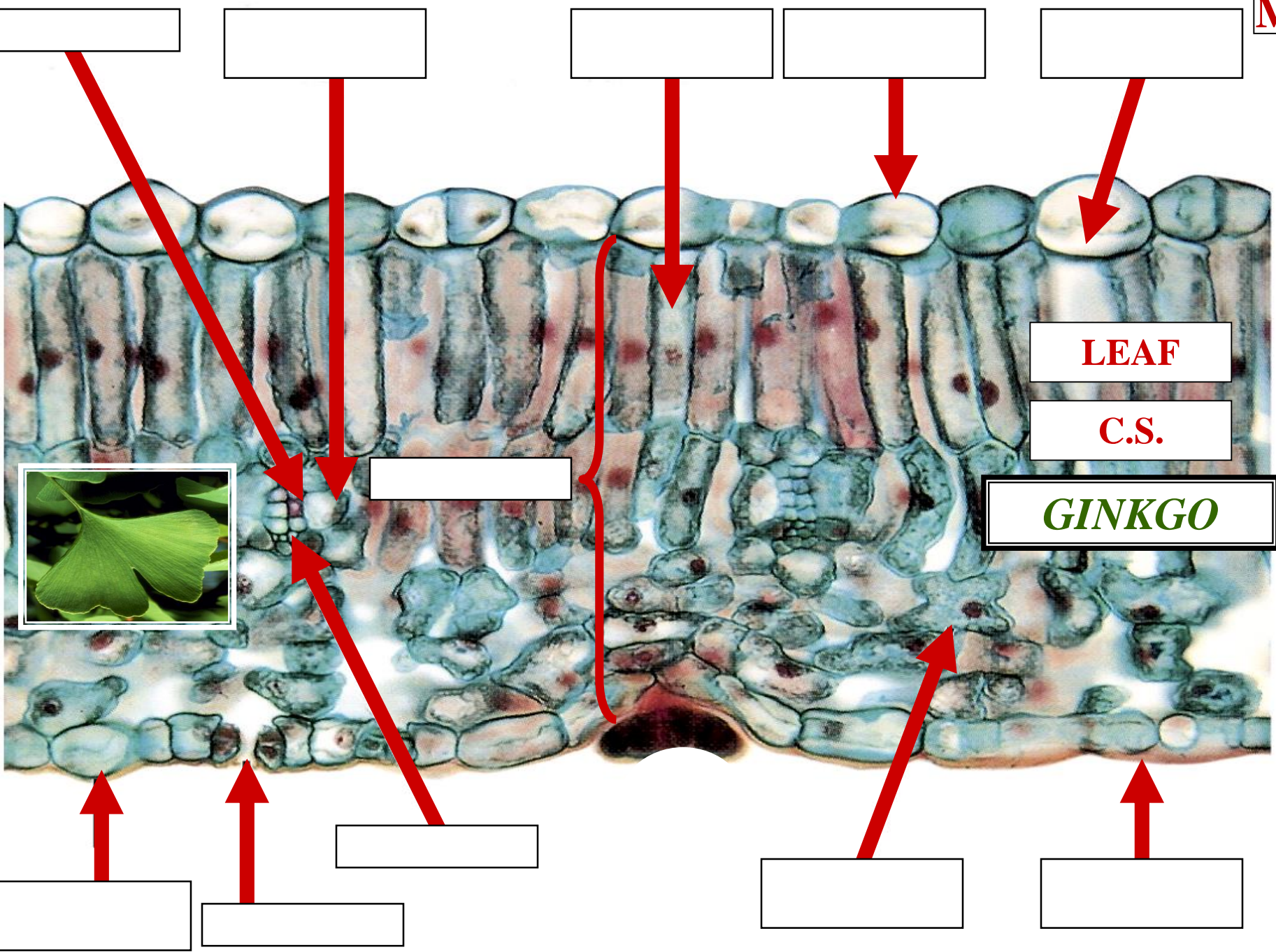
GINKGO BILOBA



DICHOTOMOUS
LEAF VENATION
DIAGNOSTIC
GINKGOPHYTA
CHARACTER



LEAF ANATOMY



LEAF

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GINKGO

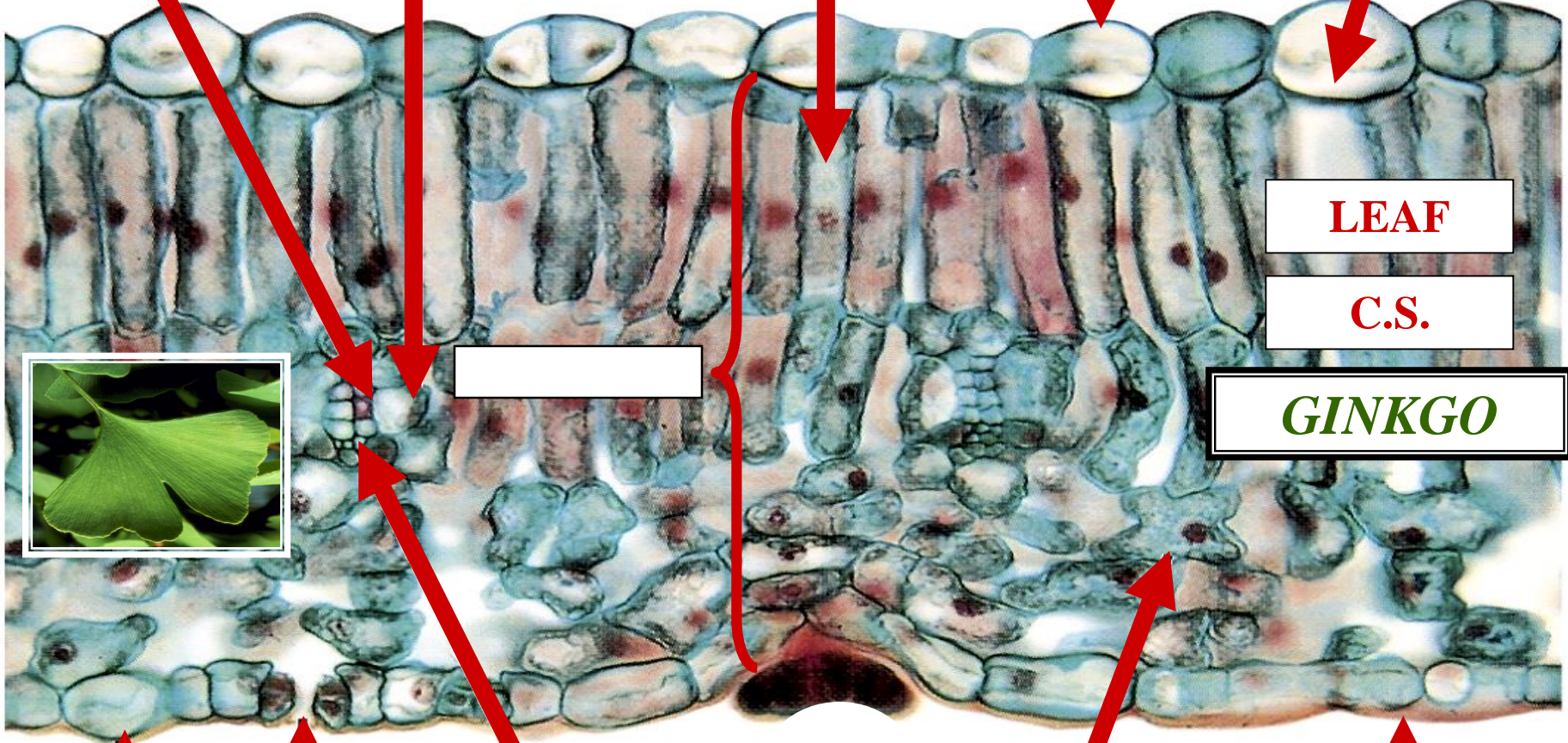
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MODERATE CUTICLE

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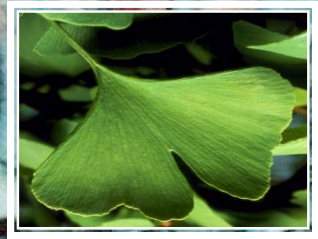
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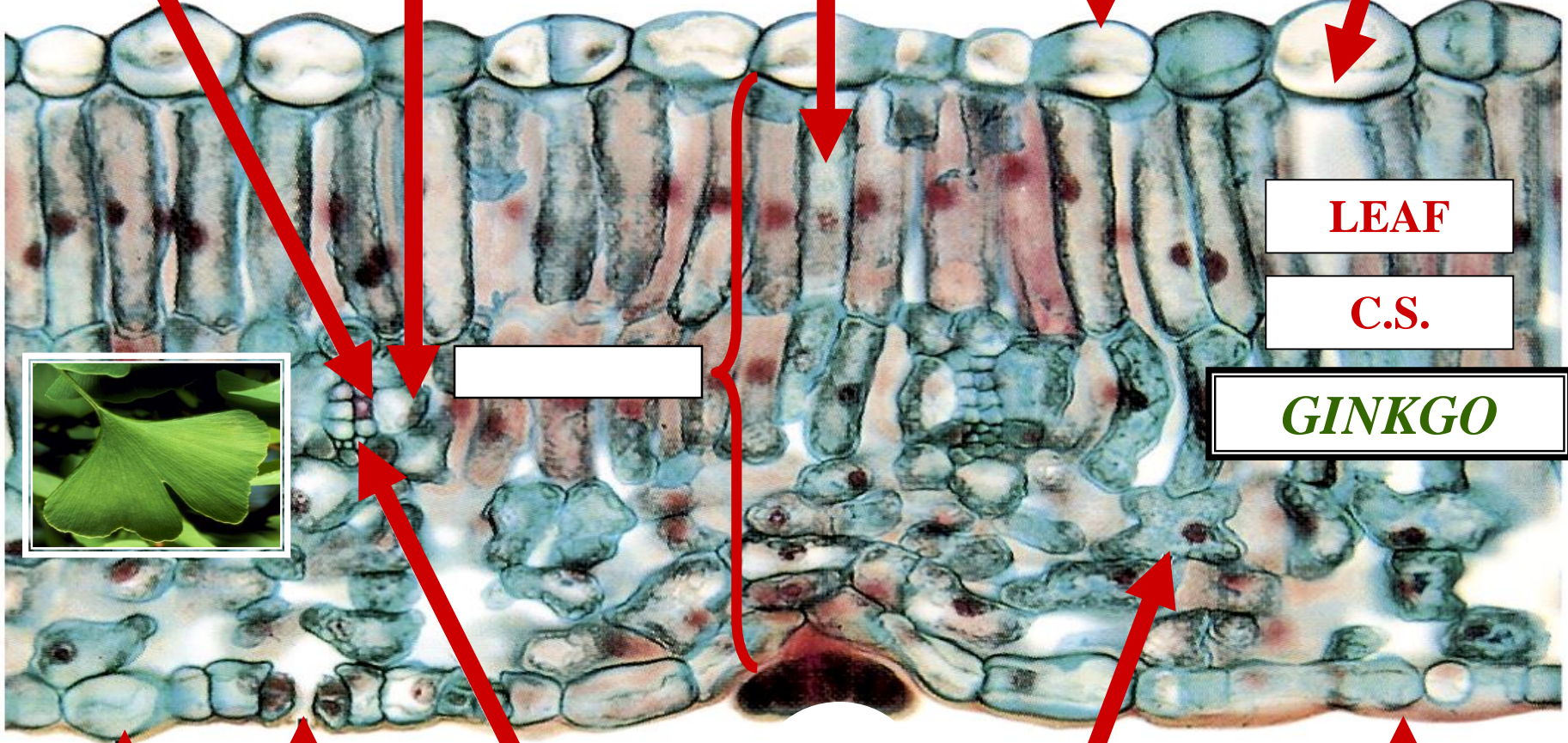
MODERATE CUTICLE

