











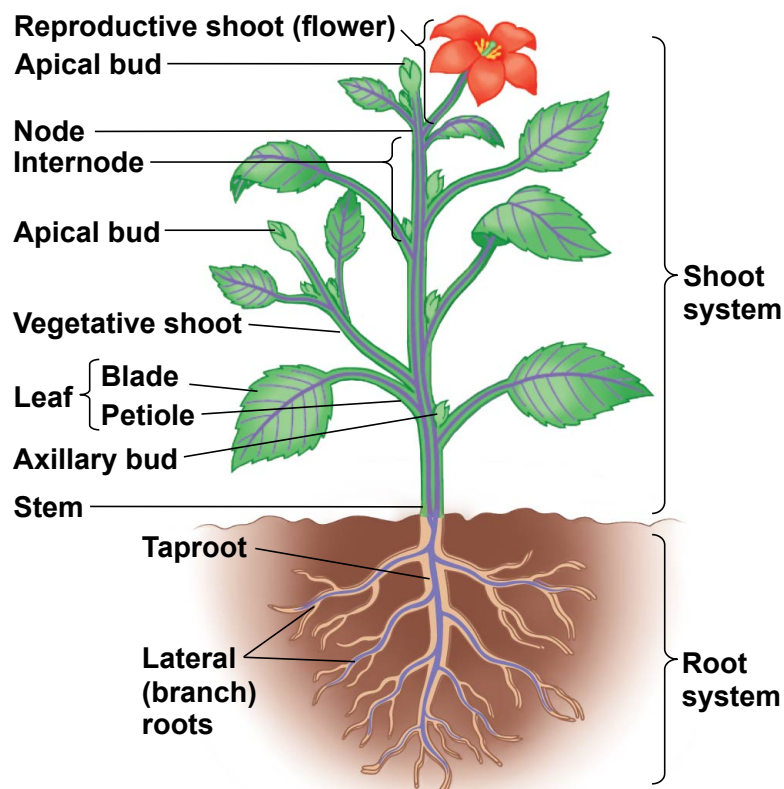


	Monocots	Eudicots
Embryos	 One cotyledon	 Two cotyledons
Leaf venation	 Veins usually parallel	 Veins usually netlike
Stems	 Vascular tissue scattered	 Vascular tissue usually arranged in ring
Roots	 Root system usually fibrous (no main root)	 Taproot (main root) usually present
Pollen	 Pollen grain with one opening	 Pollen grain with three openings
Flowers	 Floral organs usually in multiples of three	 Floral organs usually in multiples of four or five





