Phylum Sipuncula
(Peanut Worms)

~320 species; a few fossil forms

unsegmented benthic worms with **tentacles**

look like small sausages or peanuts

most < 10cm long; range 2mm to >72 mm

all are **marine**

most species have worldwide distribution

mainly in shallow waters

widespread on mud and sandy shores

a few to 5000 M

sedentary; most construct burrows in mud or sand lined with **mucus**

a few live in coral crevices

one species bores into wood

extend tentacles to feed

when some species contract their tentacles into the body they resemble a peanut

generally drab colors

no setae

Body

wormlike body is divided into two parts

anterior section = **proboscis** (=introvert)
posterior end = swollen **trunk**

introvert

bears mouth surrounded by scalloped fringe, lobes or tentacles

anterior retractile tentacles

are ciliated and grooved

trunk

muscular walls

Body Wall

has thick soft **cuticle** secreted by epidermis

beneath epidermis are layers of circular then longitudinal muscles

eucoelomate = true coelom

large, fluid filled coelom

traversed by muscles and connective tissue strands

Feeding & Digestion

are nonselective, suspension or deposit feeders

food is collected by cilia and mucous on tentacles

food is drawn into mouth when tentacles are retracted

"J" Shaped digestive tract with anus

bands of muscles control tentacles and anchor digestive tract and help to stir its contents

Respiration

gas exchange through body wall

Circulation

no circulatory system

have two chambered coelom with circulating coelomic fluid to transport gasses, nutrients and wastes

coelomic fluid contains **red blood cells** with

hemerythrin to carry oxygen

Nervous System

brain with circumoral ring

ventral unsegmented nerve cord

some simple sense organs

Excretion

1 pair of sac-like **nephridia**

Reproduction & Development

asexual reproduction occurs by transverse fission

→ posterior 1/5th of body pinches off to produce a new individual

sexual reproduction

almost all are **dioecious**

ovaries and testes develop seasonally

gametes develop in coelom and exit through nephridiopore

external fertilization

larvae usually a **trochophore larva**

→ may indicate molluscan affinities

Sipunculus most comon genus

Evolutionary Affinities

sipunculids are schizocoelus protostomes

may be distantly related to annelids