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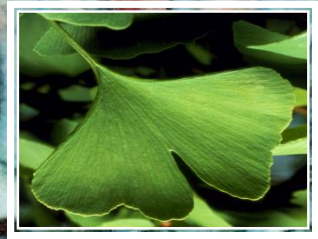
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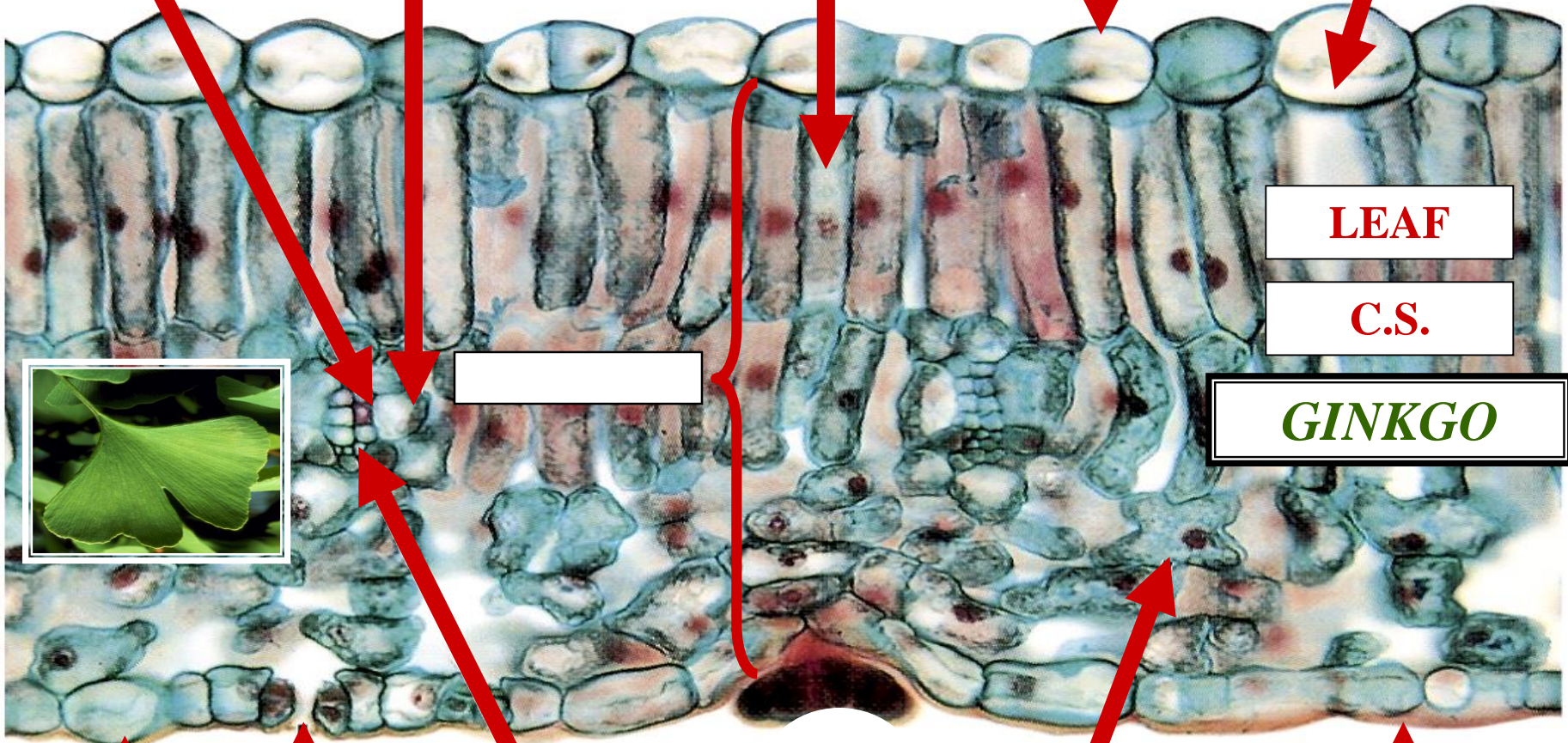
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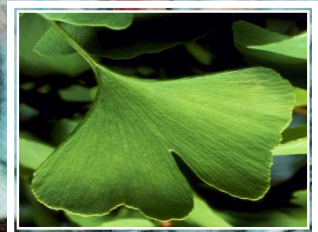
ADAXIAL EPIDERMIS



LEAF

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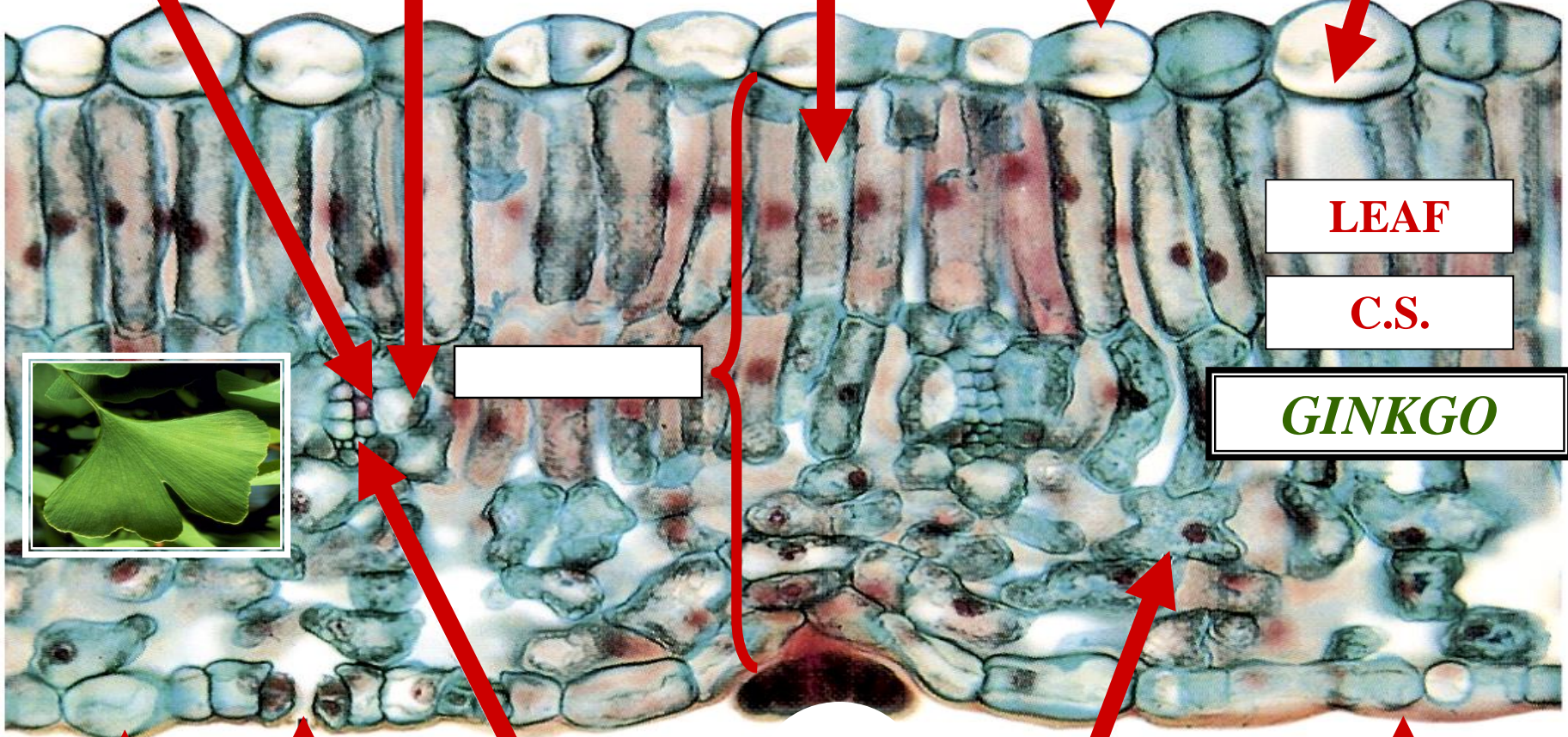
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STOMATES ABSENT

LEAF

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MODERATE CUTICLE

STOMATES ABSENT

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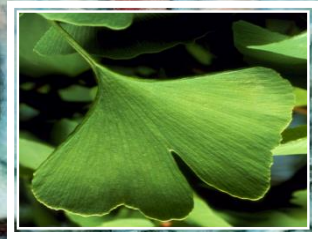
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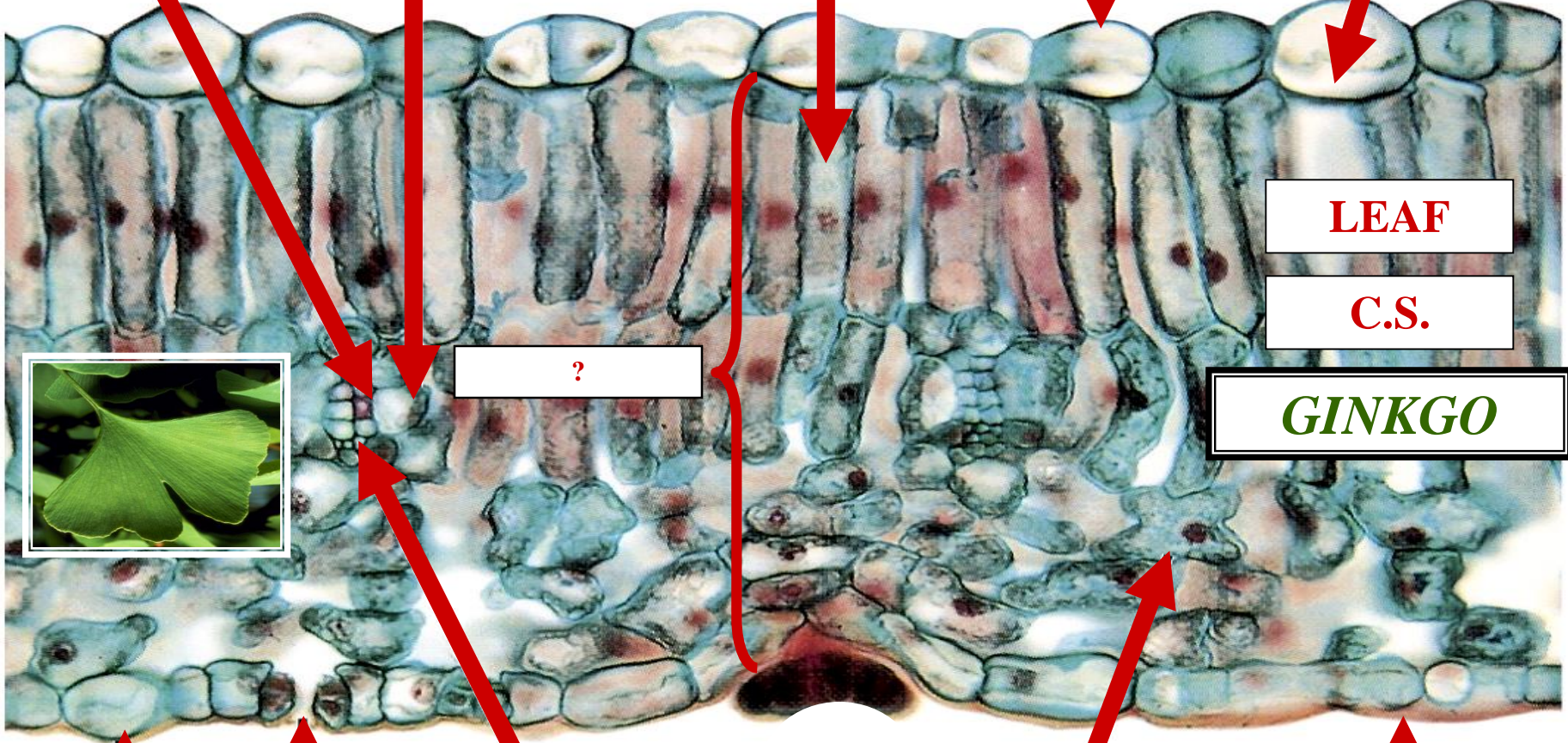
STOMATES ABSENT

LEAF

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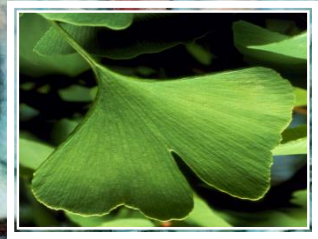
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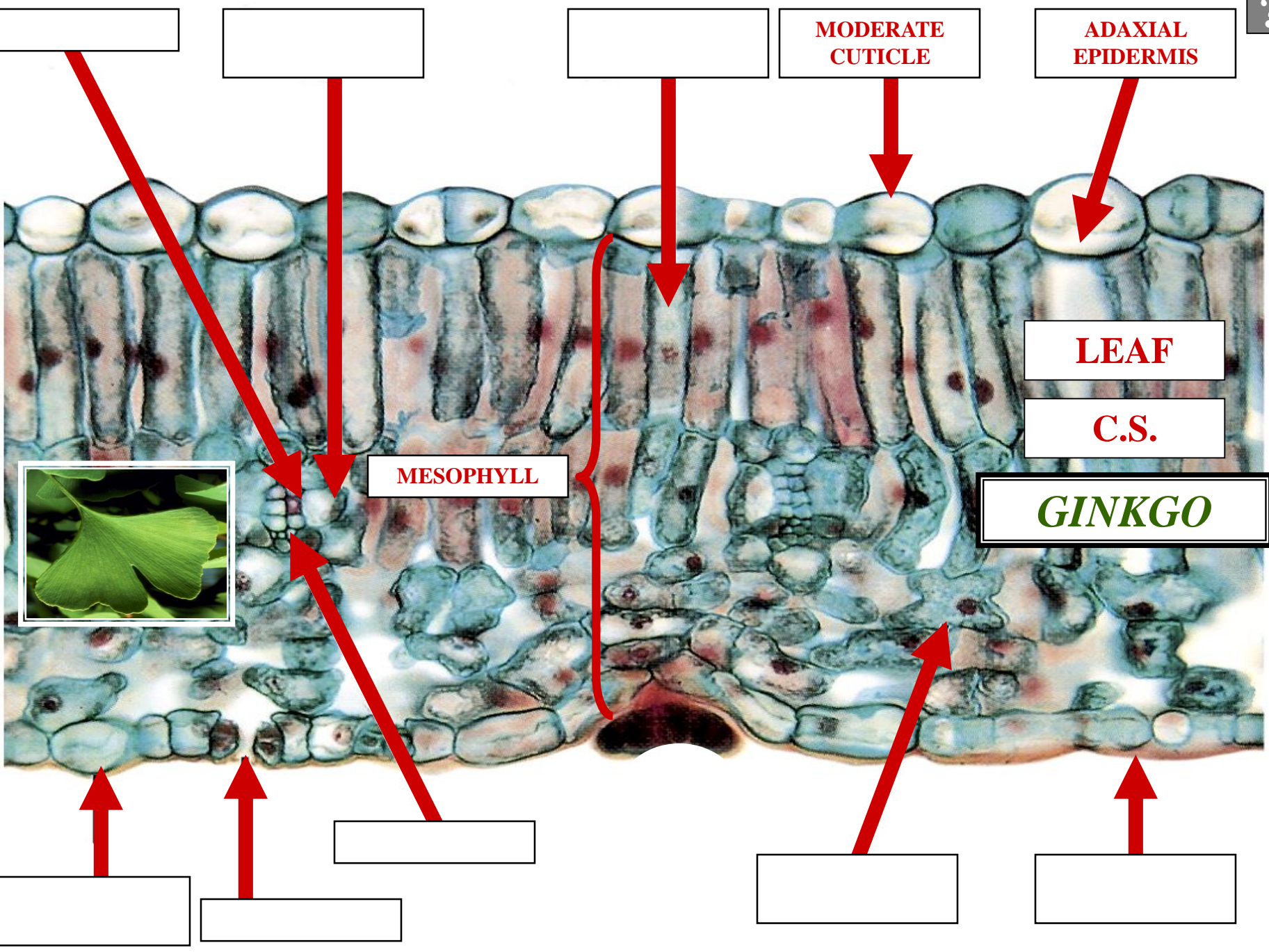
ADAXIAL EPIDERMIS