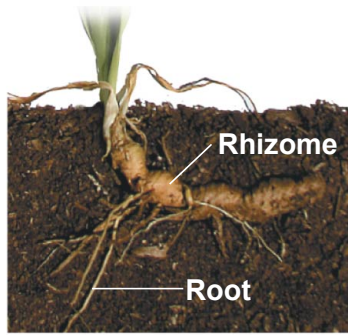
Pneumatophores



Storage roots



“Strangling” aerial roots



Rhizomes



Stolons



Tubers



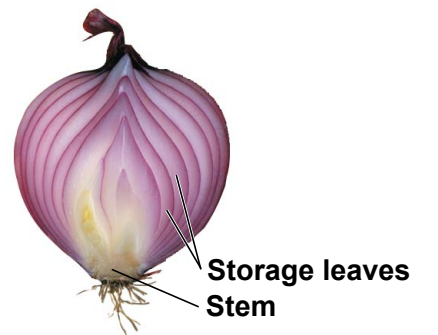
Spines



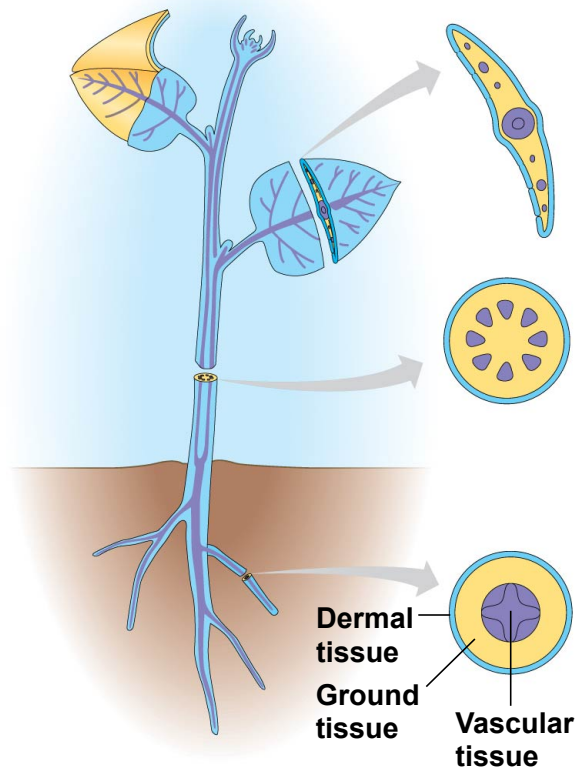
Tendrils



Reproductive leaves

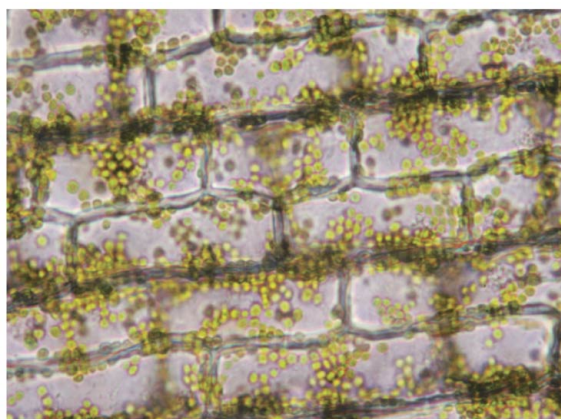


Storage leaves



© 2014 Pearson Education, Inc.

7

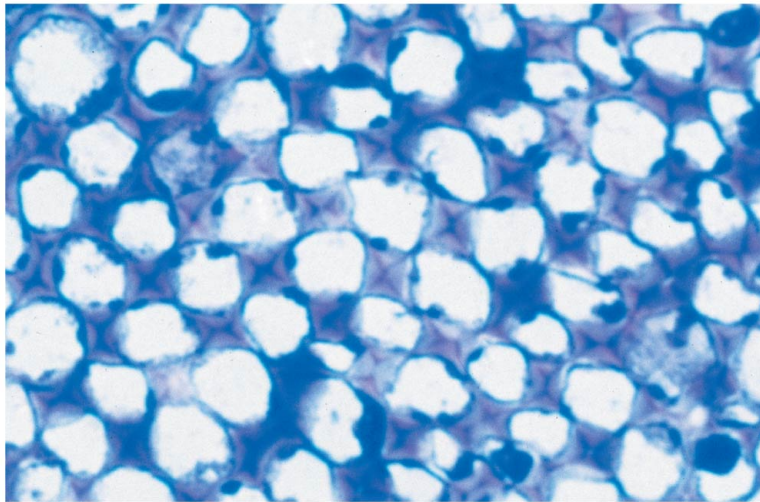


**Parenchyma cells with
chloroplasts (in *Elodea* leaf)
(LM)**

60 μm

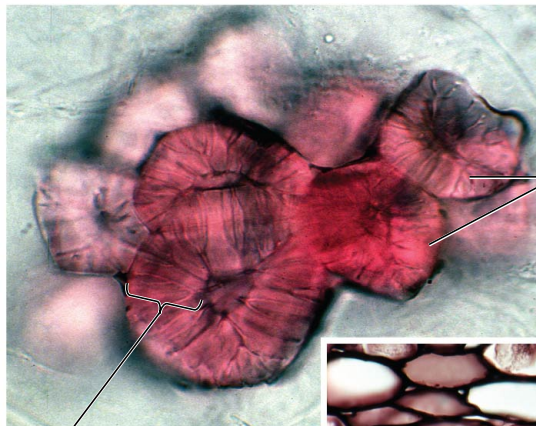
© 2014 Pearson Education, Inc.

8



**Collenchyma cells
(in *Helianthus* stem) (LM)**

5 μm

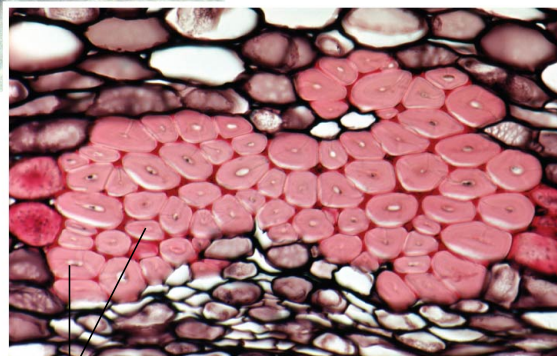


5 μm

Sclereid cells (in pear) (LM)

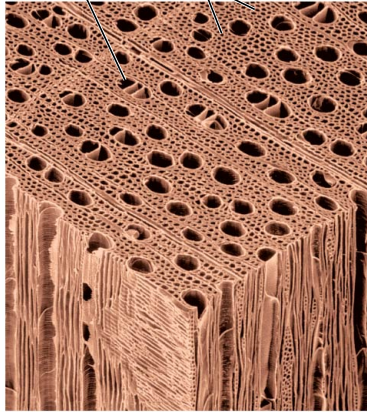
Cell wall

25 μm



Fiber cells (cross section from ash tree) (LM)

Vessel Tracheids 100 μm

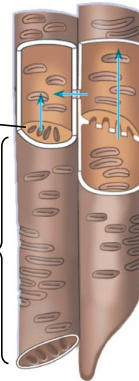


Tracheids and vessels
(colorized SEM)

Perforation
plate

Vessel element

Vessel elements, with
perforated end walls



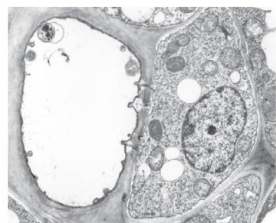
Pits

Tracheids



© 2014 Pearson Education, Inc.

