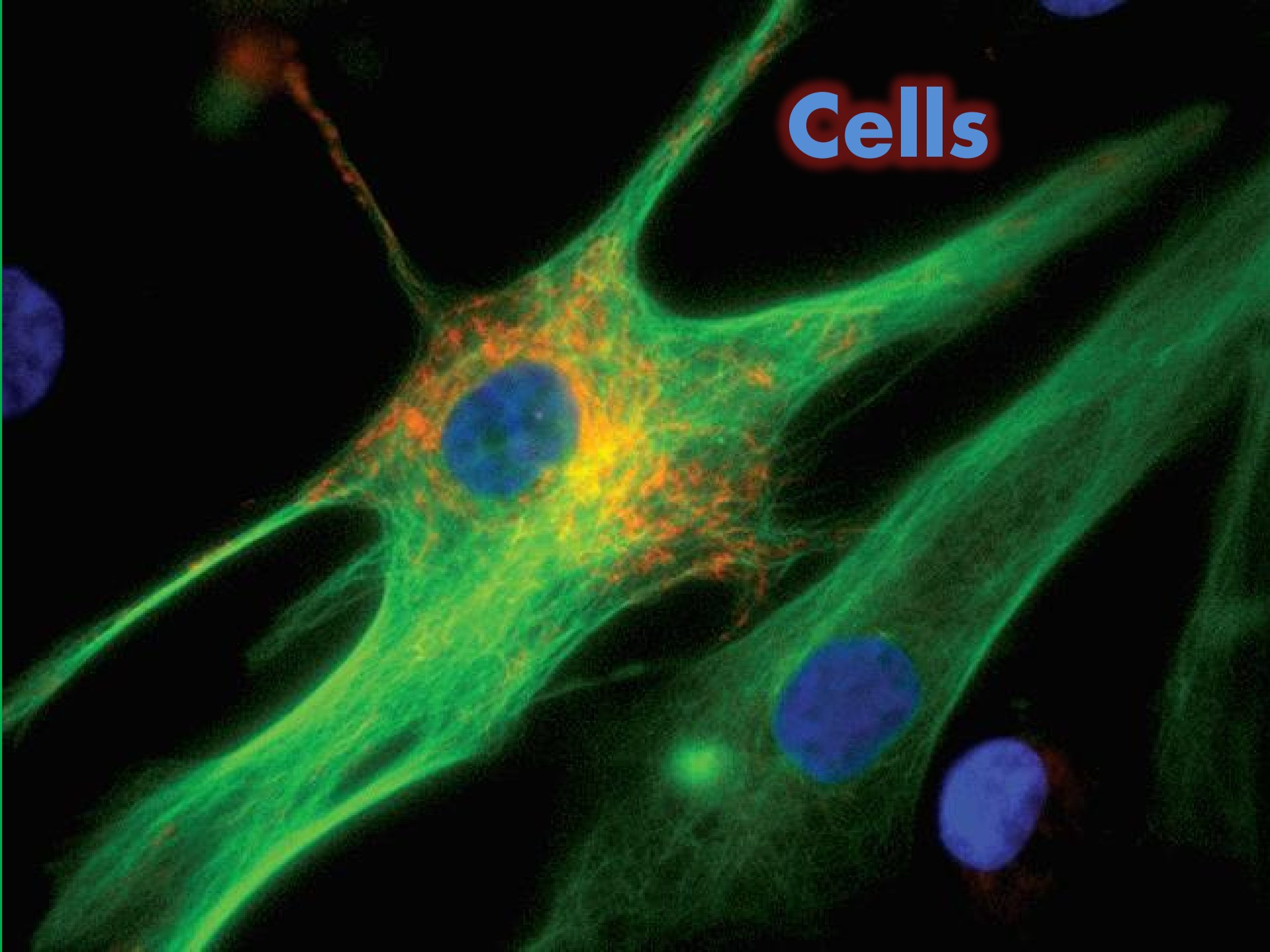
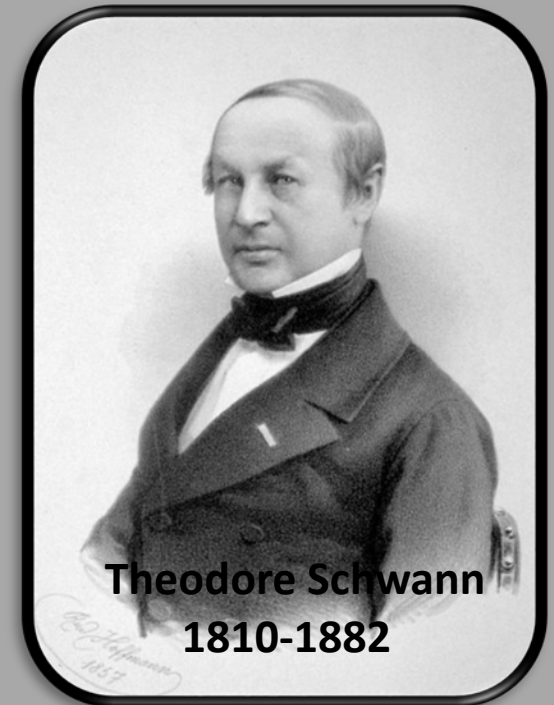
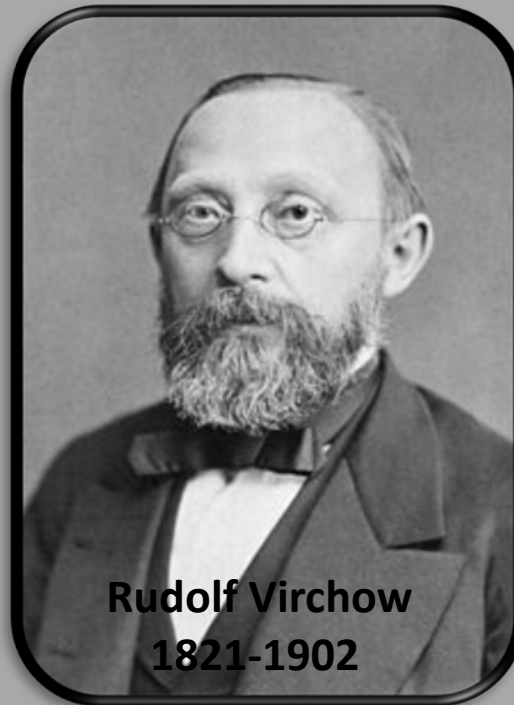
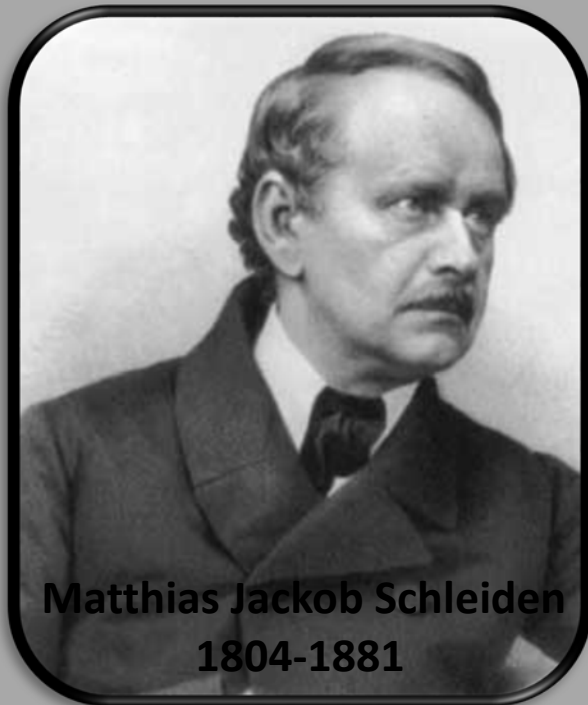