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GINKGO

MESOPHYLL



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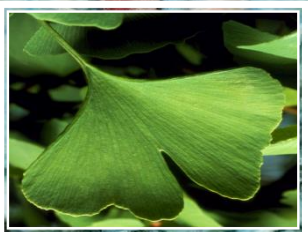
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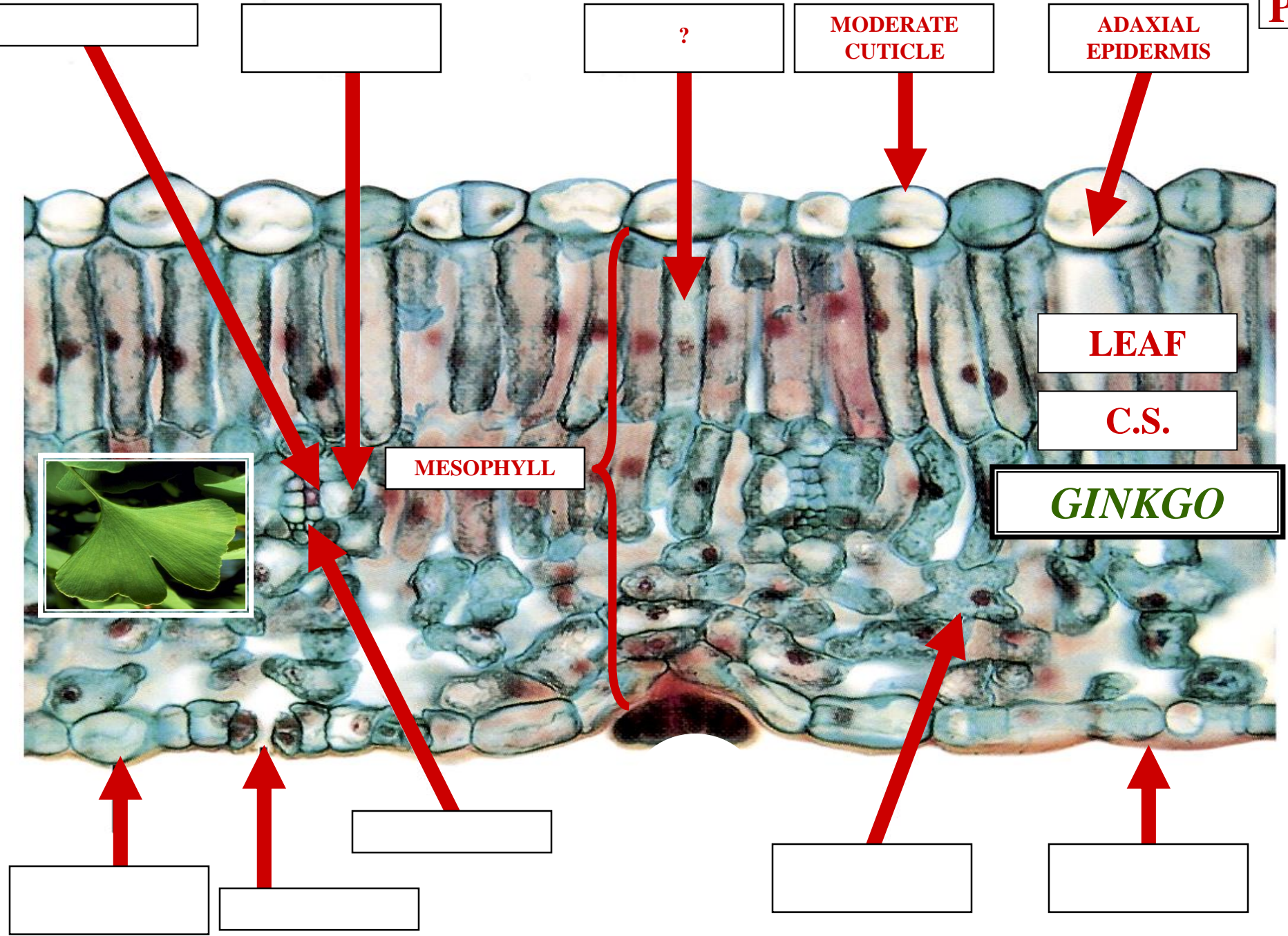
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MODERATE CUTICLE

ADAXIAL EPIDERMIS

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GINKGO

MESOPHYLL

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PALISADE
MESOPHYLL

MODERATE
CUTICLE

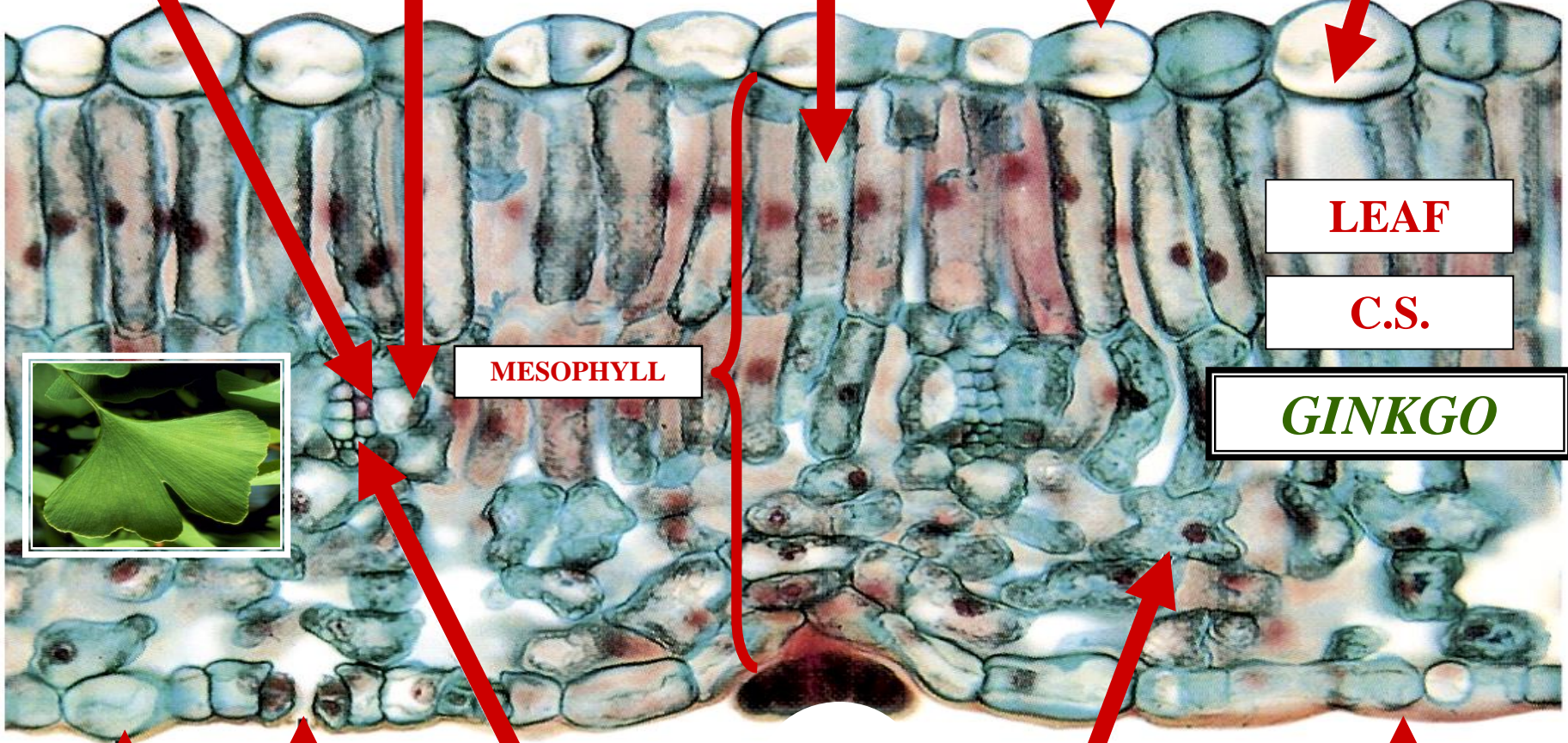
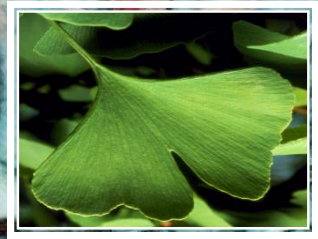
ADAXIAL
EPIDERMIS

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MESOPHYLL



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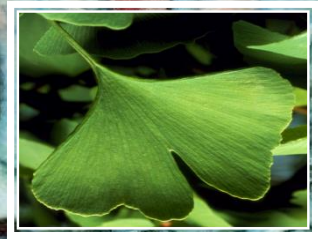
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PALISADE
MESOPHYLL

MODERATE
CUTICLE

ADAXIAL
EPIDERMIS

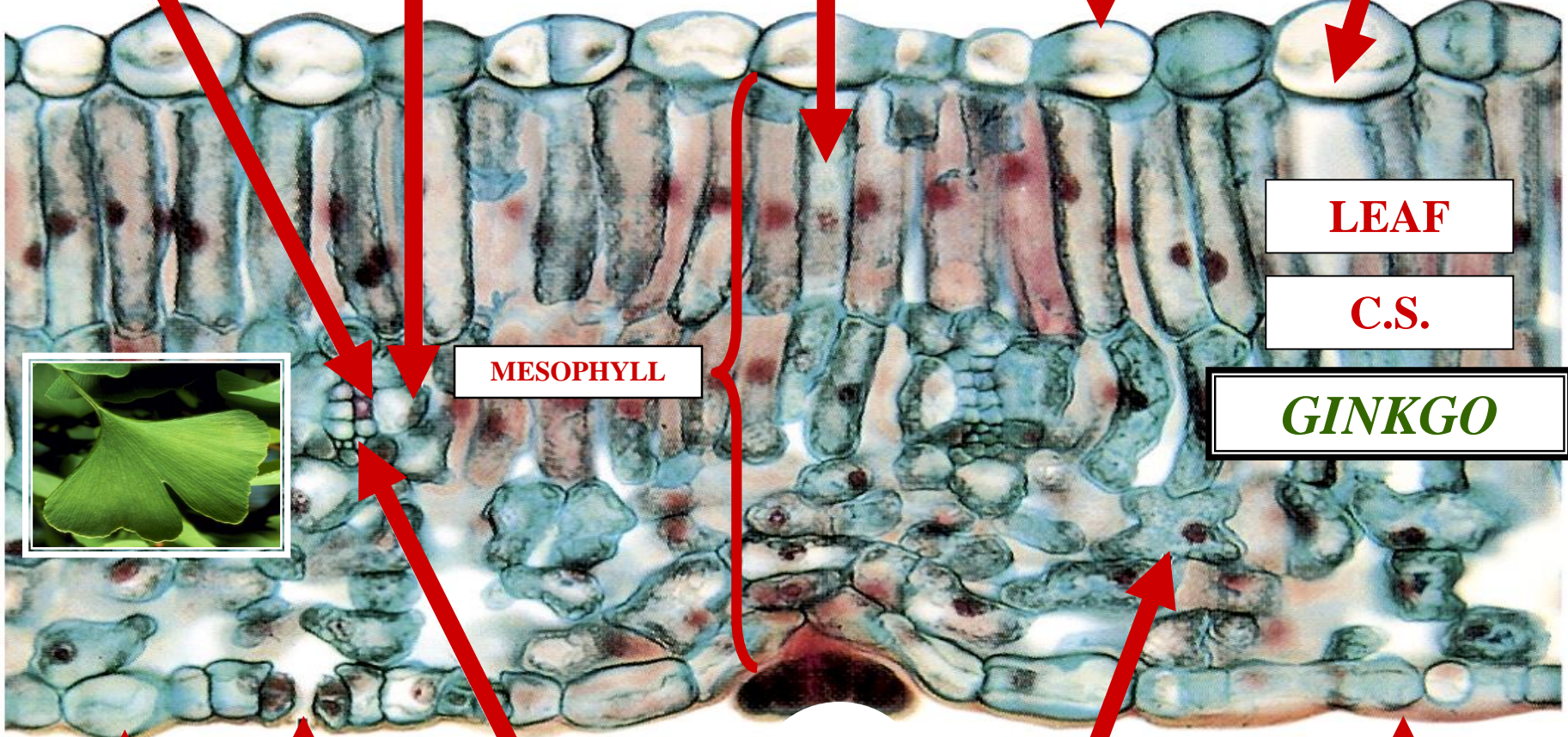
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MESOPHYLL