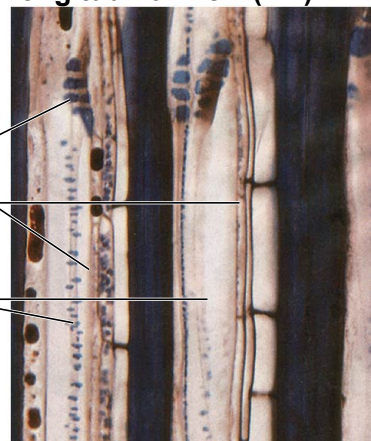
11



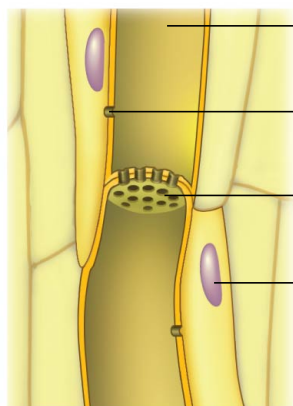
Sieve-tube element (left)
and companion cell:
cross section (TEM)

3 μm

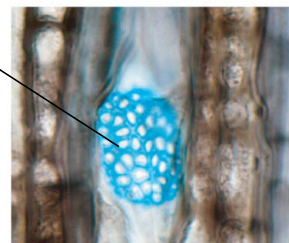
Sieve-tube elements:
longitudinal view (LM)



