

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

Circulation

no circulatory system

but contraction of body wall circulate fluids in body cavity

coelomic fluid contains O₂ carrying cells and phagocytes

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