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PALISADE
MESOPHYLL

MODERATE
CUTICLE

ADAXIAL
EPIDERMIS

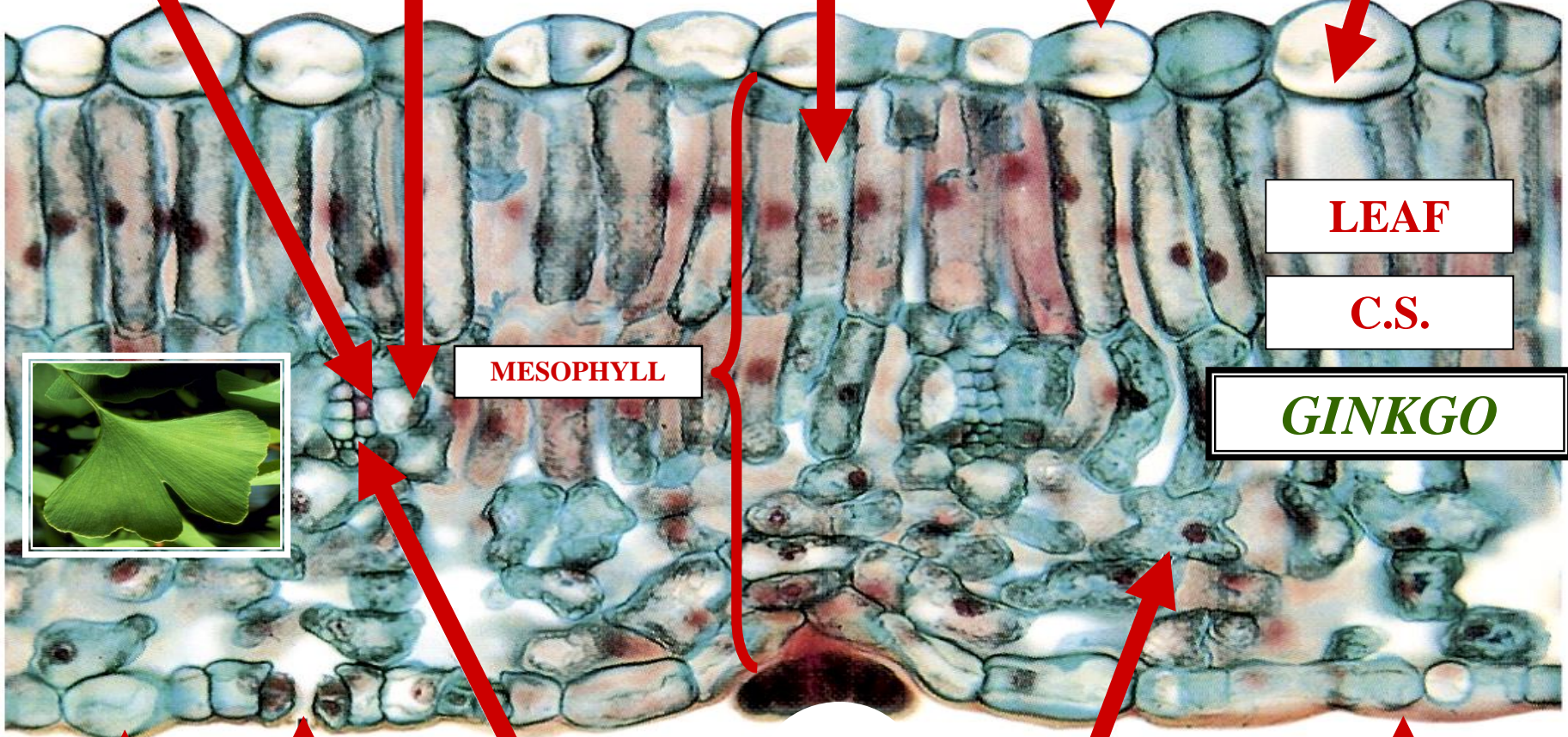
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MESOPHYLL

SPONGY
MESOPHYLL



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VASCULAR BUNDLE

PALISADE MESOPHYLL

MODERATE CUTICLE

ADAXIAL EPIDERMIS

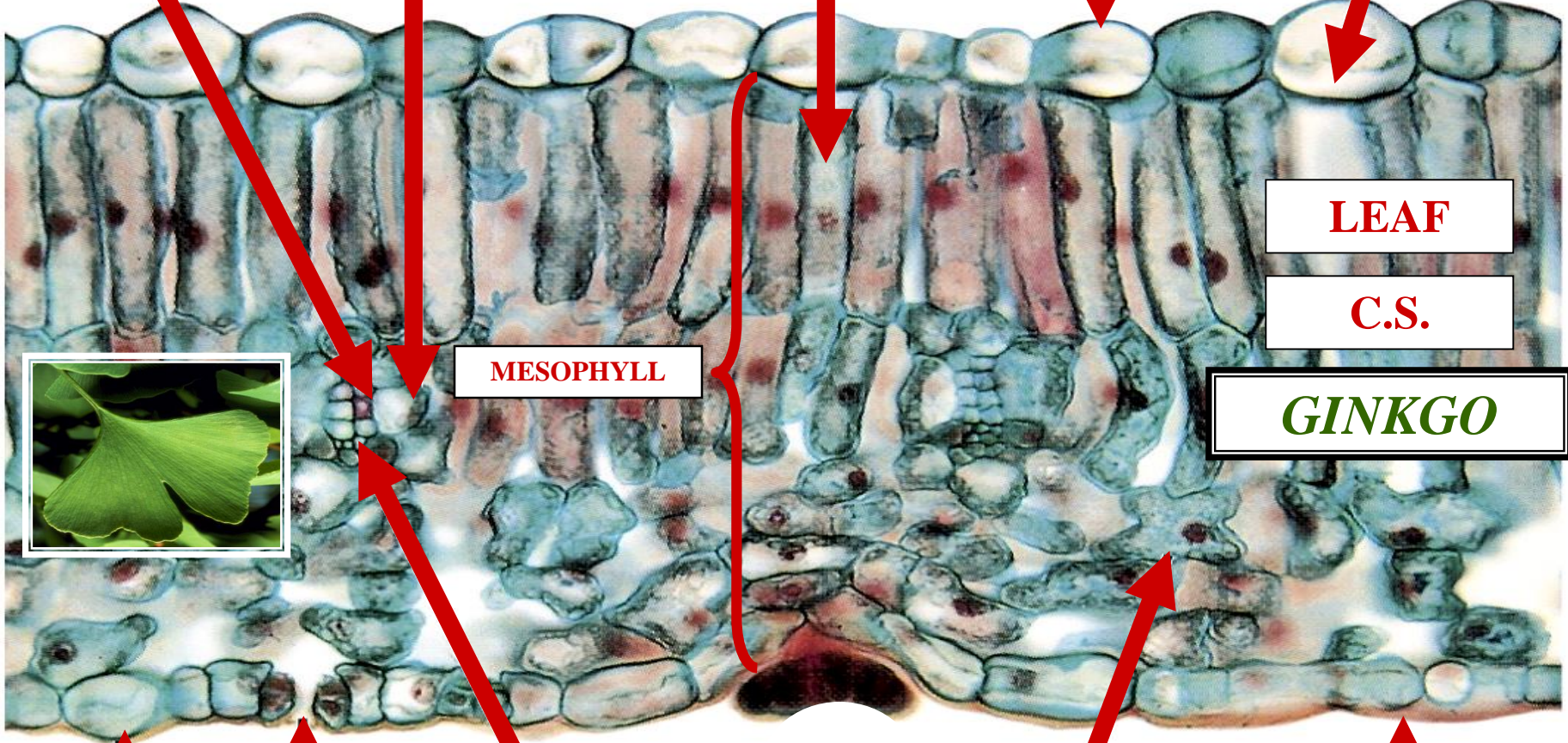
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GINKGO

MESOPHYLL

SPONGY MESOPHYLL



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SPONGY MESOPHYLL

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XYLEM

VASCULAR BUNDLE

PALISADE MESOPHYLL

MODERATE CUTICLE

ADAXIAL EPIDERMIS

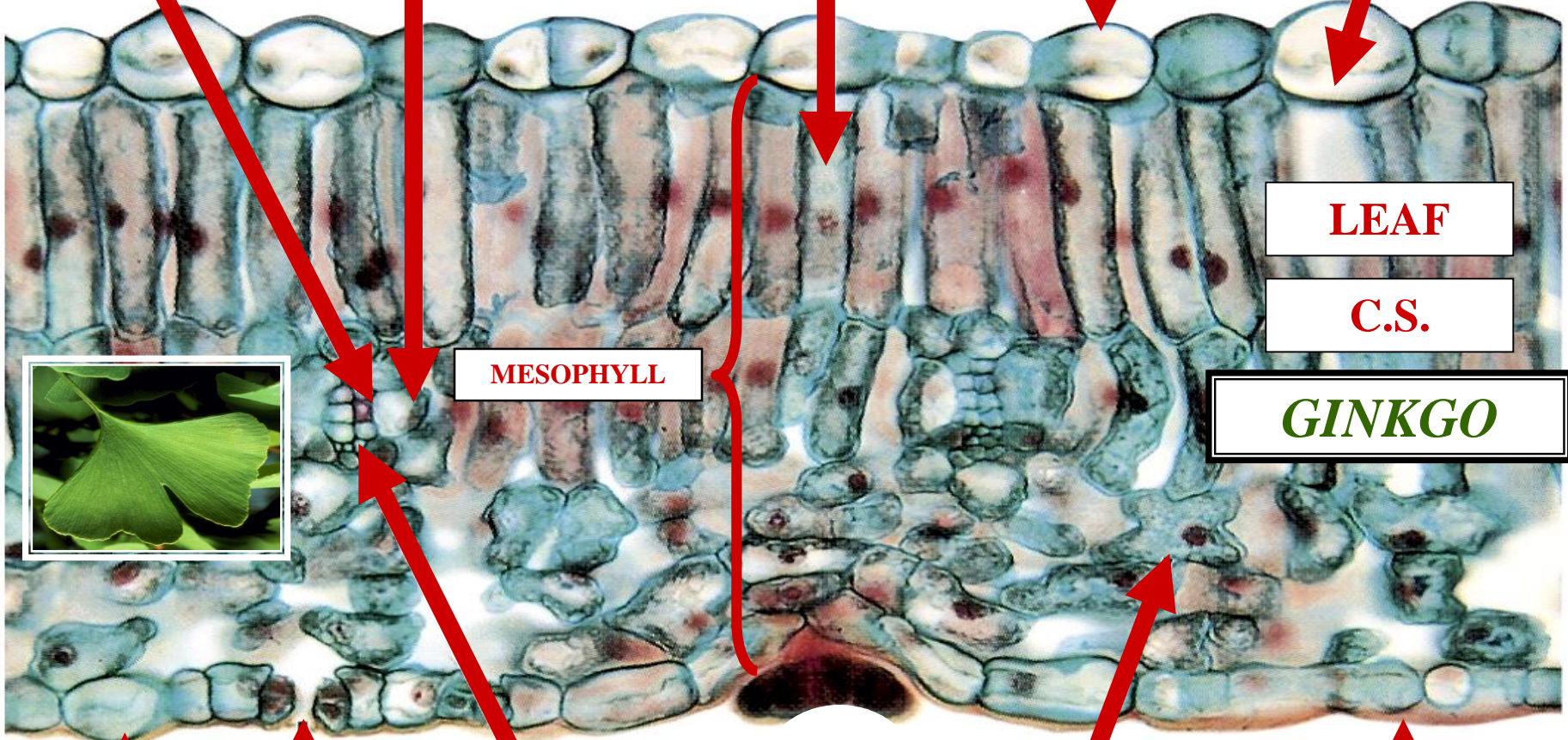
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C.S.