Sieve plate
Companion
cells



Sieve-tube elements:
longitudinal view



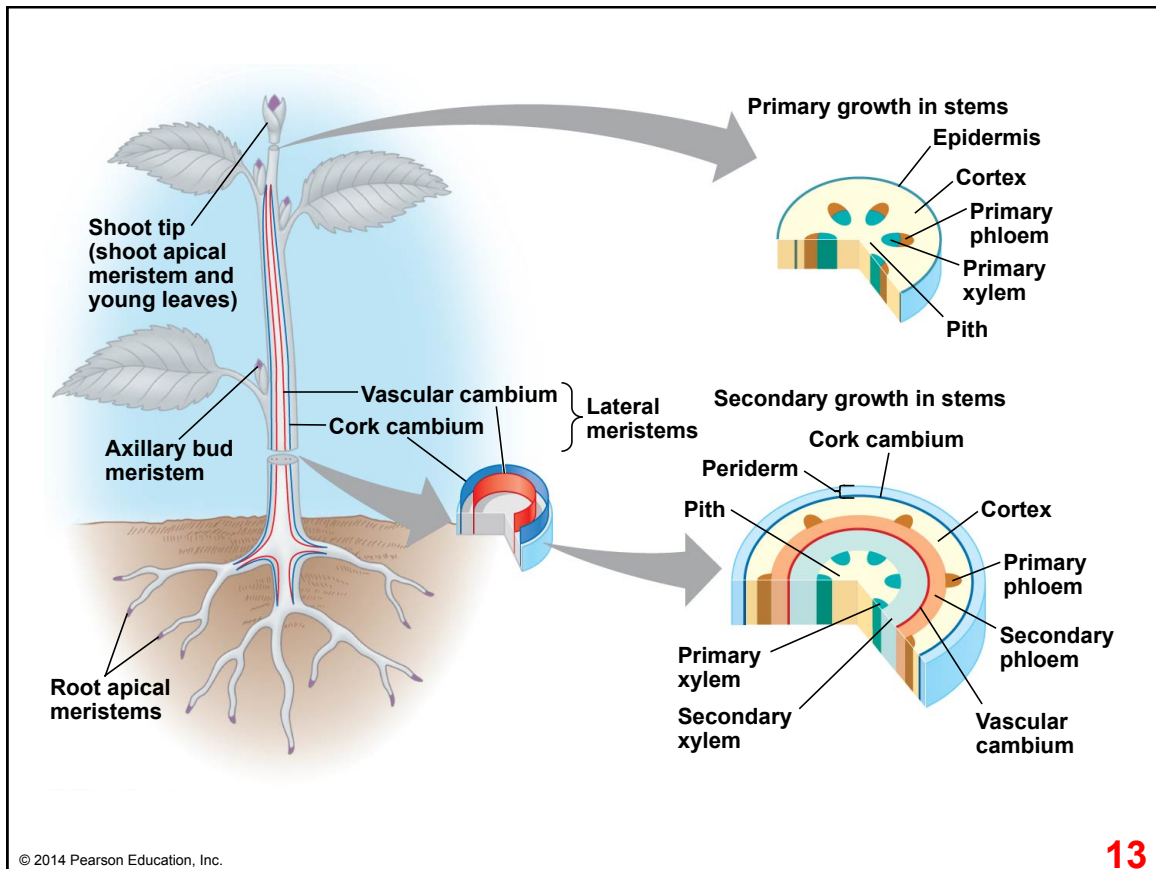
30 μm

15 μm

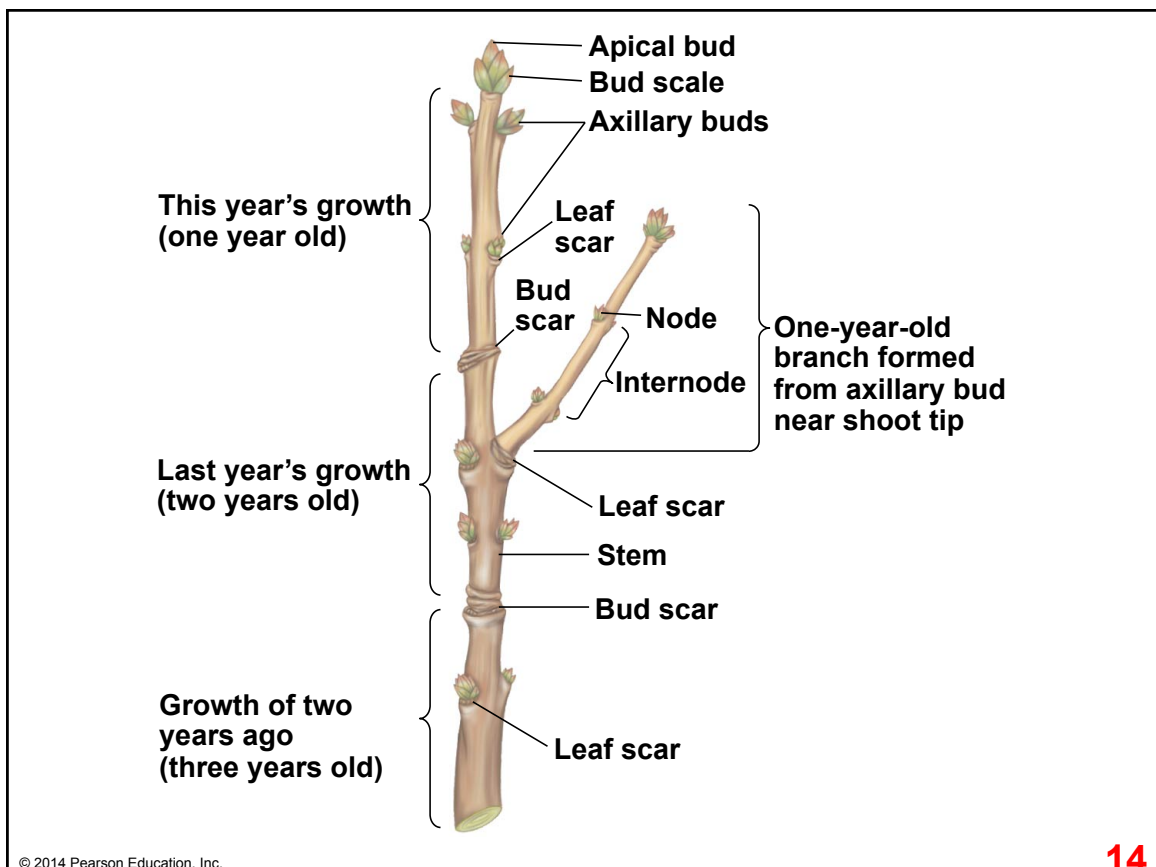
Sieve plate with pores (LM)

© 2014 Pearson Education, Inc.

