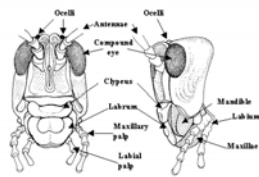


Phylum Arthropoda

- **Subphylum Trilobita**
trilobites- all extinct.
- **Subphylum Chelicerata**
mainly arachnids- mainly terrestrial
- **Subphylum Crustacea**
very large and diverse- mainly marine
- **Subphylum Uniramia**
even larger and more diverse- mainly terrestrial-
myriapods and insects

Subphylum Uniramia



- Myriapods and Insects
- Head:
acron plus 4 segments: 1 pair antennae, 1 pair mandibles, 2 pair maxillae
- Uniramous limbs
- Tracheal system for gas exchange
air-breathers
- Malpighian tubules for excretion
purines as nitrogenous waste product

Mandibles



- Appendages of third post-acron segment, used for chewing
- Both crustaceans and uniramians have mandibles.
- Homology or analogy?
- Uniramian jaws are inarticulate (one-piece), crustacean jaws are multiarticulate (jointed)

Subclass Chilopoda- centipedes
Superorder Epimorpha

- eggs brooded by female
- young hatch with full number of segments
- Includes scolopendromorphs and geophilomorphs

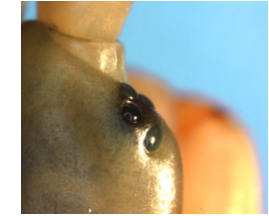


O. Scolopendromorpha
large epimorphs,
with 21 or 23 pairs of legs

Missouri glade scorpion
is *Scolopendra* – can exceed
6 inches in length

Another *Scolopendra* from S. Arizona





Scolopendra

The "bite" (really a pinch) is toxic but not usually serious. Several species are commonly sold as "pets".



Female apparently allows young to feed from her leg joints for weeks

O. Geophilomorpha

earth centipedes- elongate, eyeless burrowers, with 191-310 pairs of legs





Subclass Chilopoda
Superorder Anamorpha

- eggs not brooded
- young hatch with reduced number of segments and add segments at subsequent molts
- **O. Lithiobiomorpha** stone centipedes
15 pairs of legs
- **O. Scutigromorpha** house centipedes
15 pairs of very long legs, compound eyes, hemocyanin, dorsal spiracles.

O. Lithiobiomorpha

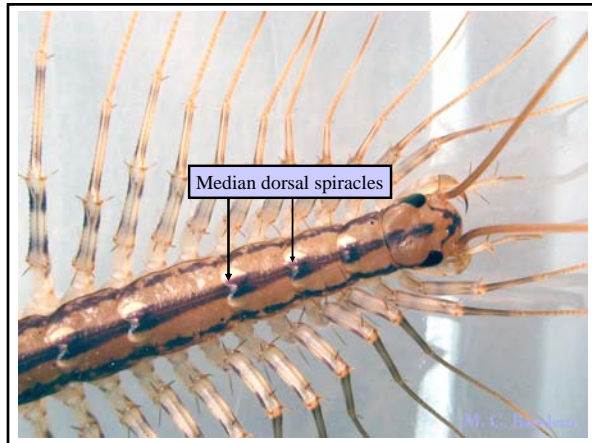
stone centipede- *Lithobius*
Common in Missouri woodlands



O. Scutigeraomorpha

House centipede *Scutigera coleoptrata*
Introduced into North America from Europe

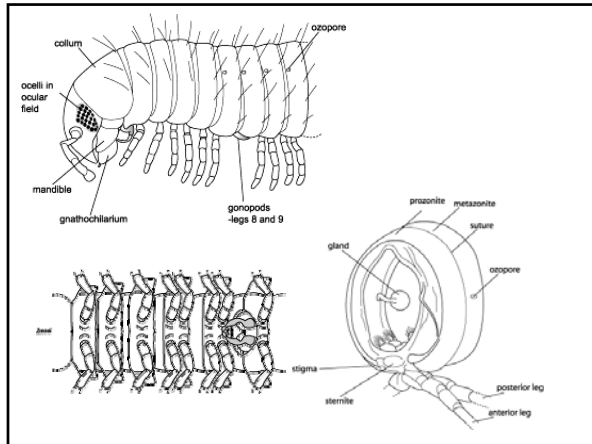




Subclass Diplopoda- millipedes

- More diverse than centipedes
About 10,000 known species
in 15-17 orders
- 1 pair antennae, jaws, first maxillae fused, second pair lost
- Compound eyes
- Tagma: collum, diplosegments
- Detritivorous, herbivorous
- Repugnatorial secretions