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MESOPHYLL

SPONGY MESOPHYLL



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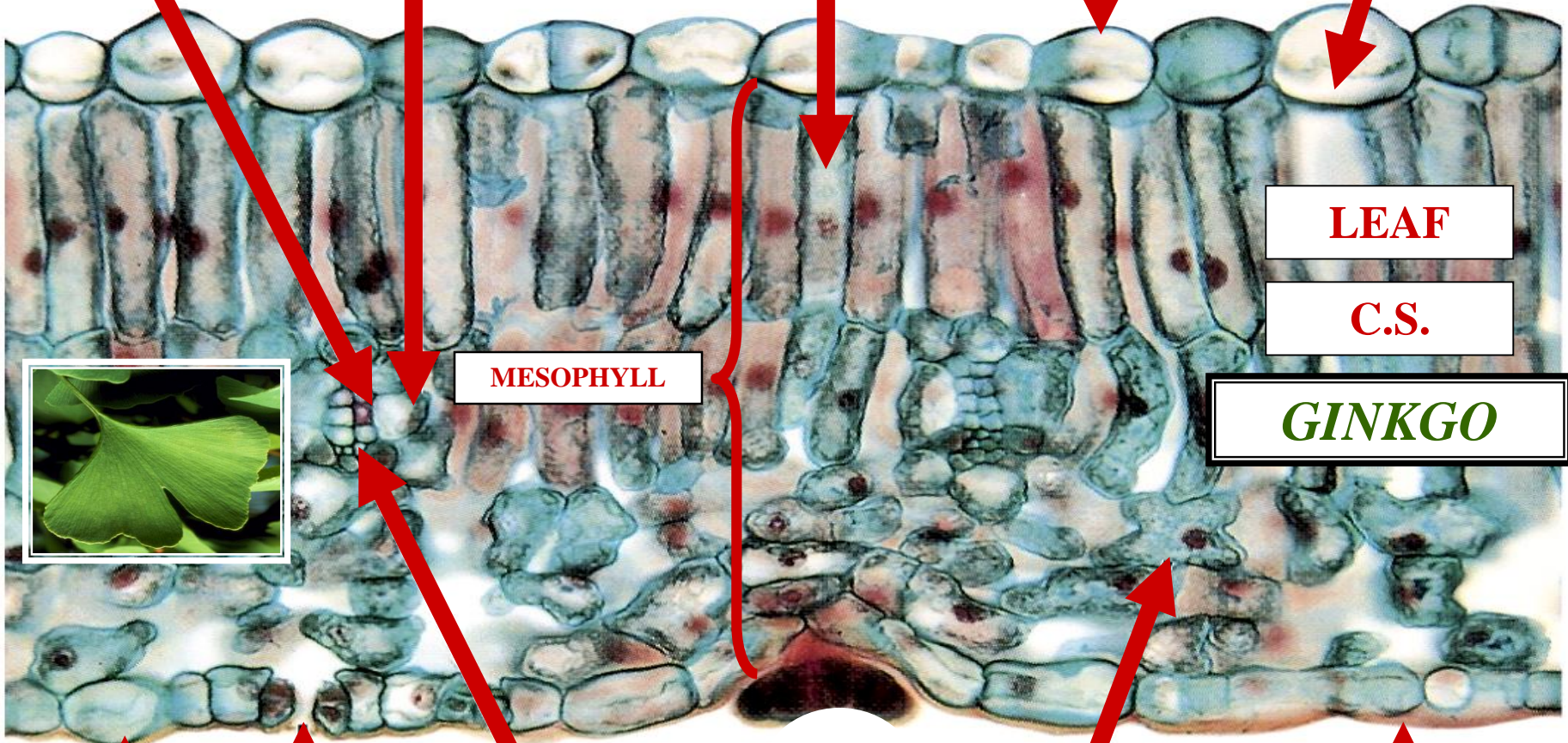
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PALISADE MESOPHYLL

MODERATE CUTICLE

ADAXIAL EPIDERMIS



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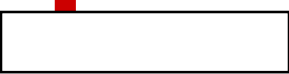
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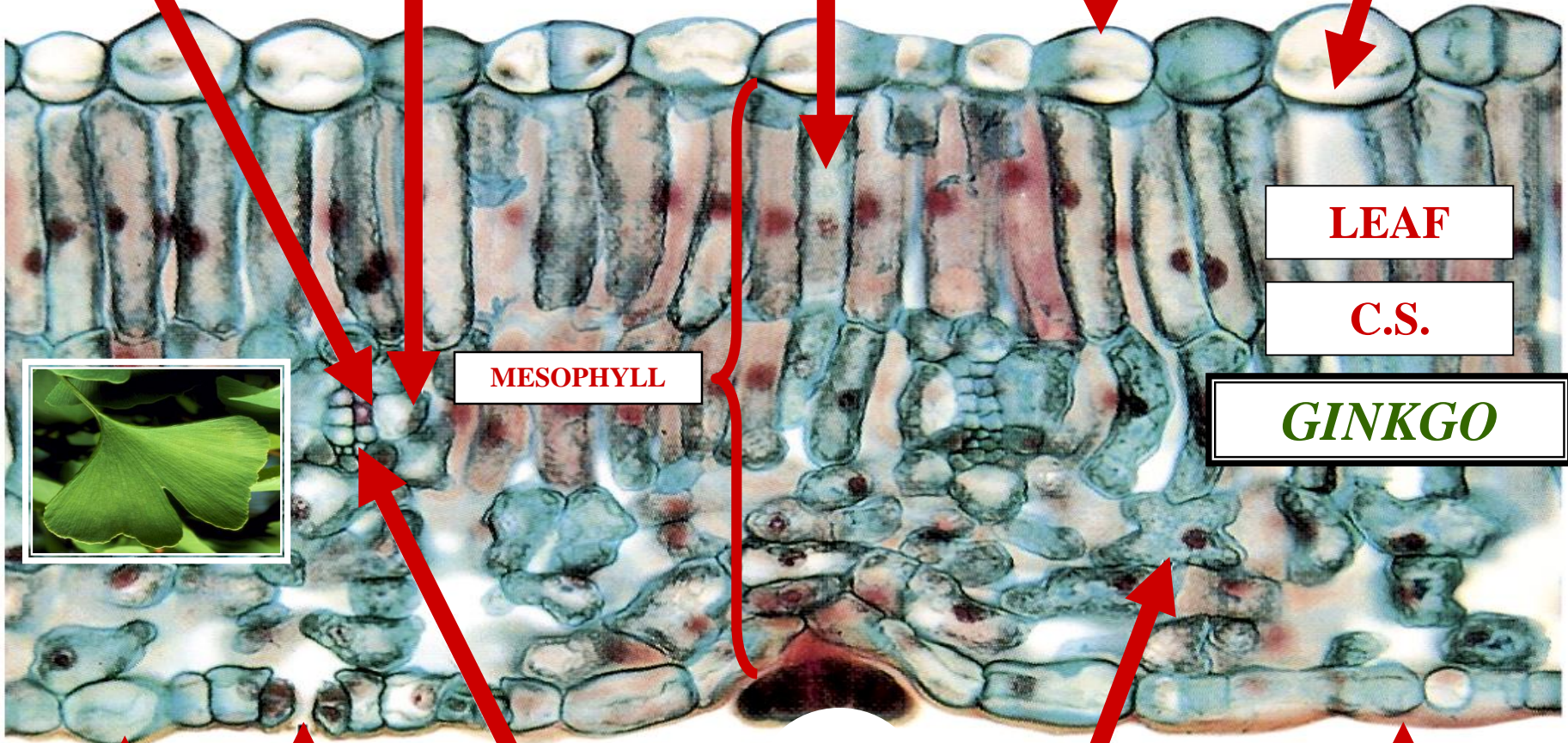
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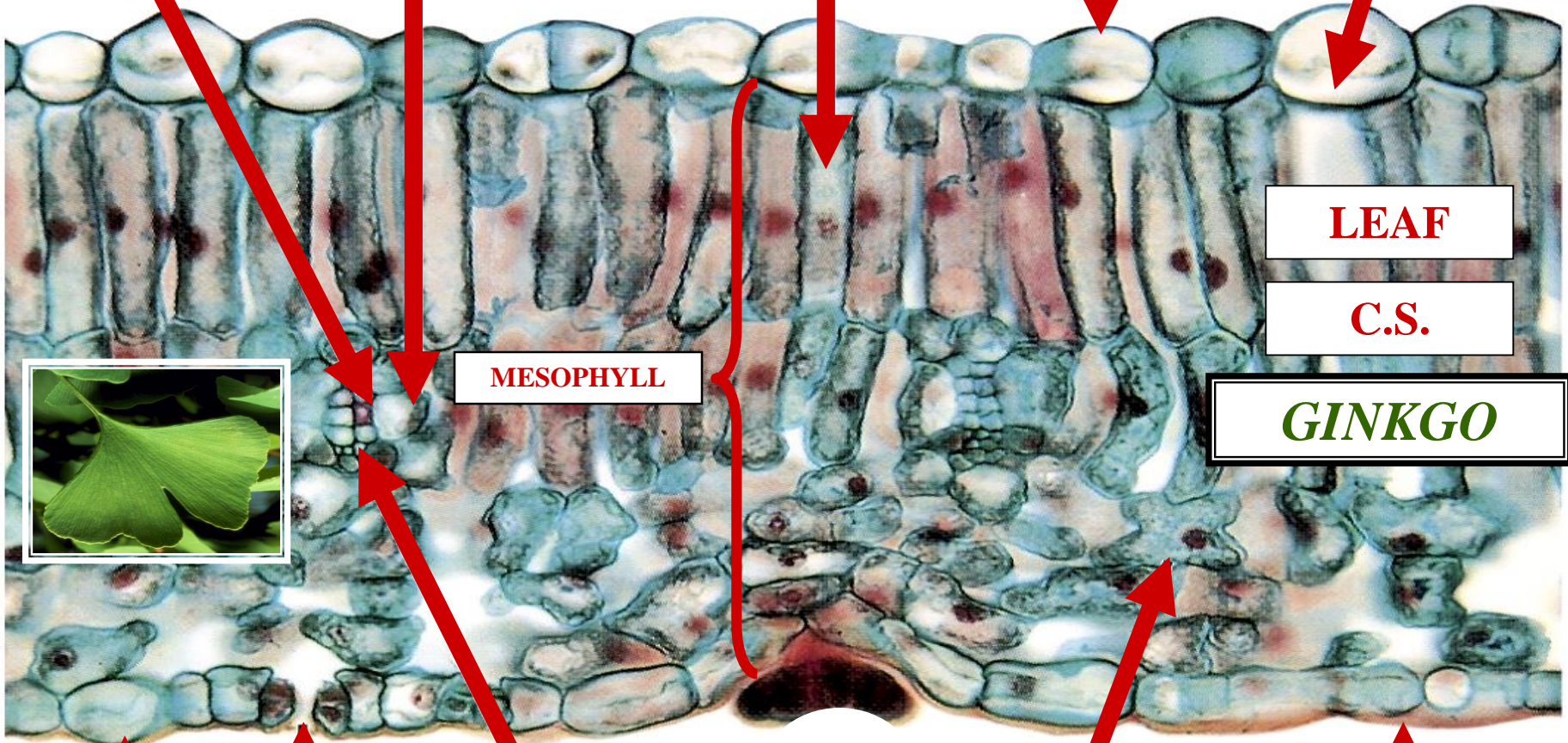
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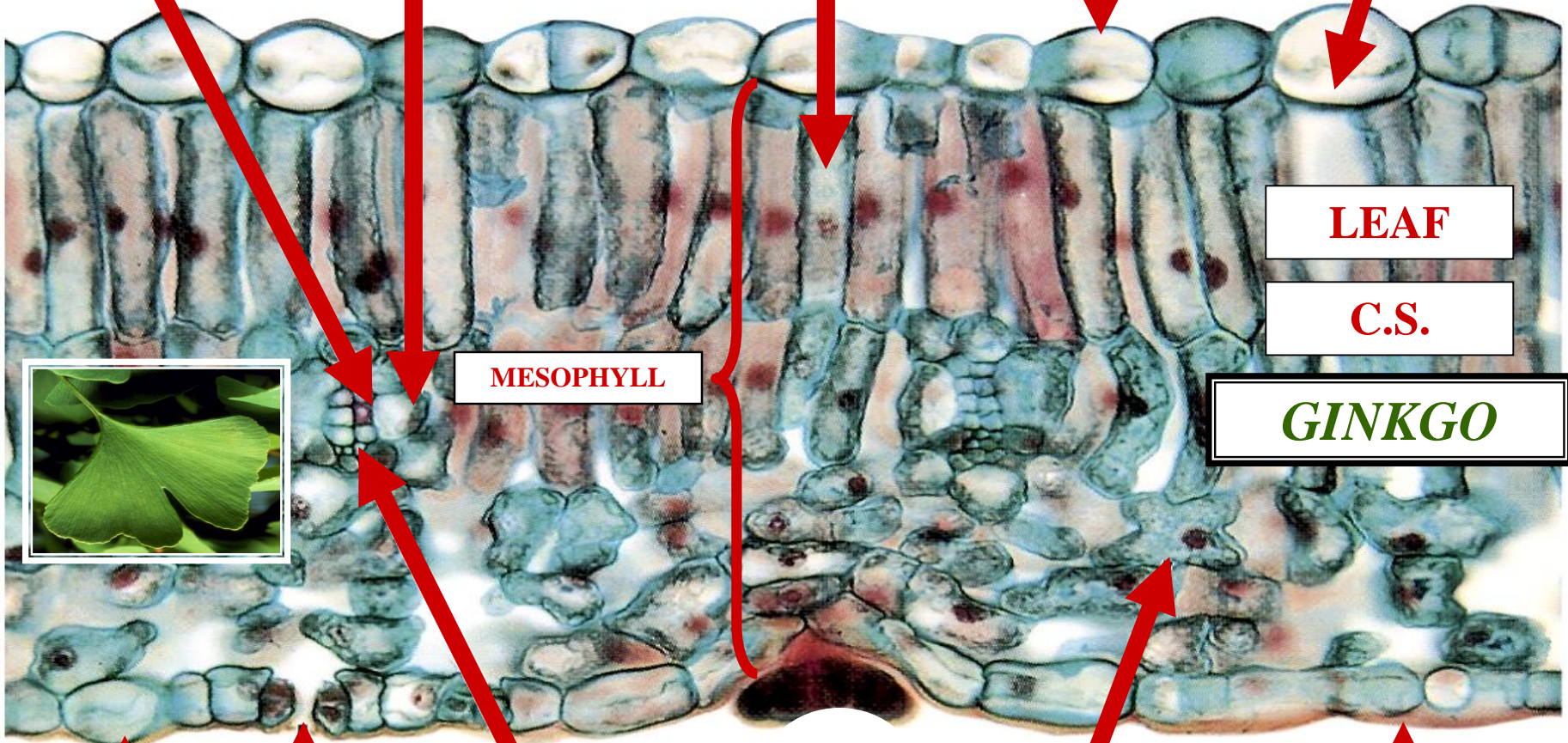
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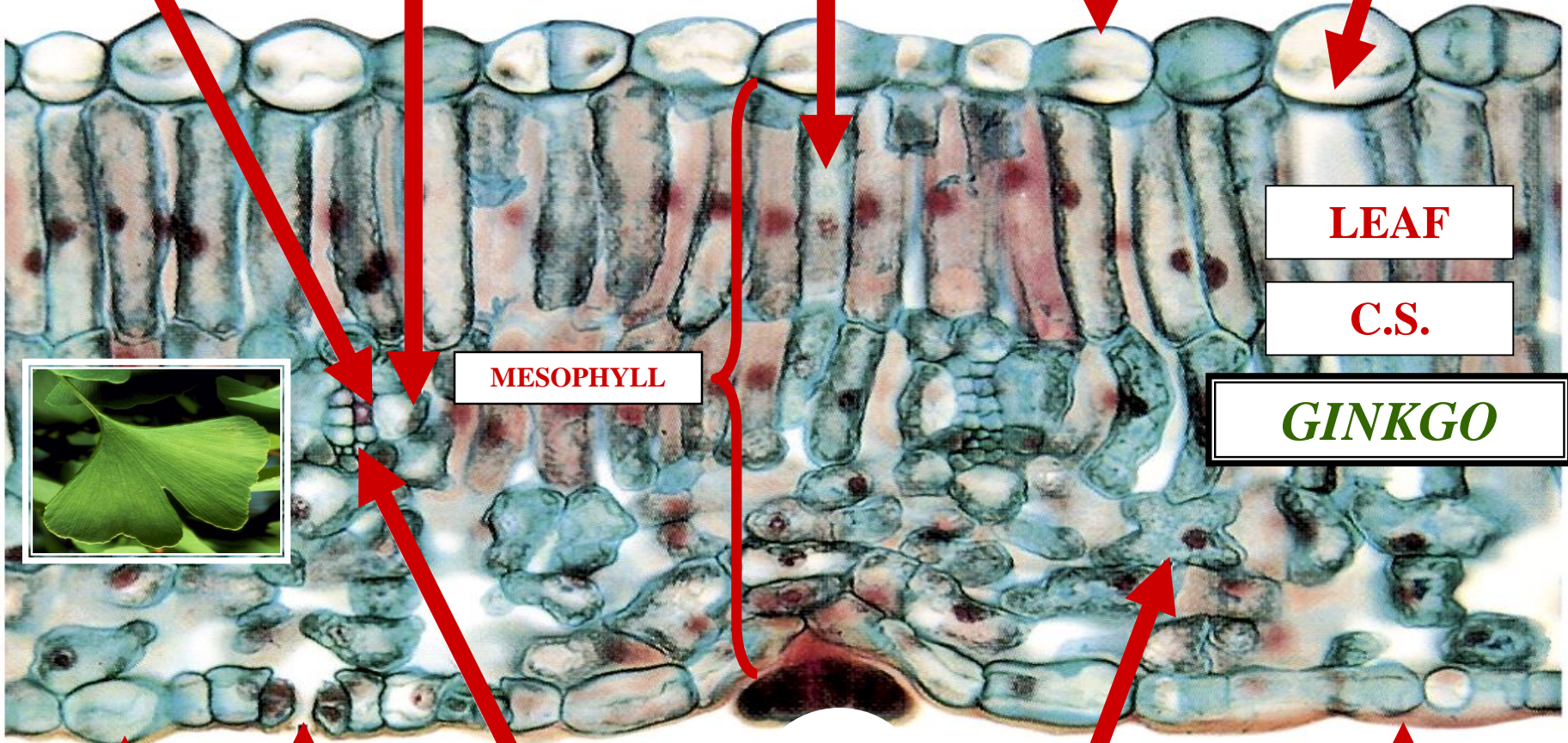
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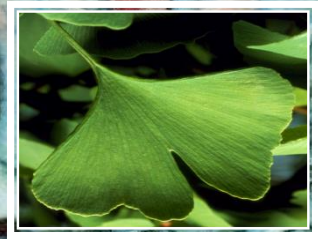
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SPONGY MESOPHYLL