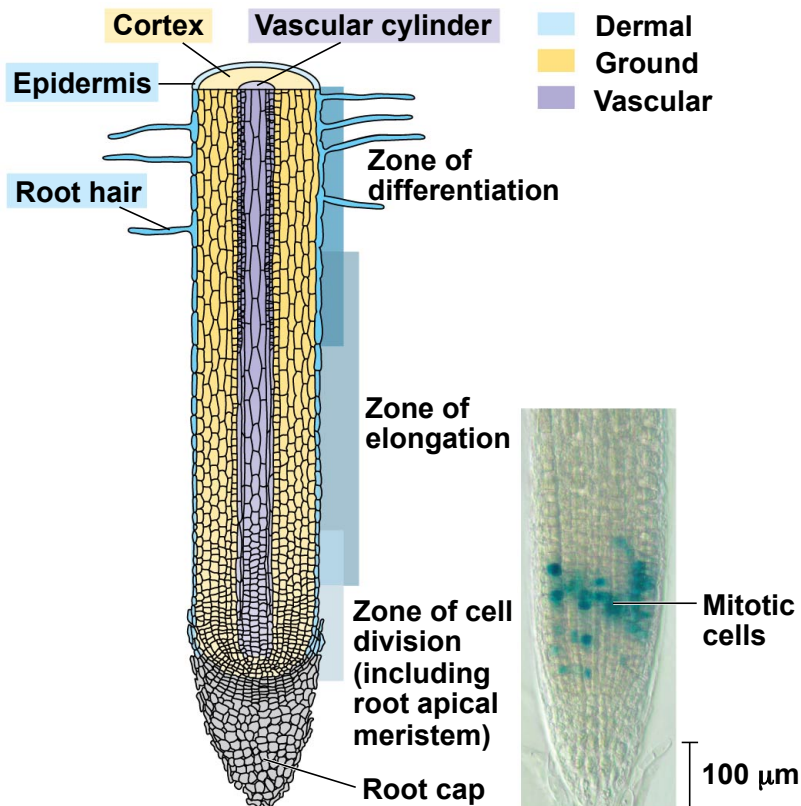
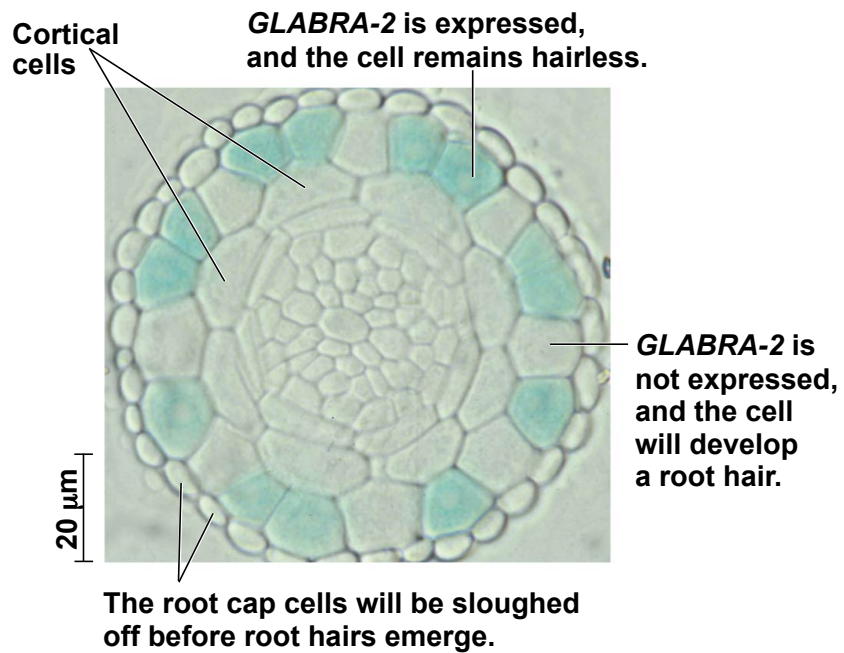
12

