# Animals 4

- send answer to iClicker Question 19A now.
- Moth II
  - new data
- Earthworm
- Starfish I
- iClicker Question 19B

Nothing due in lab **this** week (Lab Practical Exam)

Don't forget to register your iClicker at the Bio 112 website

Don't forget the Phylogenetic Collection Lab

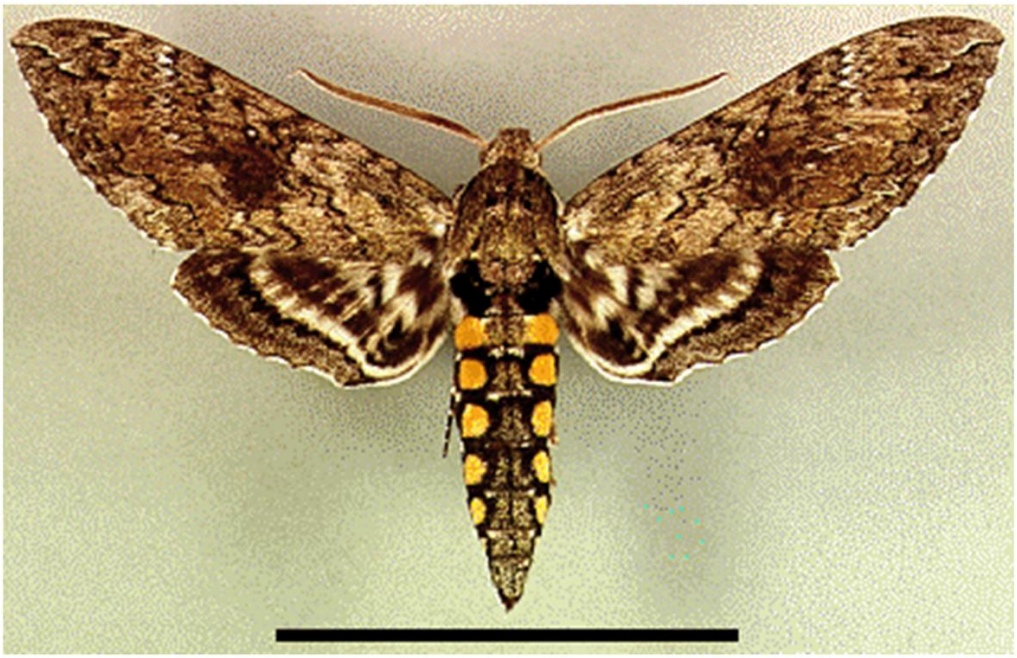
Exam 2: Monday 4/5 (info in Animals 3 handout)

- Last names A - G in McCormack Cafe
- Last names H - Z here (1 bonus point for going to correct place!)

Final Exam Wednesday May 19 11:30 - 2:30



# Tobacco hornworm moth

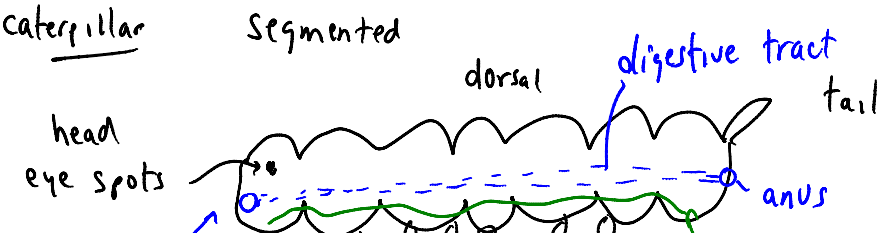


caterpillar continued

habitat / food : tobacco plants in temperate climates

life cycle : larva (caterpillar) → metamorphosis → moth

caterpillar segmented



mouth

9 pairs of legs
Ventral

Ventral nerve cord

structure: light exoskeleton  Excretion: see handout

Circulation open (not always in a vessel) many hearts

- fluid is pumped out into body cavity & sucked back into blood vessels
- have blood cells but they don't carry $O_2$

respiration: highly-branched tracheoles bring air "near all cells"
pumped in/out through spiracles
by motion of animal (& more)