Cells



Introduction: Cell Theory

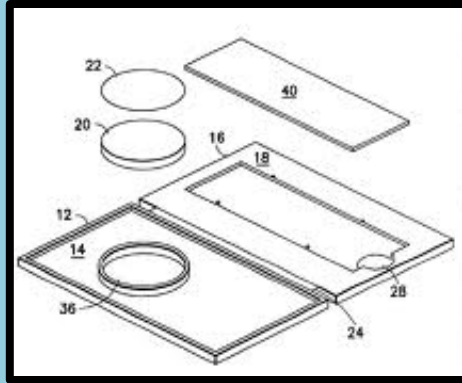
- All organisms are composed of at least one cell, and all life processes come from cells, which is the functional unit of all organism. Matthias Jakob Schleiden provided the research necessary to prove this for plants, and Theodore Schwann did it for the animals. Therefore, all organisms are related to one-another at the cellular level.



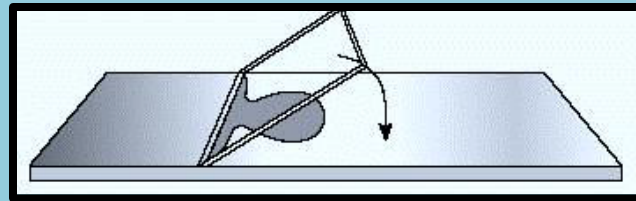
- Rudolf Virchow provided the evidence that “all cell come from pre-existing cells.”