ABAXIAL EPIDERMIS

STOMATE





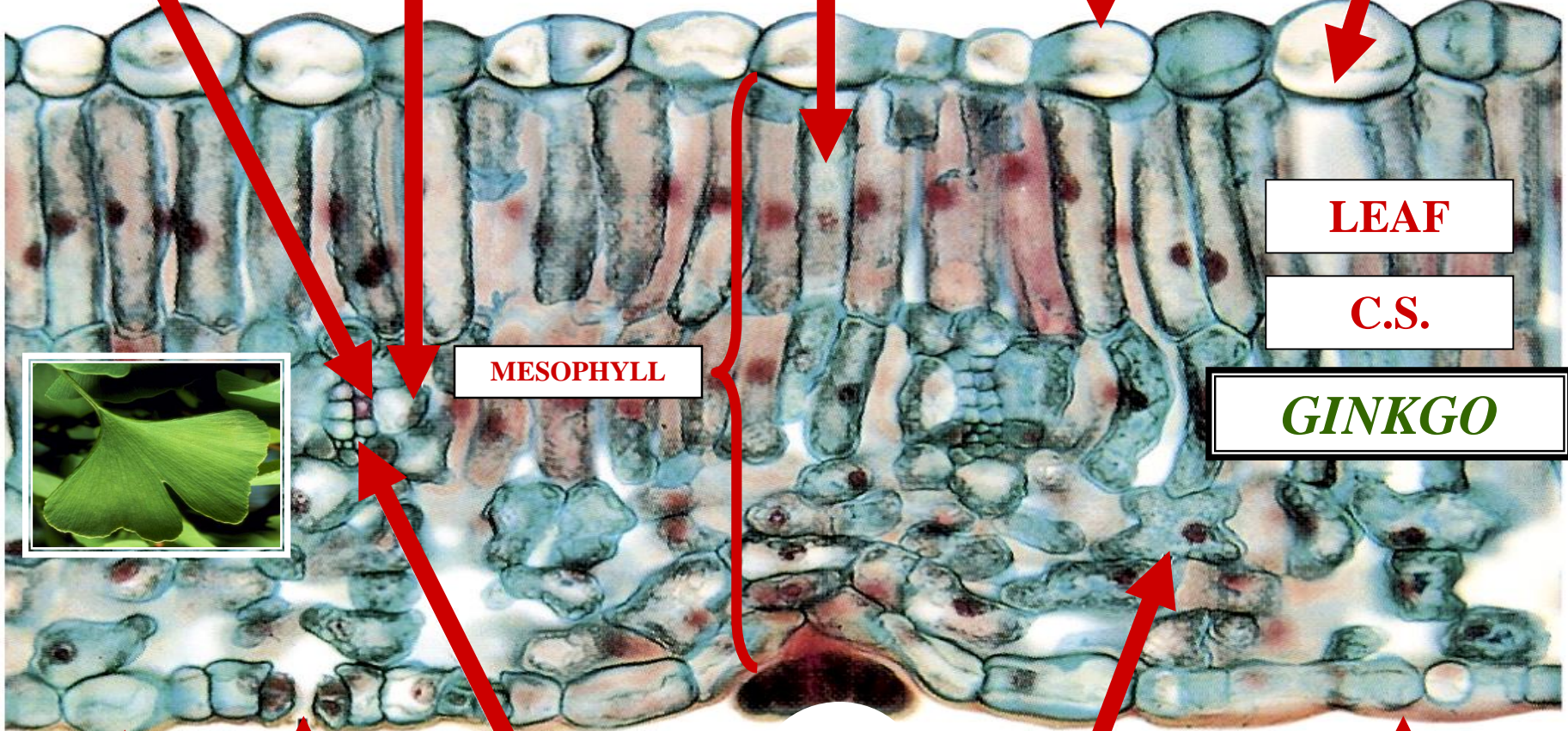
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STOMATE