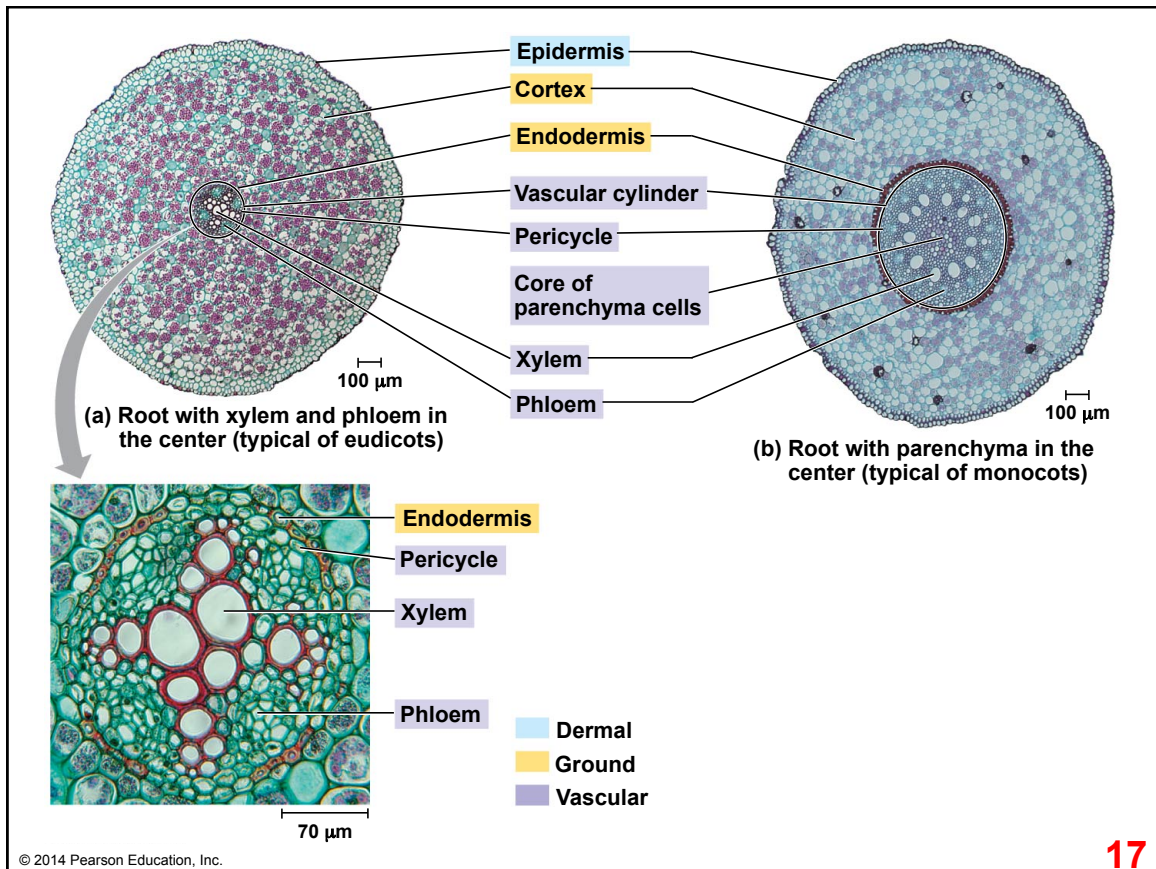


13

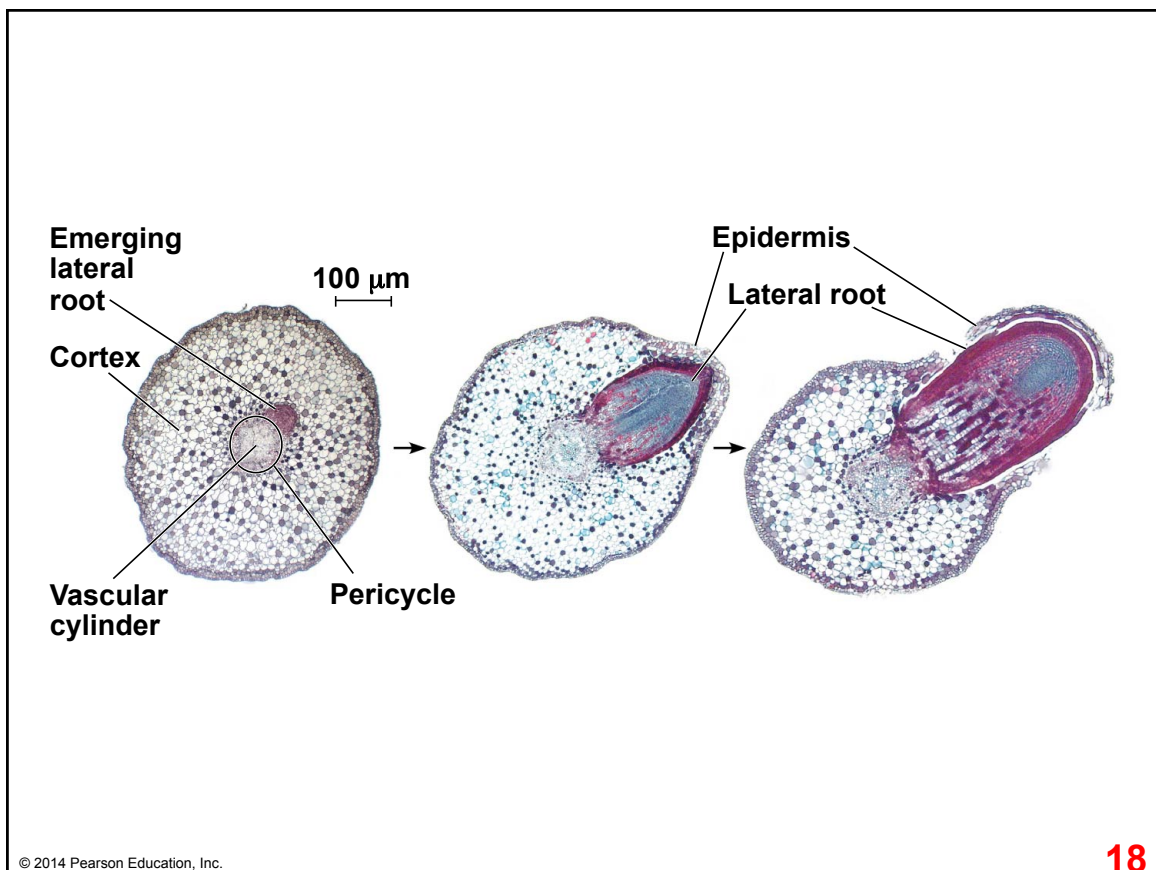


14





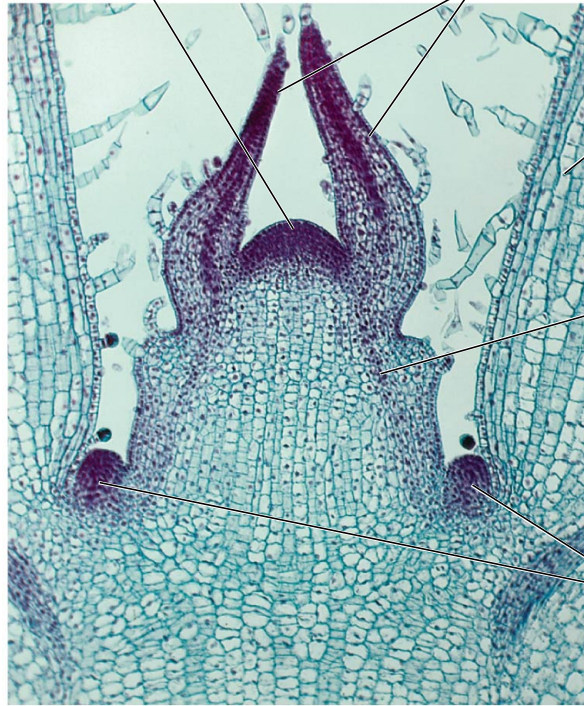
17



18

Shoot apical meristem

Leaf primordia