Exercise 1: Wet-mount Slide (page 71)

- I. The **permanent mount** is prepared for you with a cover slip glued to the slide, and is usually stained.



- II. The **wet-mount** is one you prepare either with water or with a stain. In either case, put a drop of solution on the slide **before** you put the specimen in it. Then, at an angle, touch the cover slip to the drop so it spreads out, and ease the cover slip down at an angle (don't plop it down, or you will trap air bubbles!).



Exercise 2: Human Cheek Cells (page 72)

- Two types of Cells:

Prokaryotic: simple with no organelles, small, and all bacterial.

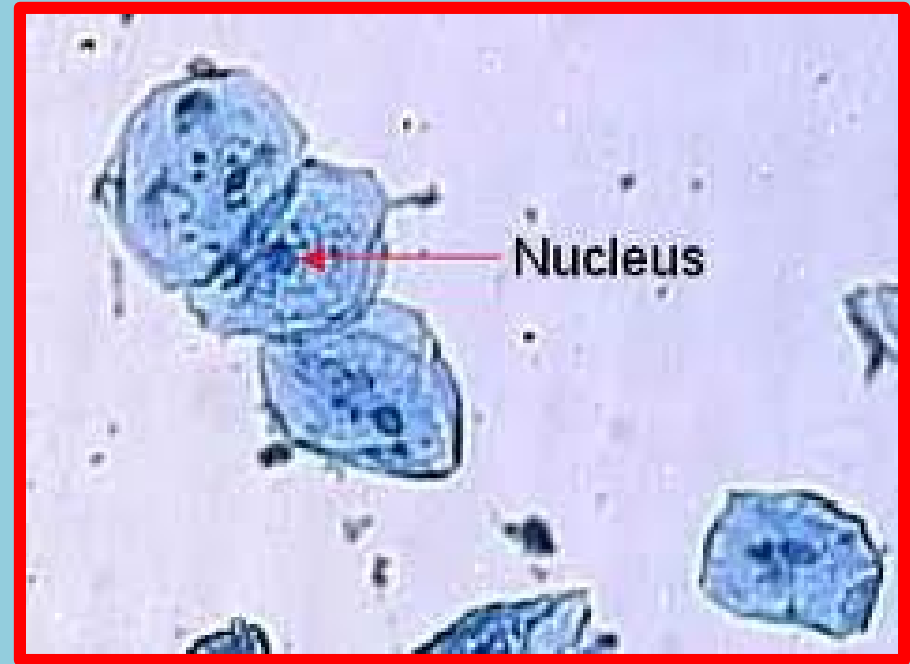
Eukaryotic: Large, complex, with lots of different organelles, and they are the only ones that can make up a multicellular organism. All cells you will see today are eukaryotic (the prokaryotic cells are too small).

- Note – use the flat end of the toothpick, and do not gouge yourself when obtaining your cheek cells. Also, since your cheek cells are very small, start with the low power (10X) objective lens first to find your cells, then switch to the high power (43X) objective lens, and draw a cell or two on page 73. Answer questions 1-3 on page 73.

Human Epithelial (Cheek) Cells in Methylene blue



Low Power (100 X)



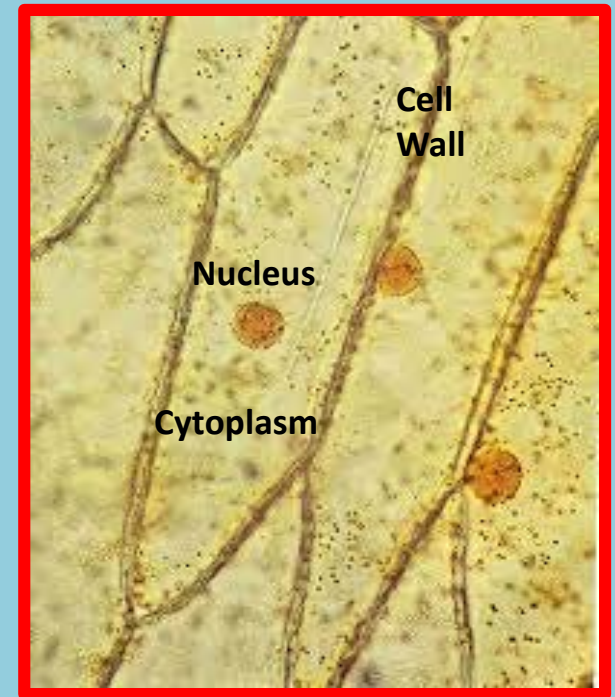
High Power (430X)

Exercise 3: Onion Cells (page 73)