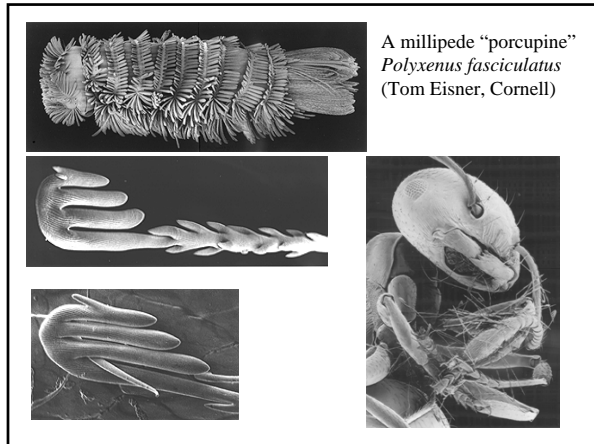
Reproduction in millipedes

- Males have 1 or 2 pairs of limbs modified as gonopods for copulation
- Females make underground nest chamber lined with fecal secretions
- Young hatch with 3 pairs of legs and add segments with each molt to maturity
- Long lifespan and delayed sexual maturity in some species

Subclass Diplododa Order Polyxenida

- Tiny, hairy, can be mistaken for dermestid beetle larvae.





Subclass Diplododa
 Order Spirobolida

- Cylindrical body
- Includes the largest-bodied U.S. species:
Narceus
- Benzoquinone secretion

Narceus americanus- widespread in eastern US,
 common in Ozark woodlands

Subclass Diplododa
Order Polydesmida

- Dorsoventrally flattened, with lateral dorsal paranota
- Colorful, common in woodlands
- Can produce cyanide gas from the ozopores



Order Polydesmida
White Rock, Franklin Co AR









Ecological significance of millipedes

- Most are detritivores, and they are often very abundant.
- Role in breakdown of leaves and woody debris and recycling of cellulose
- Occasional pest status- especially introduced species, eg. Black Portuguese millipede *Ommatoiulus moreletti* in Australia

Millipedes

| | | |
|---|---|--|
| <input type="button" value="Add"/> <input type="button" value="Remove"/> |  | Giant African Millipede (<i>Archispirostreptus gigas</i>) 1" - 3" babies, \$9 each These monstrous millipedes get huge, reaching in excess of 10", and 1" thick. Have been a classic for years, and do well in captivity. Cool Pede! |
| Qty: <input type="text"/> <input type="button" value="Review"/> | | |
| <input type="button" value="OUT"/> |  | Giant Forest Millipede (<i>Pachydosmus sp.</i>) 3" adults, \$10 each From the forests of the southeastern U.S., these giant flat millipedes are like little tanks! Neat millipede, not often available. |
| <input type="button" value="Add"/> <input type="button" value="Remove"/> |  | Puerto Rican Sun Banded Millipede 1" - 3" adults, \$5 each Small Puerto Rican species, that has a very beautiful irridescense, of yellow banding. |
| Qty: <input type="text"/> <input type="button" value="Review"/> | | |
| <input type="button" value="Add"/> <input type="button" value="Remove"/> |  | Mississippi Brown Millipedes 3" - 4" adults, \$8 each Seldom seen, nice southeastern U.S. species, thin red banding, do well in captivity. |
| Qty: <input type="text"/> <input type="button" value="Review"/> | | |
| <input type="button" value="Add"/> <input type="button" value="Remove"/> |  | Puerto Rican Red Millipedes 1" - 3" adults, \$5 each Small, but beautiful Puerto Rican species. Nice red! Cool little pede! |