Young leaf

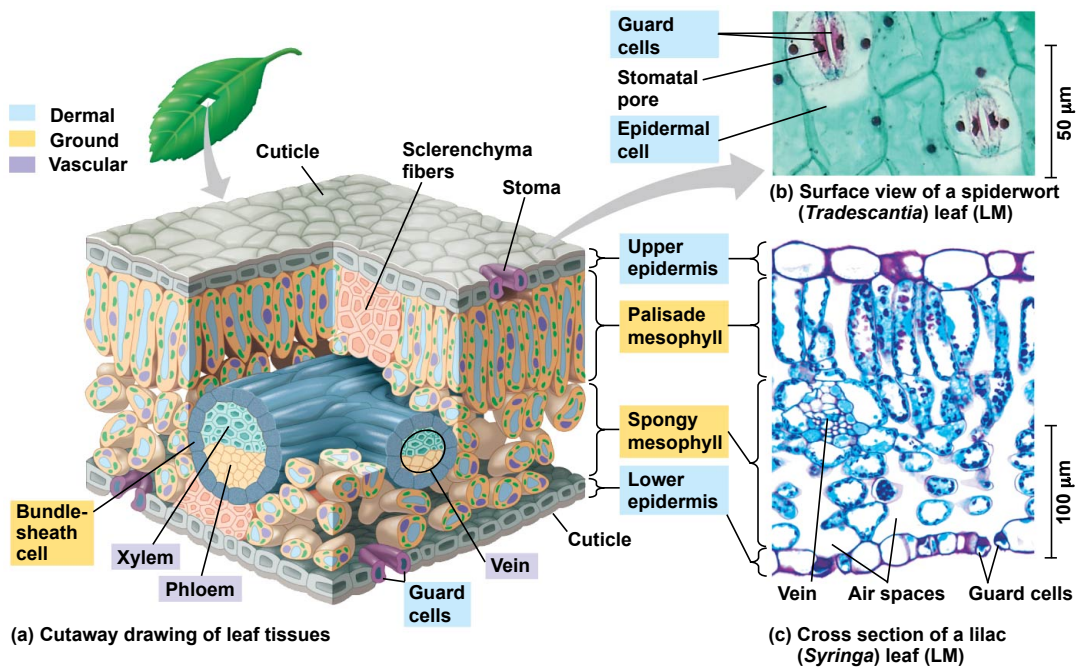
Developing vascular strand

Axillary bud meristems

0.25 mm

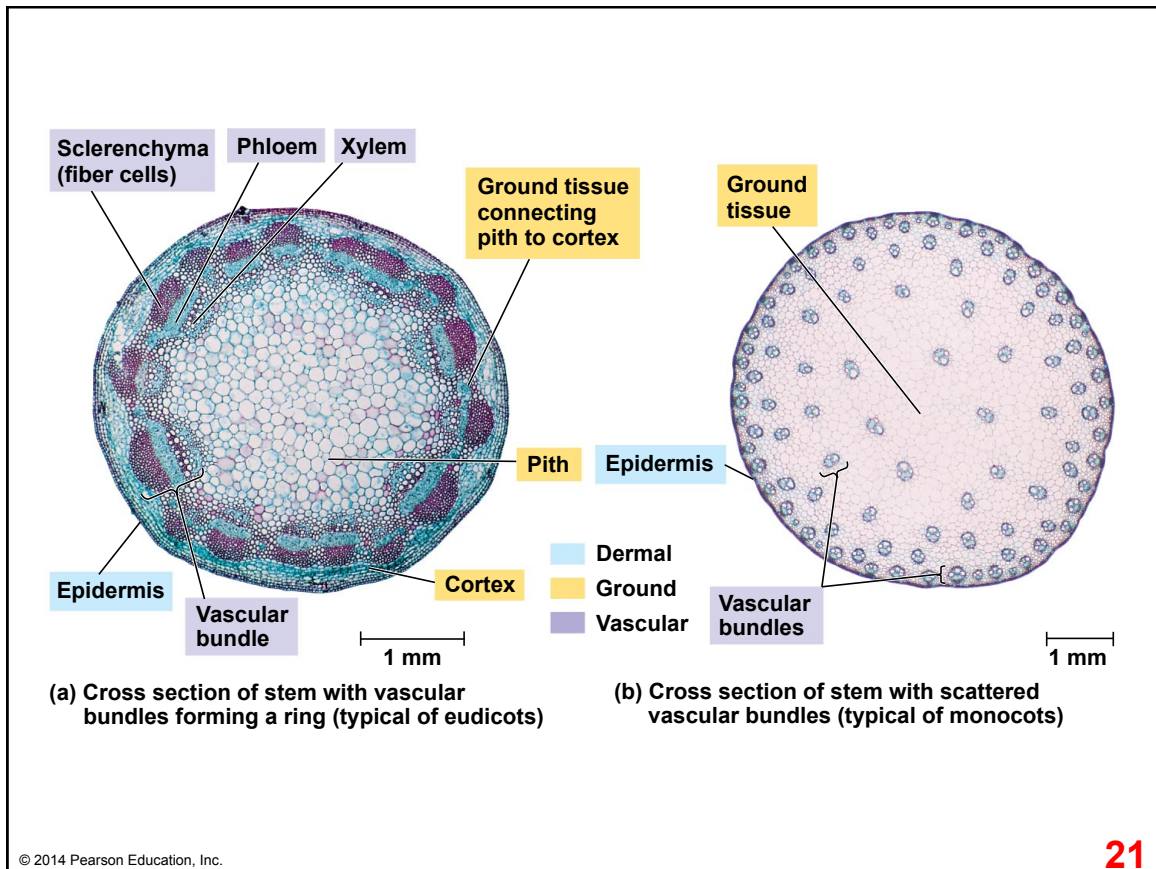
© 2014 Pearson Education, Inc.