Inner Skin of Onion stained with Iodine

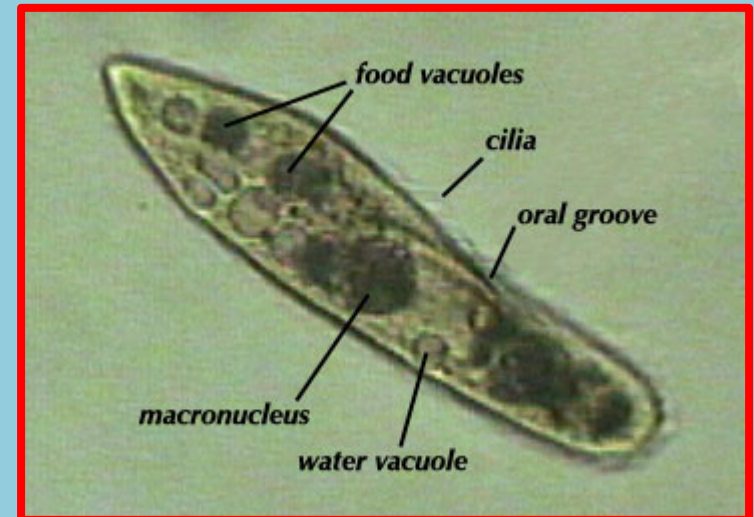


Low Power (100X)



High Power (430X)

Exercise 4: Paramecium (page 74)



Exercise 5: *Elodea sp.* Leaf (page 76)



High Power (430X)



High Power (430X)

Note on the right-hand image – dark and broad cell wall (and more square looking) are the bigger cells, while the thin-walled cells are smaller and more rectangular, and are superimposed on top.

Draw Elodea leaf on page 76, and answer questions 1-8 on page 77.

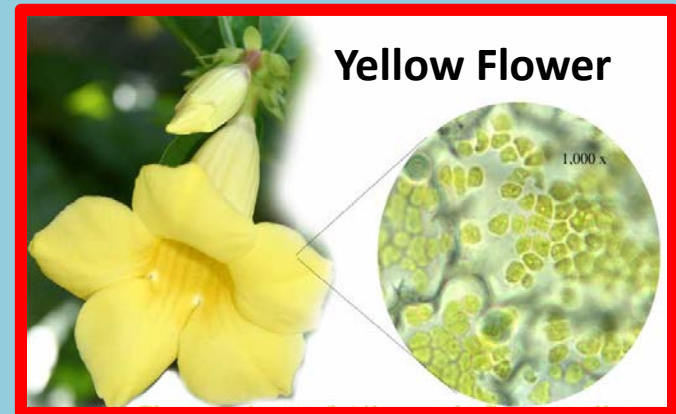
Exercise 6: Color Comparison (page 77)

Is the pigment in the water of the central vacuole with an even distribution of color, or a plastid with dots of color?

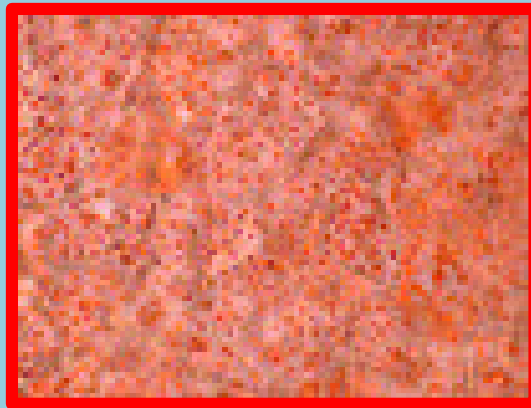


Green *Elodea*

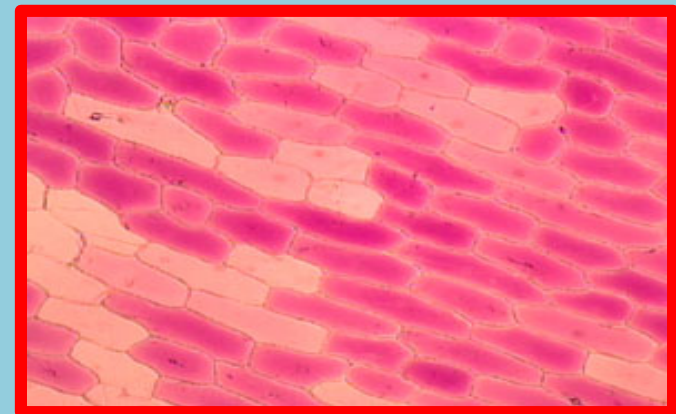
Answer questions
1-4, page 78



Yellow Flower



Red Bell Pepper



Red Onion – Outer Skin in water

Exercise 7: Zebrina Leaf Epidermis with Stomata (page 79)



Draw stomata page 79, and answer questions 1-4 page 80.