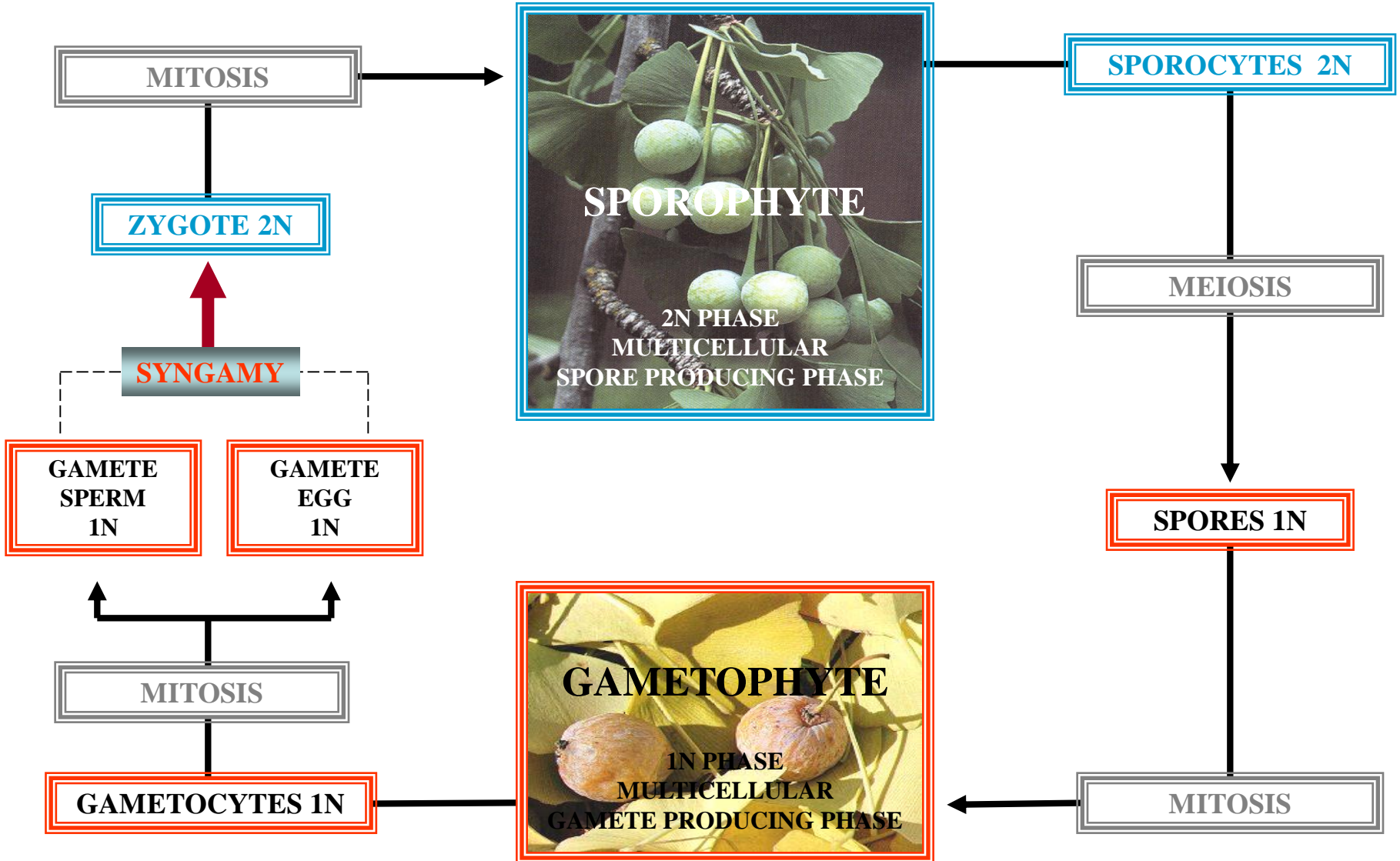




**GINKGO
ADAPTED
MESIC TEMPERATE
FORESTS**

GINKGOPHYTA

LIFE CYCLE





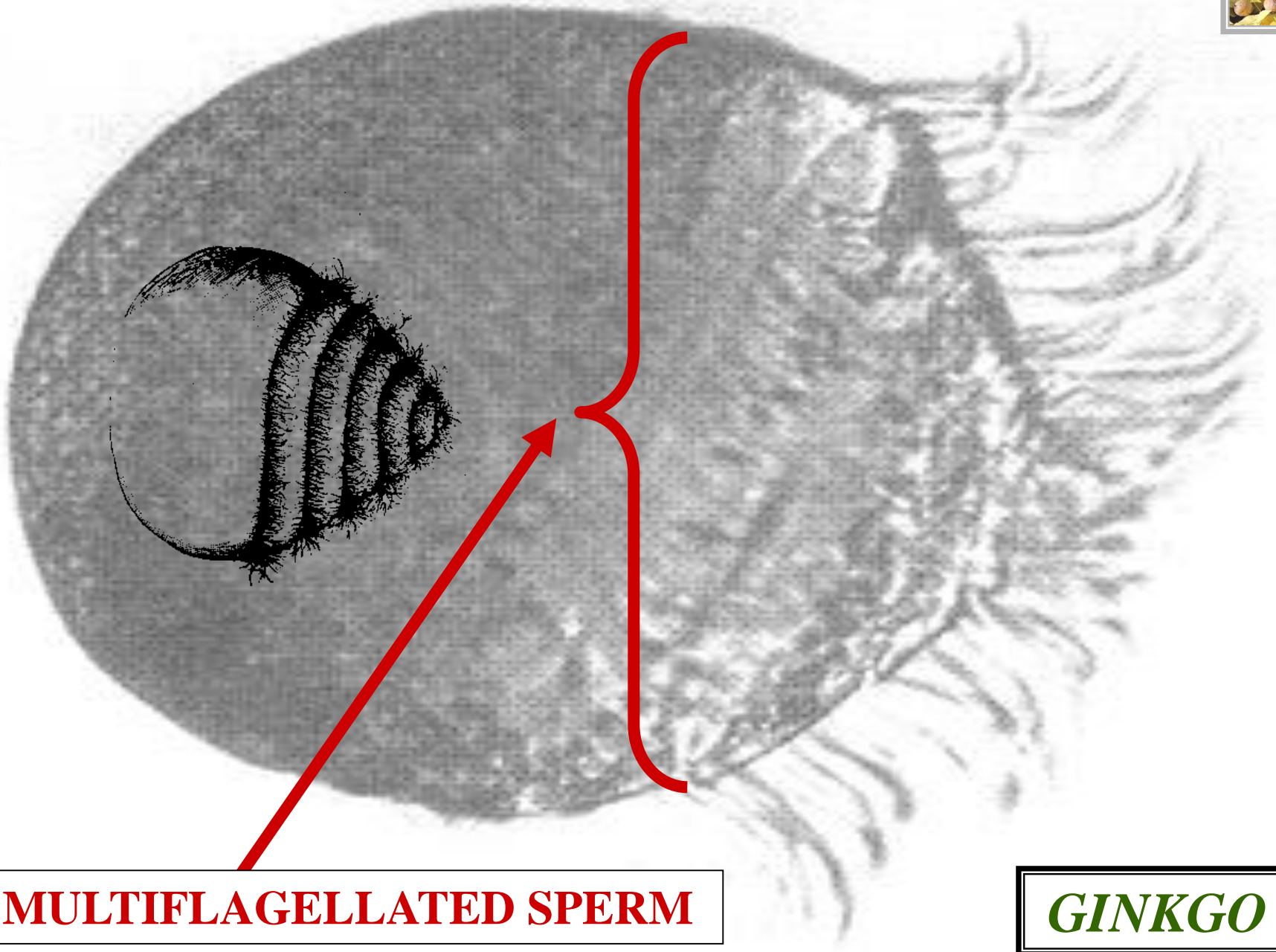
GAMETOPHYTE CHARACTERS



MICROGAMETOPHYTE



SPERM



MULTIFLAGELLATED SPERM

GINKGO

SYNGAMY POST OVULE ABSCISSION



GINKGO



MEGAGAMETOPHYTE



ARCHEGONIA

L.S.

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INTEGUMENT

MEGASPORE
WALL

NUCELLUS

GINKGO

ARCHEGONIUM

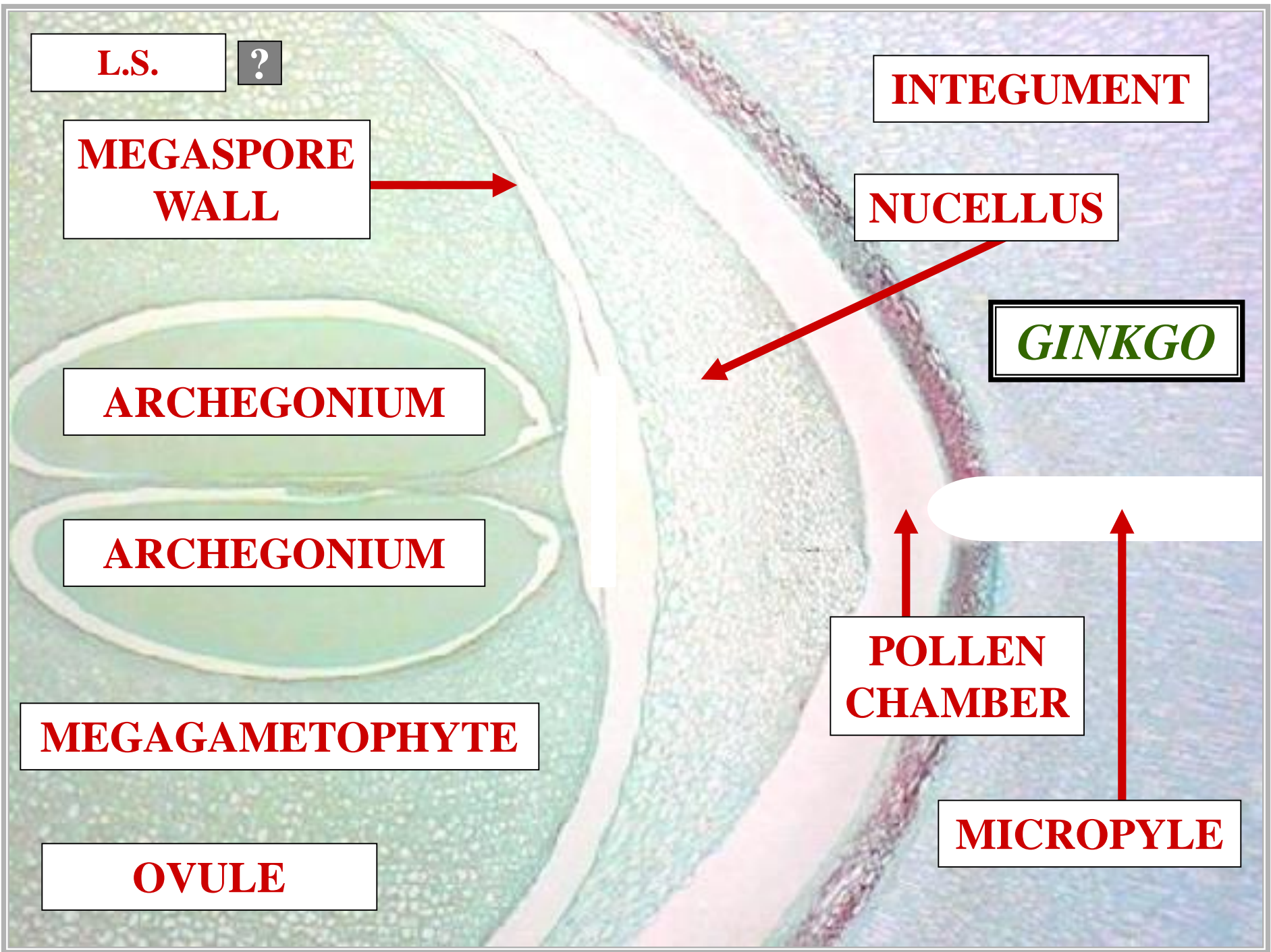
ARCHEGONIUM

POLLEN
CHAMBER

MEGAGAMETOPHYTE

MICROPYLE

OVULE



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INTEGUMENT

MEGASPORE
WALL

NUCELLUS

GINKGO

ARCHEGONIUM

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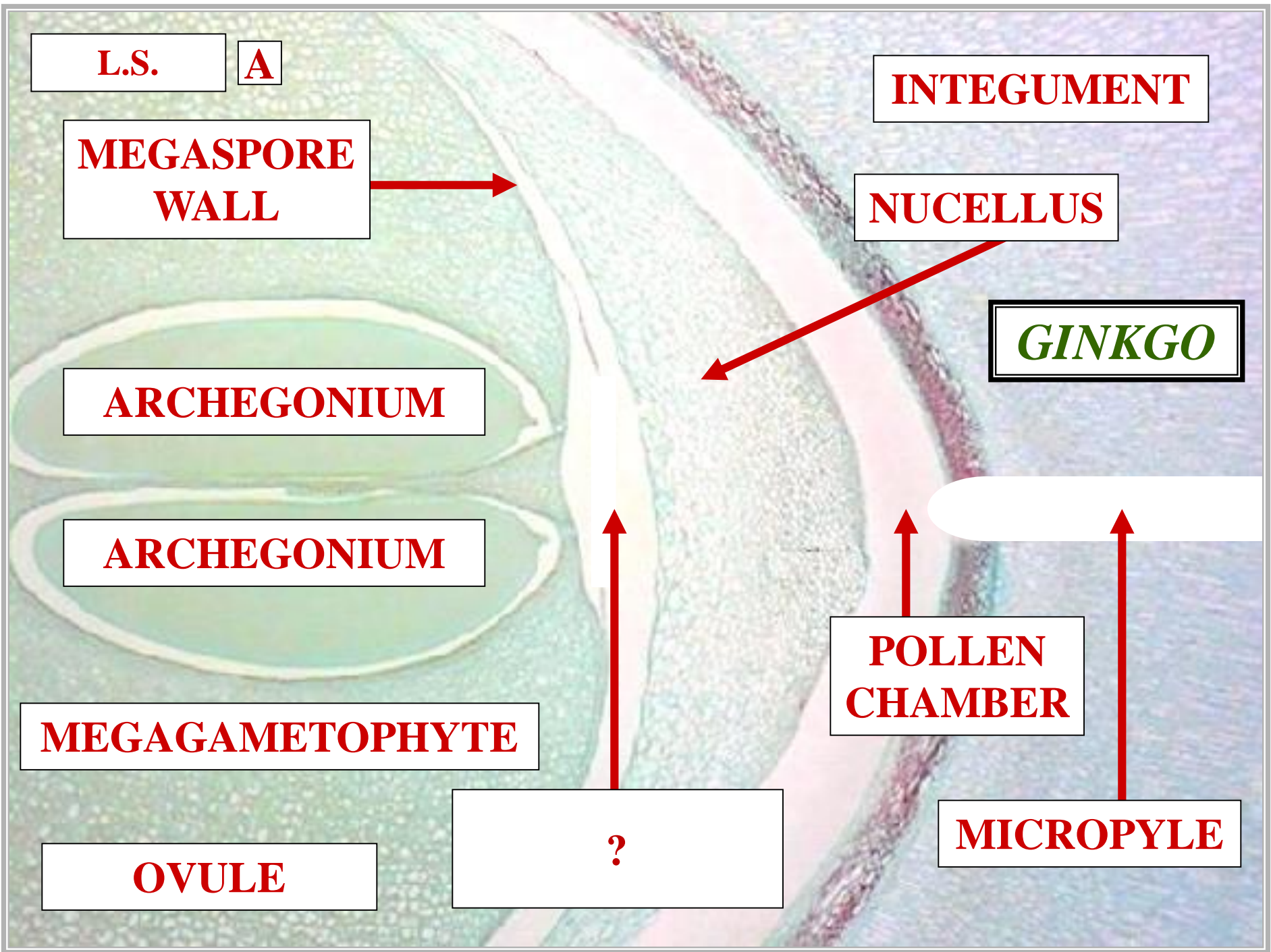
MEGAGAMETOPHYTE