reproduction - adult form (moth) ♀, ♂ mating

* no asexual at all
* larvae can't reproduce

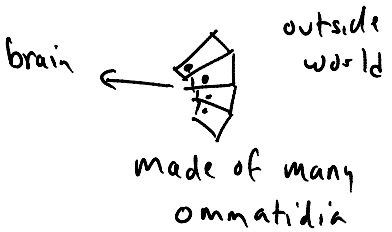
moth's systems - same as caterpillar except:

eats nectar  structure: stronger exoskeleton

motion: walk, fly

* only live long enough to mate & lay eggs

nervous system - brain & compound eyes - can form images

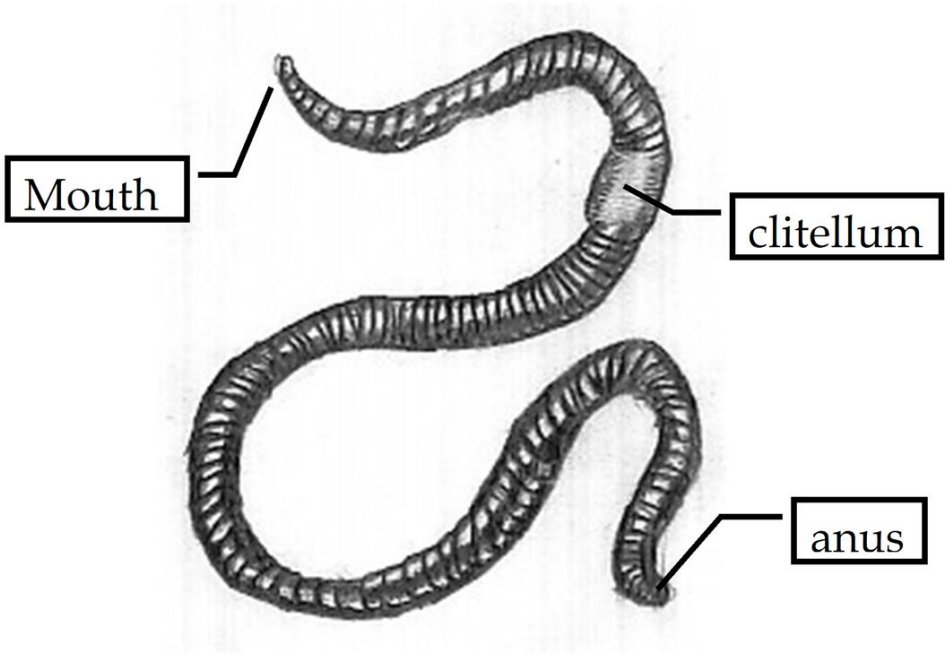



made of many ommatidia

one ommatidium


single light-sensing cell

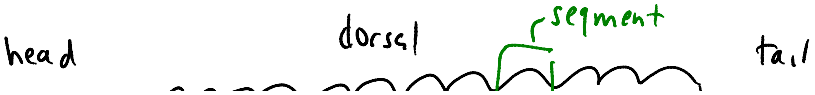
# Earthworm

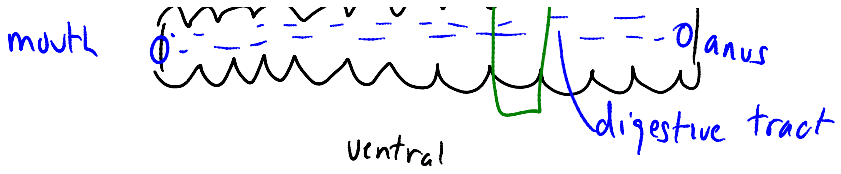




Earthworm (Lumbricus terrestris) phylum: annelida (lophotrochozoa)

