Phylum Priapulida
(Penis Worms)
(from “priapos” the greek god of reproduction)
17 living & 11 fossil species (Burgess shale)
they were probably major predators during the Cambrian
cylindrical cucumber shaped worms that live in sand or mud
.5mm to 30 cm long
all marine benthic animals mostly in colder waters
→from shores to several 1000 M’s
→ marine burrowers
some species show high tolerance for hydrogen sulfide and low oxygen levels

Body Form
body divided into:
proboscis (pharynx or introvert)
appears somewhat swollen
retractable
used in locomotion and in feeding
has adhesive tubules used to capture prey
has rows of spiny sensory projections (=stylets)
in some species these are elongated into tentacle-like structures

trunk (abdomen)
covered with tubercles and spines
30-100 superficial rings
tail or caudal appendages
hollow
probably a respiratory organ
also chemoreceptor

Body Wall
body wall is covered with cuticle of chitin over epidermis

cuticle is molted periodically

with rows of circular and longitudinal muscles
→ contractions circulate fluid in body cavity
→ also uses hydrostatic skeleton to move along substrate
circular and longitudinal muscle layers in body wall
body cavity is pseudocoelom that acts as a haemocoel

Feeding & Digestion
most are burrowing predators
feed on bacteria and soft bodied invertebrates
eversible pharynx
in mouth, cuticle is modified into teeth
a few species are suspension feeders
complete digestive tract
contains microvilli to improve absorption
terminal anus

Nervous System
simple nervous system
nerve ring around pharynx
prominent mid ventral nerve cord with ganglia running the length of the animal
no specialized sense organs
nerve endings, probably for the sense of touch around the mouth

Excretion
excretion via protonephridia (1000’s of solenocytes)
drains through urogenital pore

Reproduction
dioecious
reproductive system is closely associated with the excretory system

eggs and sperm released into water

extremely slow development

produces a free swimming larva in about 3 weeks