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INTEGUMENT

MEGASPORE WALL

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ARCHEGONIUM

ARCHEGONIUM

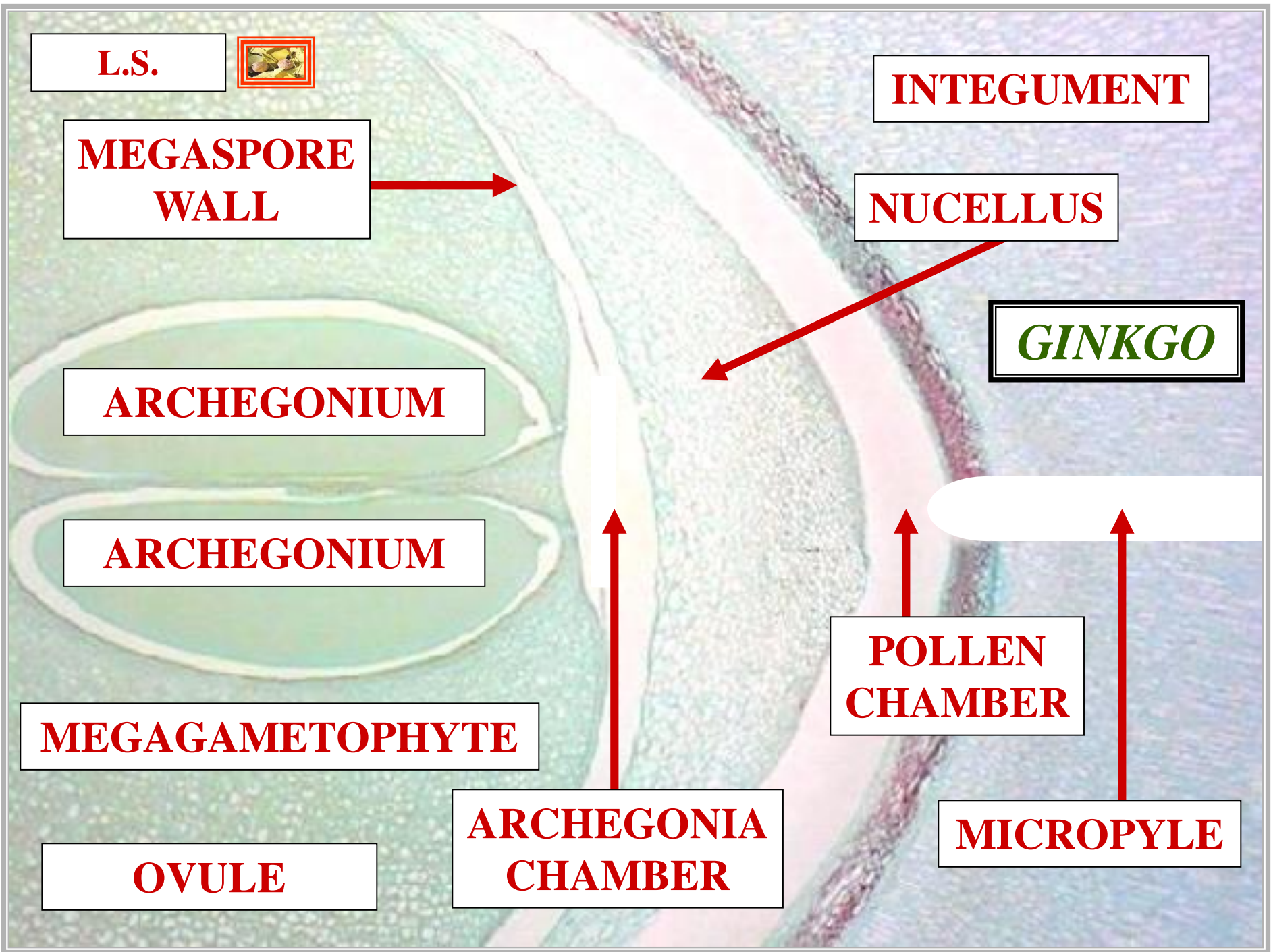
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MEGAGAMETOPHYTE

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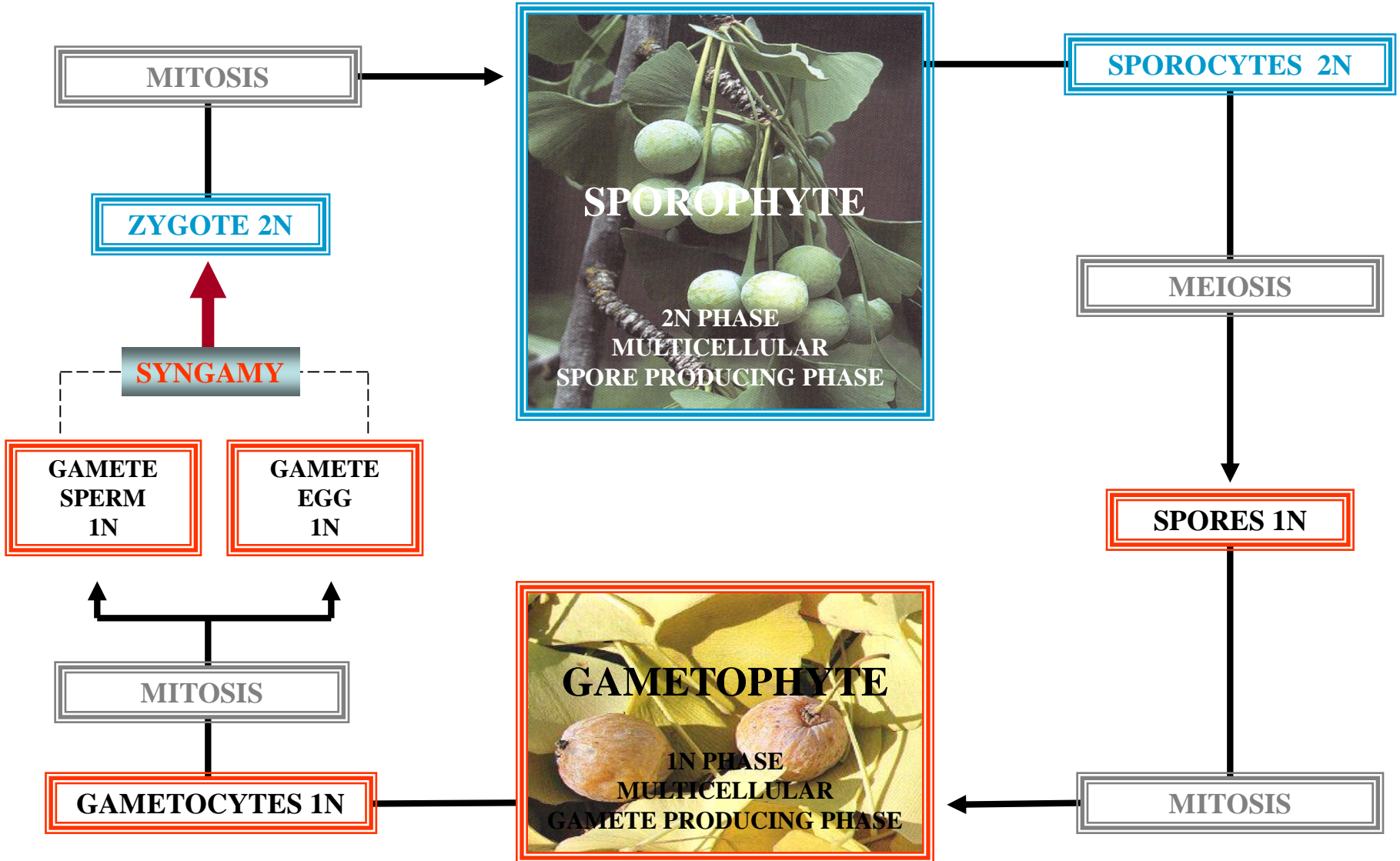
MICROPYLE

OVULE



GINKGOPHYTA

LIFE CYCLE





REPRODUCTION



SEX CONDITION

GINKGO

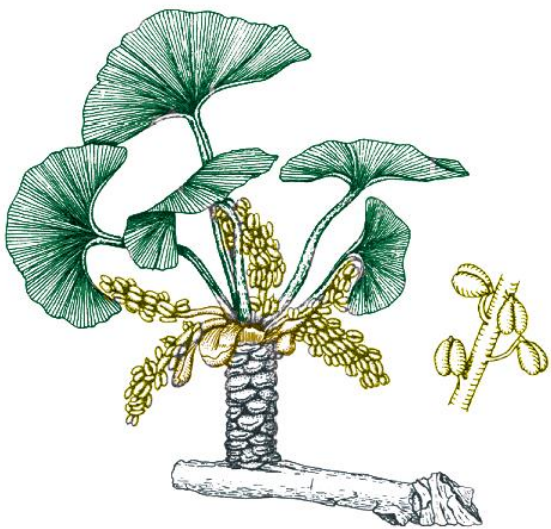
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GINKGO

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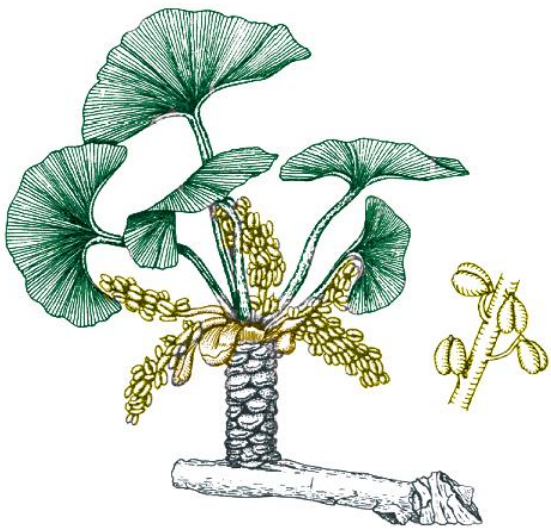
MICROSTROBILI



GINKGO

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MICROSPORANGIA

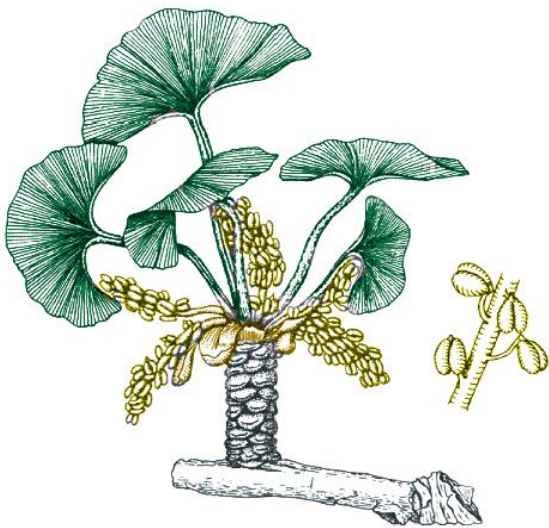


GINKGO

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“MALE” PLANT

MICROSPORANGIA



GINKGO

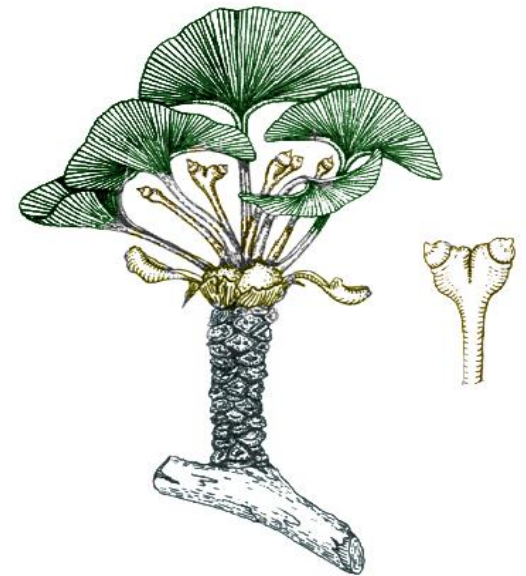
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GINKGO

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MEGASTROBILI



GINKGO

“F”

MEGASPORANGIA



GINKGO

2

“FEMALE” PLANT

MEGASPORANGIA

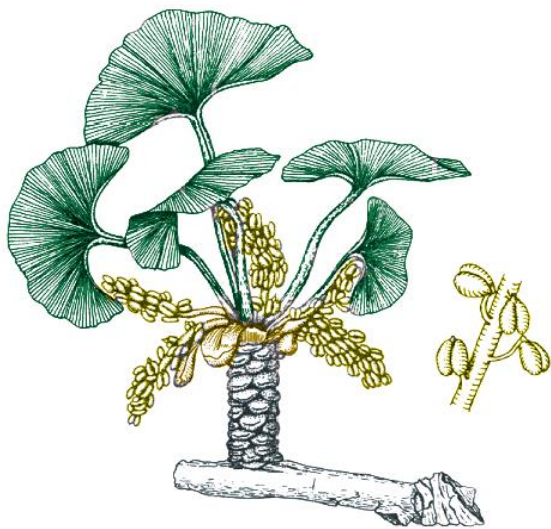


GINKGO

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“MALE” PLANT

MICROSPORANGIA



“FEMALE” PLANT

MEGASPORANGIA