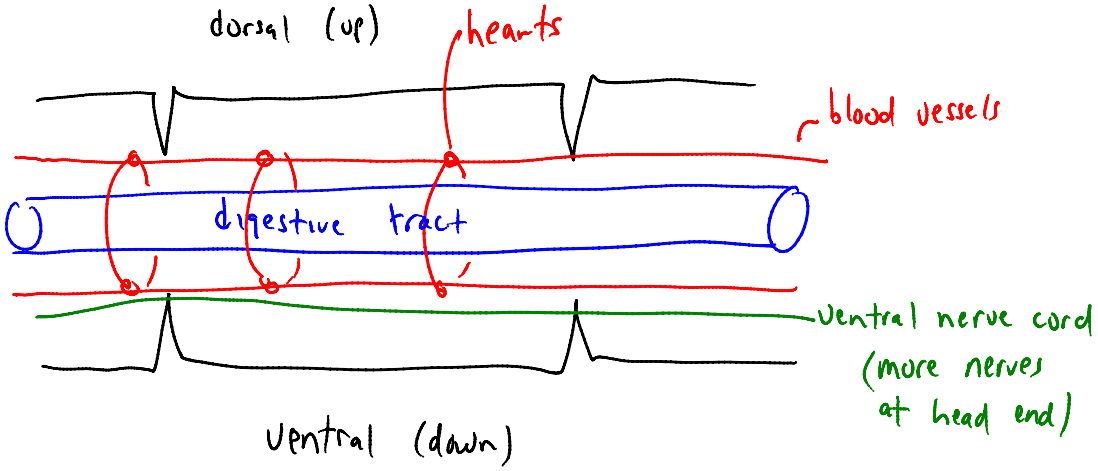
- segmented worm - repeated similar units

Habitat soil eat organic matter (live & dead)






Side view of segment - each has excretory unit

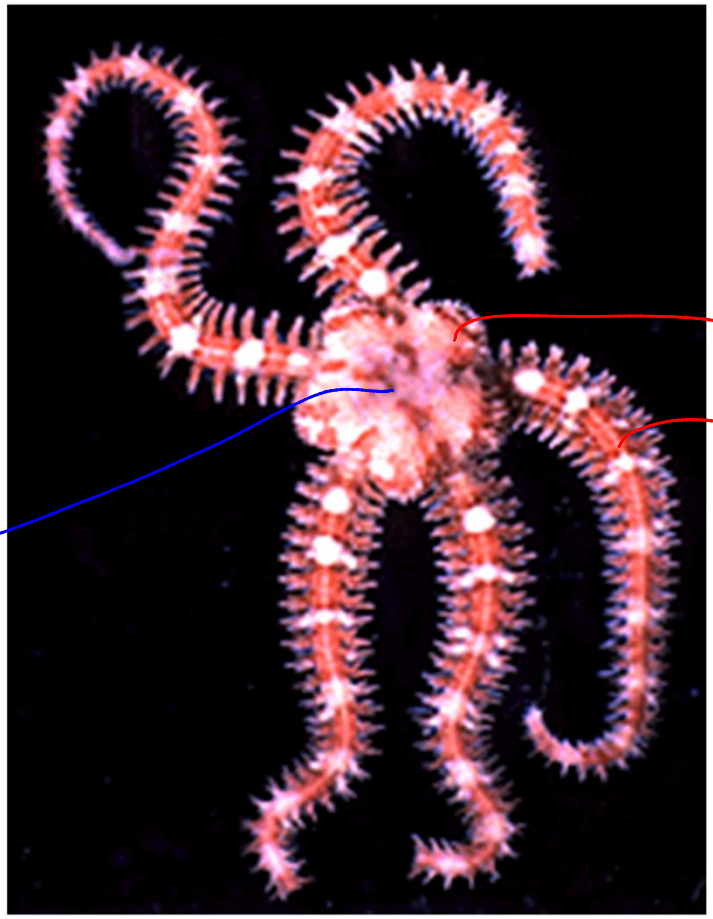



Respiration - see handout

Circulation closed, hearts

Motion: expand & contract segments to grab & pull thru soil

# Starfish



disc

arm

dorsal view

anus (mouth on underside)

phylum: echinodermata (deutero stomes)

5-fold radial symmetry

found: salt $H_2O$ only

eating: pull open bivalves (clams, etc), insert stomach & digest in shell

structure: shell ("test") interlocking bony (protein + $CaCO_3$) plates