19

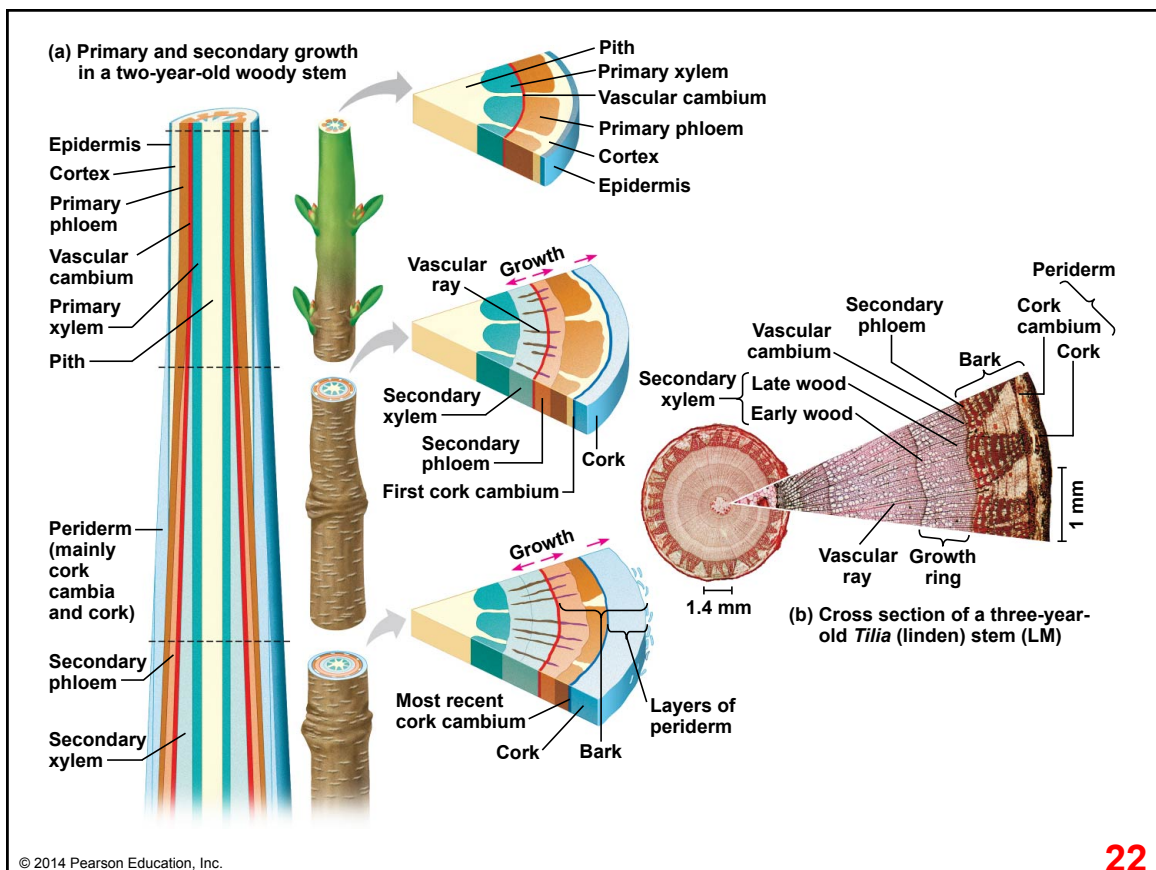


© 2014 Pearson Education, Inc.

20



21



22

