

Phylum Nemertea (ribbon worms or proboscis worms)

translates as "unerring one"

→ refers to animals ability to very accurately shoot its long proboscis to capture prey

(formerly, Rhynchocoela or Nemertini)

~1150 species

first described in the 1700's; until 1850's considered platyhelminthes

share many basic characteristics

slender, very fragile ribbon-like worms
→ resemble tangled mass of slimy string

most < ~8" (20 cm)

but longest animal in existence is a nemertean

Lineus longissimus = 197' (60 M) long

regardless of length most are <1" (23mm) wide

often very brightly colored

some white, red, yellow, green, purple

some species construct mucus or cellophane-like tubes

others curl up into balls and secrete a covering of mucus around themselves

almost all are free living, benthic marine worms

found in every ocean; from surface to abyssal zone

most are benthic; a few pelagic species

fairly common on beaches; often found inside shells, under stones or in tangles of algae; some burrow into mud and sand

arctic ribbon worms commonly wash ashore by the billions

a few are found in freshwaters

a few are terrestrial in moist tropical soils

a very few are parasitic

Body Plan

general body plan similar to platyhelminthes:

triploblastic, acoelomate, bilaterally symmetrical

ciliated epidermis
few with rhabdites

Feeding

carnivores

eat earthworms, sea worms, small mollusks and any small soft bodied animal

use eversible **proboscis** (pharynx) to capture prey

proboscis everted and retracted by muscle bundles in rhynchocoel (a space around proboscis)

often at front of proboscis is sharp pointed spear-like **stylet** that impales prey

often tipped with poison

sometimes impales with such force that it breaks off

writhes for hours

animal can grow a new one

in some the proboscis is a sticky lasso that coils around its prey

proboscis (pharynx) is unusual because it is not connected to GVC in most

have **complete digestive tract** with **anus**
→ one way path from mouth to anus

like snakes they can devour animals larger than themselves

without food some can live up to 1 yr by self digesting like planarians

most can shrink at will to < 1/3 their ordinary length

Circulatory System

true blood vascular system

Nervous System

have a 4 lobed "brain" and two nerve cords extending down the length of the body

nervous system is similar to but somewhat more elaborate and complex than flatworms

Excretion

excretory system of **protonephridia** with flame cells like flatworms

Reproduction

Asexual

some reproduce asexually

fragmentation

some can break into 100's of fragments

makes them difficult to collect whole

each fragment can grow into a complete worm

regeneration

some with great powers of regeneration

Sexual

most are **dioecious** (unlike flatworms)

fertilized egg develops into **ciliated larva**

some fragment in warm weather and reproduce sexually in colder weather

Evolutionary Relationships

molecular evidence shows them more closely related to lophophorates than to turbellaria

eg. *Cerebratulus*

best known example of phylum

may reach lengths up to 2 meters

eg. *Prosoma*

tiny worm

is common in freshwater ponds