

Phylum Gnathostomulida (jaw worms)

100 species; no known fossils

→ probably many more living species

discovered in 1928 Baltic Sea

not formally described until 1956

almost all are marine

living in anoxic sand and mud sediments in shallow coastal waters

members of **interstitial fauna** (meiofauna) between sand grains

densities up to 3000 jaw worms/lb of sand

all are microscopic

→ most less than 1mm long

slender to threadlike worms with transparent body

some have a distinct **head, trunk and tail**

phylum characterized by distinctive forceps-like jaws

thought they were small turbellarians until 1969

Animals: Phylum Gnathostomulida; Ziser Lecture Notes; 2015.10

1

Body Wall

ciliated epidermis used to crawl between sand grains

epithelium is not quite the same as planarians → 1 cilium/cell

longitudinal muscle loose in parenchyma in body wall

acoelomate body – no body cavity

Digestive System

feed on bacteria, fungi and protists

the ventral **mouth** is found just behind the head

pharynx not eversible

pharynx with strong “jaws” made of cuticle

sometimes with small teeth

jaws supplied with strong muscles

the mouth opens into a blind ended tube (intestine) in which digestion takes place

no anus but may have small anal pores connecting the intestine to the epidermis

no circulatory or respiratory system

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2

have simple brain and nerve net

the only identifiable sense organs are modified cilia

especiall found in the head region

excretory system consists of **protonephridia**

but

have **solenocytes**, not flame bulbs in protonephridia

Reproduction

all are **monoecious (hermaphrodites)**

gonads are not well defined

egg and sperm in parenchyma

no gonopore

one egg matures at a time

internal fertilization

some species are **parthenogenetic**

some species are **protandric**

direct development, no larval stage

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3